PLANNED SOCIAL CHANGE: A CASE STUDY OF AGRICULTURAL EXTENSION OFFICERS IN SOUTH NYAKACH, KISUMU DISTRICT, KENYA

BY

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DECLARATION

This thesis is my original work
and has not been presented for a
degree in any other University.

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This thesis has been submitted for
examination with my approval as the
University Supervisor.

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CONTENTS **PAGE**

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ABSTRACT

This study focuses on those factors which impede farmer adoption rates of agricultural innovations in the South Nyakach Location of Kisumu District, Kenya.

An analysis is made of organizational issues within the extension service which affect staff performance in their areas of operation. The communication channels utilized to reach the farmers are discussed and their defects illuminated. It is argued that cultural belief systems do not necessarily impede farmer adoption rates of innovations. On the contrary, if people are provided with incentives they can adopt new values and motives that can promote development.

The study is based on data collected between November, 1989 and February, 1990 from a sample of 90 small-scale farm households in the area of study. The data were derived from primary as well as secondary sources. The primary sources included the survey technique, participant observation and key informant technique. On the other hand secondary sources included library research and government statistical abstracts.

The study concludes that attractive incentives must be provided to extension staff to attract, retain and motivate them to perform their duties effectively. Suggestions are also made on how farmers can be effectively involved in extension services so as to improve food production in the rural areas.

LIST OF TABLES

CHAPTER 1

INTRODUCTION

1.1 The Environment, The People and the Economy

Kisumu District has six divisions, namely, Maseno, Winam, Muhoroni, Nyando, Nyakach and Kisumu Municipality (fig.I). According to the population projections for Kenya 1980 - 2000, by the Central Bureau of Statistics (CBS) 1983, the projected population of Kisumu District in 1989 was 748,624 persons, of whom 95% were Kenyan African Luo. The population density was from less than 100 people per square kilometre in some parts of the district, to more than 500 persons per square kilometre in others.

Ecological Factors

Ecologically, Kisumu District is divided into three zones: the Lake Shore Savanna, which includes Siaya District, the Intermediate or High Rainfall Savanna and the Star Zone which includes Nyakach Division. Nyakach Division comprises the area between 1,371m and 1,524m (Alila, 1978 : 13). The CBS population projections for Kenya 1980 - 2000, published in 1988 indicates that, presently the population of Nyakach consists of 115,071 with a density of 321 persons per square kilometre. For administrative purposes, Nyakach Division has been divided into Upper and Lower Nyakach Locations. Upper Nyakach consists of

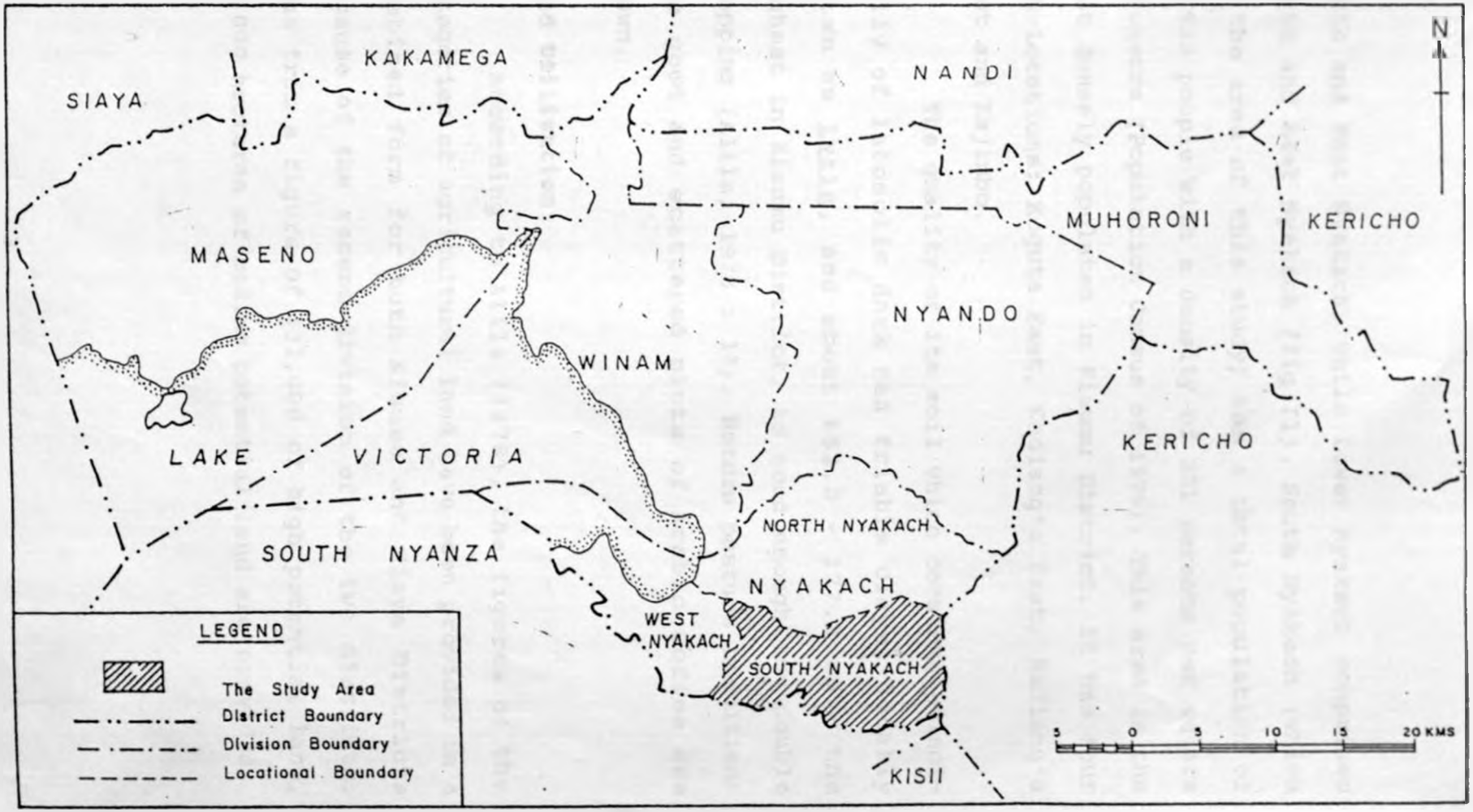


FIG. 1 LOCATION OF THE STUDY AREA IN KISUMU DISTRICT.

South and West Nyakach, while Lower Nyakach comprises North and East Nyakach (fig II). South Nyakach (which is the area of this study) has a total population of 23,939 people with a density of 301 persons per square kilometre (Population Census of 1979). This area is the most densely populated in Kisumu District. It has four Sub-Locations: Koguta East, Kadiang'a East, Kadiang'a West and Kajimbo.

The quality of its soil which consists principally of latosolic dark red friable clays, locally known as lwala, and about 152.0 - 177.8 cm - the highest in Kisumu District, is good enough for double cropping (Alila, 1978 : 13). Nature pasture conditions are good and scattered plots of Arabic Coffee are grown.

Land Utilization:

According to Alila (1978), the figures of the categories of agricultural land have been provided in a combined form for both Kisumu and Siaya Districts because of the recent division of the two districts. Thus from a figure of 432,000 of high potential land, 29,000 hectares of medium potential land are provided.

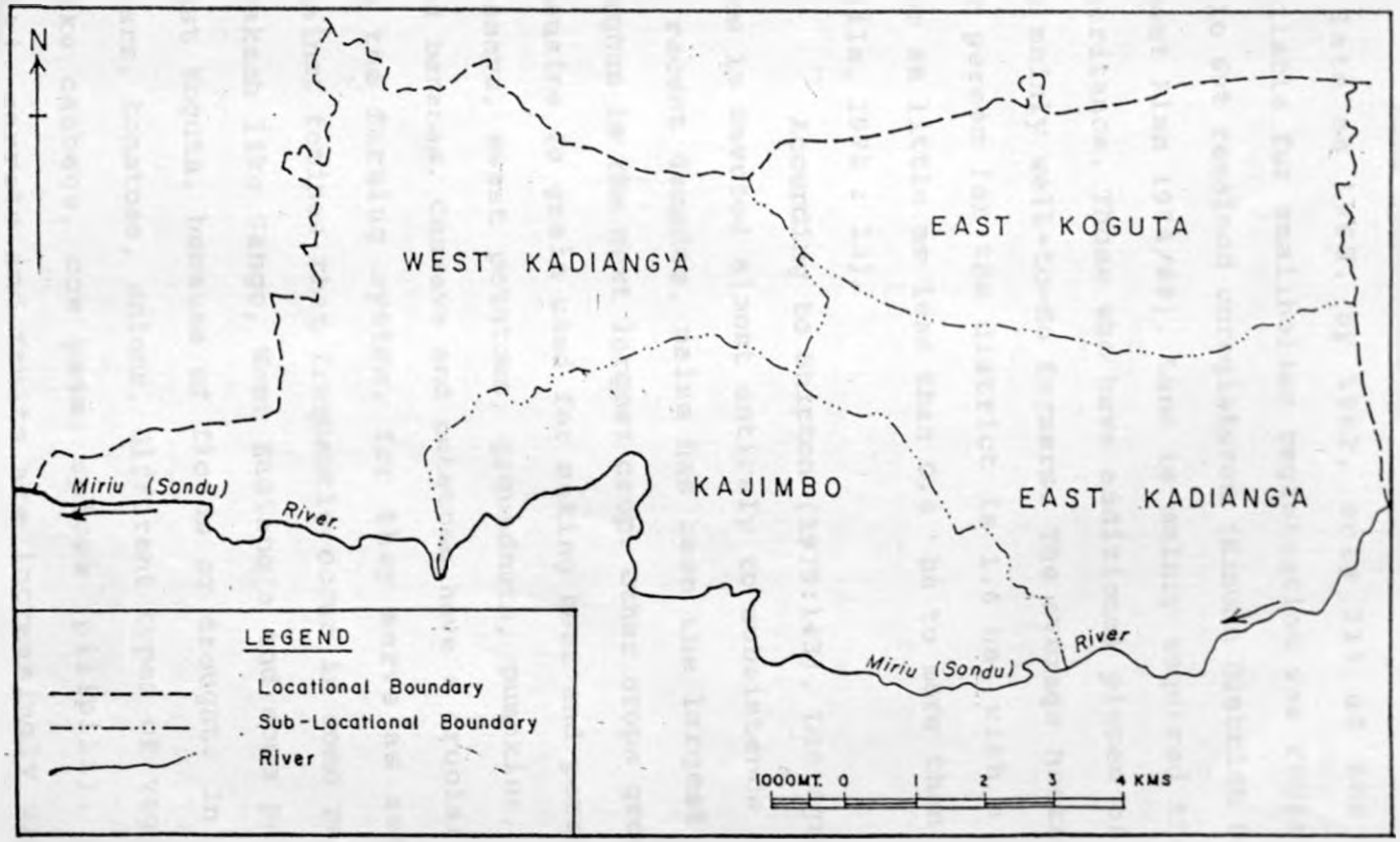


FIG. 2 SOUTH NYAKACH LOCATION – ADMINISTRATIVE BOUNDARIES

Land consolidation started in Kisumu District as late as 1965. By 1982, only 31% of the land available for smallholder registration was registered while 69% remained unregistered (Kisumu District Development Plan 1984/88). Land is mainly acquired through inheritance. Those who have additional pieces of land are mainly well-to-do farmers. The average hectareage per person for the district is 1.6 ha, with a range from as little as less than 0.4 ha to more than 40 ha (Alila, 1978 : 13).

According to Shipton (1979:143), Luo agriculture is devoted almost entirely to subsistence crops. In recent decades, maize has been the largest crop. Sorghum is the next largest crop. Other crops grown are eleusine (a grain used for making beer and porridge), cassava, sweet potatoes, groundnuts, pumpkins, beans and bananas. Cassava and potatoes have a crucial place in the farming system, for they serve as security against famines that frequently occur in some parts of Nyakach like Sango, West Kadiang'a and some parts of East Koguta, because of floods or drought. In recent years, tomatoes, onions, different types of vegetables like cabbage, cow peas, spices (pilipili), sukuma wiki, carrots and fruits are increasingly planted. Sheep, goats, cows and poultry are also kept.

Planting is done in two phases. During the long rains, which occur between January and February, crops are planted. They are weeded from February, March and April. Harvesting is done from June to July. With the short rains, opon, which occur during the months of August and September, replanting is done of all the crops, except cassava which is harvested after a period of two years. They are weeded in October and harvested in December.

Agricultural development efforts have also concentrated on export crops like cotton, rice, sugar-cane, coffee, sisal and rubber. Generally these cash crops have not been very successful. Although the Colonial Government introduced cotton at the turn of the century, "the Luo did not pick it regularly and it tended to spoil" (Fearn 1961). Coffee was introduced to the Luo by the Colonial Government in South Nyanza in 1935, and was later taken up by farmers in South Nyakach and other parts of Kisumu District. However, Government restrictions imposed upon its cultivation were prohibitive and there are now no more than a few hundred hectares of coffee in the whole of Luoland. Sugarcane seems to have been more of a success in recent years. As a result, a sugar processing plant worth 850 million shillings, was constructed in the Sare Valley of South Nyanza (Shipton, 1979 : 149).

The failure of market - crop development and little acceptance of farm innovations like new planting and fertilizing techniques introduced during the colonial period, can be attributed to several factors.

One was the fact that the Colonial Government concerned itself almost entirely with the needs of the European settlers. Its agricultural and veterinary departments gave little assistance to African economic development. Nyanza Province had very few facilities like roads, with a small British administrative staff and negligible commercial activity. There was only one Extension Service Station located at Kibos , east of Kisumu which catered for the needs of the farmer in the whole Province. There have been no drastic changes on the extension services provided by the Government to the farmers since Independence, for as the Kisumu District Development Plan 1984 - 1988 states, "The problems and constraints impeding increased and modernized agriculture in Kisumu District are: Inadequate advisory services, lack of adequate farm inputs, poor marketing and distribution facilities, instability of producer prices, adverse weather conditions and lack of certified seed, pest and diseases".

Another factor which encouraged little agricultural activity among the Luo was the late advance-

ment of individual titles in land. Unlike Central Province, there was little land alienated for white settlers in Nyanza Province. The Colonial Government ignored the demands of the Young Kavirondo Association who had argued in favour of individual land tenure. They had stated that the issuing of title deeds would enable individuals to have access to loan capital for the purpose of developing productive forces. The Colonial Government in turn argued that productive forces could be developed without necessarily changing the land-tenure system in Luo-land.

Thus although the Swynerton Plan which involved consolidating land fragments into single holdings and issuing registered freehold titles to individuals was introduced in Gikuyuland during the early 1950's, it was delayed in Nyanza Province. As a result, its people continued to provide labour in settler farms, while the agricultural production in the countryside stagnated.

Although the Luo were slow to enter the market economy through agricultural activities, they were eager to engage in non - agricultural pursuits like wage labour and other jobs in the urban centres. Because work in urban centres has become lucrative and incomes of the wage workers and their families have risen in real terms, many city workers now spend most

of their adult life there (Shipton 1979). They send money to their relatives back home, frequently visit them and they keep claims to land to return to upon retirement. As Shipton (1979 : 151) aptly puts it, "They stop short of becoming a landless ploretariat".

1.2 Statement of the Problem.

This study seeks to examine the role of agricultural extension officers in effecting change in the agricultural sector in South Nyakach, Kisumu District, Kenya.

The need to focus on the role of extension officers in effecting change among farmers arises from the fact that the rate of adoption of farm innovations by small-scale farmers in Kenya is quite low.

In part, this seems to be because of a variety of factors like: lack of adequate agricultural knowledge on the part of the farmer, lack of capital, lack of adequate technology, little involvement of women who are the cornerstone of agricultural production in extension services, and so on. It could also be because of the wrong development policies formulated by development planners who, for a long time, have considered development in the third world countries to mean economic growth and modernization while ignoring more vital aspects like humanity and liberation.

This has resulted in low food production in the rural areas, which has in turn led to food shortages especially in the marginal areas of the country, low farm incomes and the rapid migration of the youth to urban areas in search of better employment opportunities. Kenya's development problems are further compounded by the fact that it has a population growth rate of 4% - one of the highest in the world, and yet its capacity to produce food is less than the population growth rate (Fleuret, 1985 : 1). Kenya must therefore initiate agricultural development policies which aim at self sufficiency in food production.

The key to increased food production in the rural areas has been considered by development planners to be increased delivery of agricultural extension about innovations such as fertilizers, improved food variety and pesticides, the control of pests, diseases and weeds, the use of better farm equipments in conjunction with technical packages and credit, crop rotation, green manuring and the like (Kimberly 1986). As a result, the ministry of agriculture has created the department of agricultural extension services, whose duty is to facilitate the dissemination of agricultural information to rural farmers.

It is therefore surprising that instead of an increase in food production on small-scale farms in the rural areas this sector has actually declined since the 1970's (Umalele, 1975 : 62). The question one would therefore ask is, if the technical knowledge of increasing agricultural production is known, why are small-scale farmers not adopting agricultural innovations adequately ? Is it because human elements like the social institutions of a society, their attitudes, value systems and beliefs have not been considered by the change agents ?

Could it also be because certain socio-economic aspects like education, wealth, gender, religious affiliation and the like which directly affect adoption of innovations by individual farmers have been ignored ? How effective are the communication channels used by the extension officers to disseminate the required information to small scale farmers ?

These are, therefore, some of the factors which must be taken into account while analysing some of the problems small-scale farmers face in their attempts to adopt agricultural innovations.

1.3 Objectives of the Study

This research focuses on a variety of objectives which the author considers vital when analysing the extent of farmers' adoption rates of innovations.

A lot of criticism has been directed at the extension workers for their inefficiency in disseminating the required scientific knowledge to rural small - scale farmers (de Vries 1978, Umalele 1975, Chitere 1980). However, various authors who have written on the extension service in the third world, have paid very little attention to the inter- and intra-organizational constraints which impede effective transfer of agricultural scientific knowledge by extension personnel to the rural farmers. The research therefore focuses on the constraints faced by the extension officers which affect their ability to extend agricultural knowledge to small scale-farmers. Indications of such capacity include: density of staffing, competence of staff, extent of decentralization of decision making process, problems of transportation for field staff and the incentives provided to the change agents to enhance commitment in their work.

Secondly, researchers and development planners who have used the traditional "Progressive Farmer

Approach" to reach the farmers, have consistently emphasized the need to disseminate scientific technological innovations without considering the human element in their recommendations. In reality other factors also affect farmers' adoption rates of innovations. The research therefore focuses on these socioeconomic factors that have influenced the response of the farming community to the adoption of agricultural innovations. In this connection variables like education, wealth, gender of the extension agent, personal characteristics of the farmer, his cultural values and beliefs are considered.

Thirdly, the agricultural technological package provided to the farmer is another aspect which is considered. Is it attractive enough to provide an incentive to the farmer to adopt agricultural innovations ?

In an attempt to answer the above question, the following factors were considered: Its compartibility, i.e., the degree to which an innovation is perceived as consistent with existing values, past experiences and needs of the receiver; Its relative advantage - the degree to which an innovation is perceived as better than the idea it supersedes; Its complexity - the degree to which an innovation is perceived as relatively difficult to understand and use; Its tri-

ability - the degree to which an innovation could be tried on a limited basis and its observability - the degree to which the results of innovations are visible or could be felt by others (Rogers and Shoemaker 1971). In considering the above mentioned factors, the author was able to find out the extent to which farmers' rates of adoption were affected by the agricultural technical package provided to them by the extension personnel.

Fourthly, the key link between the farmers and the extension officers is communication. An analysis of the effectiveness of communication channels used in an attempt to effect change among small - scale farmers is therefore necessary. In this connection the individual and group approach, barazas, Farmer's Training Centres, Women's groups, church groups and mass media are analysed.

Lastly, the extent of the incorporation of women into the extension services is researched on. Since women have been considered as the cornerstone of agricultural production in Africa, what is being done to educate them in improved farming methods so as to facilitate increased food production in the rural areas?

1.4 Rationale for the Study

The subject of this study can be of great importance to Agricultural Development Planners and policy makers in Kenya. This is because Kenya is basically an agricultural country. Eighty per cent of its population live and work in the rural areas, the majority of them deriving their means of livelihood from agriculture. Seventy five per cent of agricultural production comes from small - scale farmers (Tidrick, 1983 : 388).

The Ministry of Agriculture, through its Field Extension Services (which is the major means of communication with the farmers) must therefore formulate viable policies which can help improve food production in the small-scale sector. This will in turn help improve the standards of living of those who live in the rural areas. Researching on the problems encountered in one specific community by both extension staff and the farmers, and how they attempt to tackle these problems, is a worthwhile endeavour, since any workable solutions obtained in one community could be equally useful to development planners in tackling agricultural problems encountered in other rural communities in Kenya.

Another reason for researching on the above topic is, very little work has been done on agricultural extension services in Kisumu District and particularly in South Nyakach. Although the Kisumu District Development Plan of 1984/1988 has indicated that one of the main reasons for the low food production in Kisumu District is the inadequate advisory services provided by extension personnel to the farmers on improved farming methods, little research has been done and little written on these factors which affect farmer adoption rates of innovations. The proposed study therefore not only attempts to unearth these factors, it also contributes to any literature that exists on agricultural extension services in South Nyakach which future scholars could draw upon for reference.

A more important reason for researching on this area is, very little seems to have been written on those sociocultural aspects, attitudes, beliefs and value systems, which impede or accelerate adoption of innovations. This could possibly be because, until the 1970's the problems of development were seen as primarily technological and economic (de Vries 1978). The goals set were to raise living standards of poorer countries through greater economic productivity. The economic theorists who dominated development studies

during this period advocated a direct transfer of technology, capital and skills from the more modernized and westernized countries to the underdeveloped third world countries. They dismissed the role of the people's socio-cultural practices as irrelevant to adoption of innovations. Peasants were therefore labelled as "being past oriented traditionalists lacking in such presumably modernizing attributes as empathy, achievement motivation, innovativeness and differed gratification" (Asrcoft, 1976 : 27). Development during this period, therefore, meant progressive erosion of traditional values, institutions and practices and their replacement by those that were presumably more rational, scientific and efficient. It is only when most rural development programmes failed and development was redefined by theorists like Nyerere (1968) and Todaro (1977) who stressed the importance of the human element in any development programme, that development planners realized that a thorough knowledge of the cultural values of the society is a necessity if any development programme is to succeed. It is therefore not surprising that scanty literature exists on this area of study. Researching on whether the attitudes, beliefs and cultural values of the people of South Nyakach accelerate or impede adoption of innovations, will therefore be my contribution to the literature that exists in

this area for future scholars to draw upon for reference.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAME-WORK.

The aims of this chapter are two fold. First it aims to outline the main theoretical perspectives from which adoption studies are conducted. The other purpose is to review the existing body of literature on adoption of agricultural innovations to enable the reader to comprehend the inherent influence of the former on the latter and, more importantly, to enable the author to formulate a few hypotheses for empirical testing and verification by the data to be collected in the area of study.

2.1 Theoretical Framework

The present study assumes that modernity, at both the community and farm levels, is associated with adoption of agricultural innovations. To test the validity of this assumption, it is partinent to review the main theory that directly influences adoption studies.

Of all social science theories, modernization theory tends to dominate adoption studies. Two main philosophies of development can be identified each with its own view of human nature. The first view, which dominated the 1950s and 1960s, had at its core the

ideas of transformation and modernization. It emphasized a complete transformation of society, its economy, and its citizens from traditional status to a modern one. The most important indicators of development within this concept were national economic growth, gross national product, per capita income, and measurable levels of living, were used to define a country's level of development (de Vries, 1978:2)

Moore, a proponent of the modernization theory, defined it as:

> ...total transformation of traditional or pre-modern society into types of technology and associated social organisation that characterises the advanced economically prosperous and stable nations of the Western world ... (Moore, 1963: 91-92).

According to him, modernization has the following characteristics: First, economic development takes place through the modernization of technology, leading to change from traditional techniques to application of scientific knowledge. Secondly, the commercialization of agriculture which is charaterized by the move from subsistence to commercial farming, leading to specialization in cash crop production and the development of wage labour. Thirdly, the industrialization process which depicts the transition from the use of animal power to machine power and, lastly, the urbanization process.

Modernization is also characterized by progressive differentiation, structural integration and functional interdependence of roles, structures and institutions. Traditional societies on the other hand are characterized by a division of labour in which roles are functionally diffuse rather than specific and the level of farm production is generally low because of lack of modern technology.

Within this theory, cultural beliefs and value systems are seen as obstacles to change and development. Change cannot therefore be generated unless these traditional obstacles are overcome and significant changes made in the person's predisposition, attitudes, values and beliefs which influence their behavioural patterns.

The approach specifies a series of personality characteristics which identify people who are inclined towards modernity. In his comparative study of 6,000 people in six developing countries, namely, Argentina, Chile, India, Israel and Nigeria, to discover the existence of a universal constellation of attitudes and values associated with modernity across diverse national boundaries, Inkeles (1973 : 107) pointed out that the following conditions encourage the emergence of modernity traits in an individual:

--- Formal Education

--- Exposure to mass media

--- Orientation towards long term planning

--- Evaluation and acceptance of technical skills.

These traits were mainly related to the development of agricultural societies towards more industrialization and urbanization. Development according to the modernization theory is, therefore, primarily seen as a national or regional phenomenon with some nations being classified as developed while others as underdeveloped. The driving force of development is seen as external to the individual and community and the only way to achieve development according to development planners is through economic growth and the industrialization process.

The proposed study focuses on the role of change agents in effecting planned social change in an agricultural rural area of Kenya. The main method used by these extension officers to disseminate information to these farmers is the progressive farmer approach, which is derived from the diffusion of innovations model, which is an aspect of the modernization theory. Watts (1970 : 400) points out that this approach was adopted in British colonies during the 1950's and has been inherited by Kenya, Uganda, Zambia and, to some extent, Tanzania.

The diffusion of innovations approach aims to evolve a frame-work of co-operation that meets the needs of modern high volume marketing, but which leaves the individual on his own land and in control of his resources. The measures which are geared to the attainment of this goal are: land reform, farm planning, cash-crop development, supervised production, small farm credit, marketing co-orperatives, youth clubs, farmer training, input supply schemes and agricultural extension (Morris, 1981 : 4). The approach sees peasant small-holdings as an agent farming system capable of continuing to support rural populations. It argues that land cultivation with perenial crops, even in very small farms like 2 hectares to 5 hectares, can support a family (Morris 1981).

It sees progressive farmers as a link whose assistance is necessary to accelerate the diffusion of innovations. The innovations could be introduced to a few members of a community with characteristics of early adopters and that from these early adopters, the innovations could diffuse to other members of the community (Rogers and Shoemaker 1971).

Rogers and Shoemaker categorized members of the community depending on their rate of adoption. The members are referred to as innovators, early adopters, early majority and laggards. Innovators and early

adopters tend to have more financial and material resources for adoption of new ideas, are educated, have a higher social status, more mass media exposure, more political knowledge and generally have a favourable attitude towards innovations. The other categories fall in between the two categories. Therefore the farmers who are contacted and assisted by the extension services are early adopters (Progressives) who are often opinion leaders in farming communities.

The relationship between the extension officers and the farmers assumes a one-way flow of information from the top (Government and researchers) to the bottom. The assumption which underlines this relationship is that the extension agent is the expert on farm techniques and therefore he knows what is good for the farmers. The farmers, on the other hand, are seen as basically people who are ignorant, traditionalistic, resistant to change and incapable of rational decision making. They must therefore be assisted for effective development to occur (de Vries, 1978 : 5; Chitere, 1980).

The extension agent whether addressing the farmers in a meeting, demonstrative farms, or in barazas therefore assumes the role of advisor to the farmer. He is assisted in this role by the politicians

and administrative officers, who suppress the farmers' objections by making references to expert findings, the need to work hard, national policies and needs (de Vries, 1978 : 5). As a result most farmers do not object openly. They merely fail to put into practice the suggested innovations. This in turn reinforces the extension agent's view of them as ignorant and resistant to change.

Criticism of the Modernization Theory

Because of the low rate of adoption, not only of agricultural innovation by farmers but also the failure of many development programmes in third world countries to take off, theorists like Raikes and Meynen (1972) and Owen and Shaw (1974) identified the modernization theory as the root cause of the failures. They also identified other factors which contributed to this rejection of a theory which had been utilized to develop attempts to third world countries for nearly three decades.

First of all people, especially scholars and political leaders, realized that modernization meant Westernization, which in effect meant total alienation from one's cultural values, beliefs and norms. Modernization so defined was also incompatible with the political, economic and social systems of third world countries.

Secondly, many people felt that the result of most major development efforts were disappointing. Instead of third world countries developing, they were worse off after the first decade than they had been at the beginning (Owen and Shaw, 1974 : 1). While the diffusion theory had suggested that the benefits of economic growth trickle down from the urban to the rural areas, little evidence of this could be found. Instead the gap between the two worlds in terms of income levels , participation and access to social services seemed to grow (Ascroft and Chege, 1976 : 156).

Finally one would also add that the vast majority of the rural population in Kenya is engaged in subsistence agriculture. From the standpoint of the diffusion model, the subsistence sector is considered 'backward'. The answer to this problem, according to the diffusionists, would be the direct transfer of technology, capital and skills from the western countries to the rural areas.

Often, these technological changes do not take into account the indigenous knowledge of rural farmers about their environment and how they have utilised this knowledge to adapt to the existing conditions. This has in turn led to the rejection of modernization

theory by the rural populace.

Despite the above criticisms, certain concepts of the modernization theory still apply to the proposed area of study. First of all, for increased agricultural productivity to occur in the subsistence sector in the rural areas, the use of modern technology, and scientific knowledge on improved farming practices is a necessity. Studies by Hyden (1983:5) indicate that the peasant mode of production is characterised by a rudimentary division of labour and technology. They therefore produce the basic necessities to meet their social needs without accumulating any surplus for marketing purposes. He states:

> In the African countries the productive forces are still at a very rudimentary level of development. Methods of production and organisation are largely pre-scientific particularly so in peasant agricultural sector (Hyden,1983 : 5).

Traditionally, shifting cultivation was practiced among the Luo in Nyanza Province. Small pieces of land were cultivated for a few years then left fallow for some time. One would move to another plot until the initial plot regained its fertility (Pala 1980). This ensured that the land remained fertile and, as a result, people obtained bounty harvests. The situation drastically changed during the colonial era when land was subdivided and individual

tenure was obtained under the statutory law to facilitate the possibility of individual use of land as collateral. The resulting population pressure and the persistent cultivation of the same crops with the same farming methods, resulted in the wearing out of the soil nutrients, which in turn led to soil erosion. Today, the problem of food shortages is a persistent problem and poverty prevails. Therefore, in order to obtain self-sufficiency in food so as to save foreign exchange and increase rural purchasing power to provide markets for the urban products, increased scientific knowledge on improved farming practices and modernized technology must be provided. It is therefore in this context that the modernization theory is applicable to small-scale farming in South Nyakach, Kisumu District.

Despite its applicability to the proposed area of study in the above mentioned aspect, the modernization theory has several weaknesses (already mentioned) which prevent it from being fully applicable to adoption of innovation studies. The author, therefore, considers it necessary to utilise the second philosophy of development as an addition to the already mentioned theory. The second view, propagated by theorists like Todaro (1977:62), Nyerere (1968:59) and de Vries (1978), advocates a broader and more humanistic concept

of development. Todaro defines development as:

> a multidimensional process involving major changes in social structures, popular attitudes and national institutions as well as the acceleration of economic growth, the reduction of inequality and the eradication of absolute poverty. (Todaro, 1977:78).

To him, therefore, development is not reducible to economic growth alone, not at any rate if the ultimate goal is to obtain social equity and an improvement of living standards among the poorest segments of a population. Development must therefore include three core values. These are life-sustainance, selt-esteem and freedom representing common goals sought by all individuals and societies. While self-sustainance refers to basic human needs like food, shelter, health and protection, self-esteem means a sense of worth and self-respect, of not being used as a tool by others for their own ends. Freedom here refers to the ability to expand the range of economic and social choice to individuals and nations by freeing them from servitude and dependence not only in relation to other people and nation-states but also to the forces of ignorance and human misery (Todaro, 1977:98).

It is therefore not surprising that the Diffusion of Innovation Model with its subset the Progressive Farmer Approach has been rejected by many farmers. This approach denies the farmers the right to partici-

pate actively in those decisions which directly affect them. It does not also give them freedom of choice in applying those agricultural alternatives which they think are suited to their environment. The Progressive Farmer Approach rests on the assumption that knowledge exists somewhere outside the learner in an absolute and fixed manner. The teaching/learning process is seen as a process of giving this knowledge to the learner.

de Vries (1978:14) and Freire (1973:100) challenge this static concept of knowledge and point out that, on the contrary, knowledge evolves out of experience and out of people's interaction with the environment. Only an active interaction with ideas and the environment can result in a learner really understanding a new idea and making it his or her own instead of merely being aware of someone else's needs (de Vries, 1978:15). Farmers' persistent rejection of extension advice therefore merely demonstrates that their lack of formal education does not mean that they do not have a wealth of knowledge and experience of their own environment. They also have a better understanding of their own problems, needs, priorities, resources and culture than the extension agents, who tend to be outsiders and to belong to a different socio-economic status. ccccccc cccc ccccc cccc ccccc cc

Basing his views on the above concept of development, de Vries (1978:16) came up with an alternative model for adoption of innovation studies called "The Dialogical Agricultural Extension Model."

2.1.1 **The Dialogical Agricultural Extension Model**

The dialogial model rests on the idea that the basic aim of education is to develop people not only as a means of development, but as a goal in itself. While increased productivity, the development of new ideas and the development of the agricultural sector are seen as important, they are only important to the extent that they benefit the broad masses of the people. It helps people to gain a better understanding of their situation and how to change it. The basic principle of serving and developing people is therefore predominant in the above model.

Dialogue is emphasized in the model. This dialogue should be based on faith in people, in their ability in co-operation with others to know themselves and their situation and to act on and thus change it.

Dialogue assumes that both the teacher and learner know something about the subject of interest. Although one may have more knowledge or knowledge which is better in the sense that it more critically reflects the situation, this does not make one superior to the

other. It is the knowledge which is superior and not the person as all people are seen as capable of developing within the constraints of their environments (de Vries, 1978:20).

This model emphasizes participation by the farmers on the required innovations, that is, participation which influences what is done and how it is done. Nyerere once stated:

> ... but people cannot be developed. They can only develop themselves. For while it is possible for an outsider to build a man's house, an outsider cannot give the man pride and self-confidence in himself as a human being. These things a man has to create in himself, by his own actions. He develops himself by making his own decisions by increasing his own knowledge and ability and by his own full participation as an equal in the life of the community he lives in (Nyerere, 1968:2).

de Vries emphasizes that decentralization of decision making is necessary for meaningful participation by peasants in extension. This study would also suggest that the dialogical model, should not view people's attitudes, values and beliefs as obstacles to change and development. On the contrary, Roberts (1978) and Cancien (1979) believe that if people are given new opportunities to learn or are provided with profitable incentives, they can adopt new attitudes, values and motives that promote development. Rural small-scale farmers need opportunities that are compat-

ible with their felt needs and experiences. Attention should therefore be paid to the structures and processes that limit their access to opportunities.

In conclusion, therefore, the above model implies flexibility and encourages adaptation to the local situation. A combination of the modernization theory and the dialogical extension model, would go a long way in providing an adequate theoretical framework for analysing the relationship between small-scale farmers and the extension services in South Nyakach, Kisumu District, Kenya.

2.2 **Literature Review.**

In the absence of literature from the area of study, the literature reviewed here discusses issues affecting the extension service system from all over the continent. Specific reference is made to Kenya and in particular to Nyanza and Kisumu District where relevant literature is available. It is hoped that this literature will illuminate the problems experienced by both extension staff and the farmers in the area of study.

After gaining independence in 1963, Kenya inherited a commercially progressive agricultural sector, mostly occupied by the Europeans who owned all the high potential farming areas. Following

independence, the main emphasis was given to the Africanization of large scale farms. With this agricultural policy, it was hoped that it would not only increase foreign exchange reserves, but it would also have incentive effect upon the small scale farmers, who would in turn improve their farming methods (Kimberly 1986).

According to Kimberly (1986), the key to improved small-scale food production in the rural areas is increased delivery of agricultural extension information about innovations such as fertilizers, improved seed varieties and pesticides, modern farm equipments and so on. This is done through the Ministry of Agriculture's department of Extension Services, where the extension personnel act as the main means of communication between the Ministry and the farmers.

It is therefore surprising that instead of an increase in food production on small-scale farms, there is actually a great decrease in food production since the 1970's (Umalele, 1975 : 62). A variety of factors have been cited by various authors for this state of affairs. They are as follows:

- An inefficient organizational structure within the Ministry of Agriculture which prevents effective adoption of innovations by small-scale rural farmers.

- The communication channels utilized by extension officers are defective and do not effectively disseminate agricultural information to small scale farmers.
- Women are not sufficiently incorporated in extension services.

- The farmers' socio-cultural values, beliefs and attitudes are not considered by extension officers while they disseminate information about adoption of innovations.

- Finally, the farmers' personal characteristics like wealth, education and religious affiliation are ignored during the dissemination of information about adoption of innovations.

2.2.1 Organizational issues within the Agricultural Extension Service.

Organizational issues within the Extension Service have played an important role in preventing extension agents from effectively disseminating the required information on improved farming methods to small scale-farms.

Umalele (1975:63) notes that extension agents are few and far between, ill-equiped and consequently are very poor in quality. This scarcity of extension

officers is a prevalent problem in third world countries. For example, the average extension worker/farmer ratio for Tanzania as a whole has been 1:1,500, while in Sukumaland cotton growing areas it is 1:1,020 In Kenya, KTDA has had an extension agent/farmer ratio of 1:120, compared to 1:500 in Kenya as a whole. He recommends that a greater number of extension agents be employed in a limited geographical area so as to increase the agent/farmer ratio.

Leonard (1973), however, argues that the number of extension workers in a particular area is less important than their individual performance. Programmes cannot be effective if the staff is not motivated. Staff incentive is thus a crucial factor in the success of extension programmes.

In Kenya, all the ministries within the civil service (the Ministry of Agriculture included), do not have clear guidelines on staff remuneration (pay and allowance), promotion opportunities, staff evaluation and their work performance. These factors play a vital role in determining whether staff have job satisfaction or not. The Ndegwa commission Report (1971), stated that there is no useful system for evaluating a civil servant's work performance. Although there is a confidential annual report that, according to section 'f' of the code of regulations, is to enable the government to

assess the suitability of an officer for an advancement, it fails to do so since it is a highly subjective document which depends very much on the superior's opinion of his subordinate.

The Waruhiu Report (1980) and the Ramtu Report (1985), reiterated the Ndegwa Commission report by stating that there was no clearly defined career plan based on assessment of an individual's background, training and experience. These investigations revealed that career advancement was often done on personal considerations. Although the annual staff appraisal form GP.247 for officers in Job group 'G' and above which was meant to evaluate an individual's performance existed, it was largely ineffective. Reporting officers often failed to submit appraisal reports periodically as required by the code of regulations. Others carried out vendettas whereby some of the officers feared notifying those officers they had made negative reports on for fear of being punished by the victims' god fathers.

The Ramtu Commission (1985) recommended that a National Manpower Development Committee be established to assess the overall training needs in the Republic and determine the manner in which these needs are met. It was also supposed to ensure that staff in both

public and private sectors have effective training and staff development programmes to broaden and upgrade skills of employees.

Since its formulation, the National Manpower Development Committee has not been reviewed to determine its effectiveness in improving staff evaluation, work performance and their prospects of career advancement. Although the Ndegwa (1971) and Ramtu reports (1985) had recommended that staff remuneration be reviewed every two years to enable civil servants to cope with the high cost of living, this has not been done since 1985. President Moi did announce salary in creases for civil servants with effect from July 1st 1990 ("Kenya Times", April 21st, 1990), but these increases affected only the lower cadres of staff up to job group 'G'. The rest are not affected and their status remain the same. We could therefore assume that civil servants still suffer from "unsatisfactory performance evaluation and career planning, inefficient utilization of personnel and an inadequate system of incentives" (Ramtu 1985). This encourages apathy and fatalism among staff which prevent them from effectively performing their duties. Development planners must therefore formulate viable policies on staff remuneration, staff evaluation and their career prospects in order to improve their work performance in their areas

of operation.

According to Chitere (1980b), professionalism in the Extension Service is another factor which would enable staff to perform their duties effectively. Where the workers are professionally competent, there is less supervision and they are likely to be given more discretion in the discharge of their duties.

This study fully supports Chitere when he states that in Kenya, professionalism may not solve the problem of incompetence among extension staff. This is because formal academic rather than personal qualities are emphasized in selection for agricultural training and as a result those who have been to school for several years are no better than the more junior member of staff. Besides, extension training in Kenya does not equip extension workers with skills for communicating ideas to farmers. This lack of training in communication skills makes it difficult to understand the socio-economic problems of the farmers they are imparting innovations to. As a result, they approach the farmer with a paternalistic attitude which results in widening the gap between them. Formal education also encourages individuals to develop a value system that regards farming as an inferior occupation. Thus, professionalism may not be of much benefit when it

comes to the situation of extension officers in Kenya. Professionalism should therefore be influenced by both training, criteria of selection for training, nature and quality of such training, length of service and so on.

A vital question emerges from the above reviewed literature. It is widely accepted by various authors like Chitere (1980b), Umalele (1975), and Leonard (1973), that incentives must be provided to extension officers to enable them to work more effectively among small-scale farmers. The question is, what form should these incentives take and what recommendations could be made, which could be applicable to extension officers with different qualifications in different environments that could eliminate the envy and resentment which would prevail if this is not done ?

2.2.2 Farmer-Extension Agent Contact (communication channels utilised)

The wide variety of communication channels which have been used by extension officers to disseminate agricultural innovation to farmers has not resulted in increased adoption of innovations. On the contrary, farmers generally have inadequate knowledge, understanding, skill and, sometimes, a negative attitude towards change. This leads them to delay or take no

action at all with regard to the suggested innovations.

In Kenya, agricultural extension officers have used mass media sources (radio, television, films and newspapers) and the training and visit system (which is part of the diffusion of innovations model) to disseminate the required information to farmers. The Training and Visit (T & V) System includes individual farm visits and group activities like women groups, farm demonstrations, farmer training centres and barazas.

Chitere (1980a) states that in individual farm visits, agricultural extension workers contact farmers individually. While the extension staff visit the farmers in order to educate them, the farmers equally visit the extension officers in their offices, homes or in some convenient place like the chiefs' centre and obtain information. The farmers who are contacted and assisted by the extension officers are largely early adopters (progressives) who are usually opinion leaders in farming communities.

Saville (1965) believes that this approach is best suited for third world countries because no Government can afford to employ the number of extension workers needed to reach the whole rural population. To him, therefore, the approach to extension work must be through local leaders who will not only act as pioneers with new methods and help influence their neighbours,

but will also act as liaison officers between the people and extension workers. Saville further notes that the individual approach saves extension resources by confining them to a few farmers. As a result, available landrovers, fuel, money for vehicle repairs and inputs for farm demonstrations are used to improve the state of farming of the few farmers. Support services like farm credit are also extended to them. The progressive farmers often have enough resources to supplement what is already extended to them by the extension service and since those contacted are usually willing to adopt agricultural innovations, the extension officers have a relatively easy time in performing their duties. Communication barriers which usually exist between members of different strata will hardly be an issue, since the progressive farmers are often as educated as the extension officers.

And, finally, where a market for farm products is limited, the number of farmers that participate in the production of the product is limited to enable successful marketing of the goods.

The progressive farmer approach has, however, been widely criticized. Schonher and Mbugua (1974) point out that because early adopters are more educated and wealthier than the rest of the rural populace, it

goes without saying that they are in a higher social strata and as a result social stratification barriers will prevent the free flow of information from the most to the least progressive.

Besides, one wonders whether the progressive farmer approach was formulated with the aim of eliminating the poverty that prevails in the rural areas. It seems as if it was adopted by the Ministry of Agriculture specifically because it enables the extension officers to perform their duties with as little inconvenience to themselves as possible and at the same time, save scarce government resources without considering whether the stated objectives by development planners for the increase of food production among small-scale farmers are realised or not.

One would, therefore, conclude that agricultural extension agents in East African countries, especially Kenya, have relied on a defective method which does not permit a large number of small-scale farmers to be involved in their programmes. This is necessary because of the rapid rate of population growth, which requires increased food production. Since agricultural productivity is constantly falling, the resulting gap leads to famines, food shortages and the use of limited foreign reserves for importation of food.

Chitere (1980a) defines the group approach as systematic contact, education and assistance of a group of farmers to adapt and manage agricultural innovations. The group could be deliberately formed to take advantage of extension services, or existing groups like rural farm co-operatives, or church groups could be used to disseminate extension education to their members. Credit and other forms of assistance could be given to the committees of these groups to pass on to their members.

Chitere believes that the group approach has several advantages. Time and energy is saved since several farmers are reached at the same time. The problem of travelling from one farm unit to another is greatly reduced. Other extension resources like vehicles, fuel and money are saved. Fewer extension officers are used in the dissemination of knowledge to farmers. Rural participation in the group approach also reduces the social stratification barriers to the flow of information from the most to the least progressive farmers. It reduces the hostility and suspicion that exist between two groups of people who share little in common. As a result, the poorer farmers do not feel that every benefit is directed to the progressive farmer. It is also likely that members of the

group apart from consulting extension officers, may consult local community leaders or consult among themselves in regard to their varied farming activities. They could also handle the problem of scarce resources, which can prevent them from obtaining the required agricultural innovations like fertilizers, pesticides, hybrid maize, and so on. They can also handle problems related to transportation of farm produce and marketing of the produce. To Chitere therefore, the group approach is an effective communication channel for dissemination of innovations to farmers.

In discussing the group approach in extension services, Chitere does not, however, mention the concept of gender in connection with attendance in co-operatives. Although women are the predominant agricultural producers in the rural areas, studies from Hyden (1970) and Staudt (1977) have indicated that they rarely participate in farmers' co-operatives. First, because it is believed to be predominantly a male sphere and, secondly, because they do not have resources like title deeds for land ownership, which qualify them for successful farming in the rural areas.

As a result, many of them are excluded from these co-operatives which are dominated by men. In a few cases like in Namibia, they do attend co-operatives to represent their absent husbands (who have gone to

work in urban centres). They, however, often play a passive role and rarely participate in discussions aimed at implementing the co-operatives' activities. Meghji aptly remarks about their situation:-

> one can therefore see that women participate in cooperatives as shadows of their husbands. Women are interested in the affairs of cooperative societies, but are not given a chance to participate in these cooperatives... (Meghji, 1985:29).

It therefore seems as if the group approach which mainly concentrates on male farmers, exclude a significant proportion of farmers, which in this case are women. There are of course women's groups which would be used as a forum for dissemination of agricultural information. The question one would ask is, do extension workers use the women's groups as a channel of communication and, if so, what reception do they receive from the women? Do these groups discuss agricultural matters that are common to them and if they do not would this forum be a more appropriate one for the dissemination of agricultural information? Studies by Staudt (1977:4) indicate that although women do engage in extensive associational activity like church and women groups, it is the <u>barazas</u> which are mainly attended by men that extension officers provide agricultural information to. It therefore was a limitation of Chitere's study, to exclude women farmers from his

analysis of the group approach.

Other channels of communication like the mass media sources also have their disadvantages. Roling and Ascroft (1971:17) note that the problem with mass media sources, especially radios and newspapers, is that they cater largely for the urban elite and pay little attention to the problems of the small-scale farmers. For example, little or no space is reserved in Kenyan papers in giving instructions to farmers - on how to run their farm operations,grow new crops and the like. The Kenya Farmer (a farm newspaper), on the other hand, caters largely for the big landowners. The above authors also indicate that most of the radio broadcasts are done when the farmers are at work, making it impossible for them to listen to the lessons. Besides, most of the farmers cannot afford to buy newspapers on a daily basis. Others do not own radios, while others are illiterate and, therefore, newspapers are of no use to them.

Mbithi (1974) further states that even <u>barazas</u> may not be effective as a channel of communication because of the heterogeneous nature of their audience and due to the fact that a lot of issues, including those related to administration, are covered in meetings.

Mbithi does not however mention that women are often excluded from many of the discussions that occur in barazas. This is because they rarely attend barazas, which are mostly male dominated - a tradition carried over from the pre-colonial era. Thus as a primary communication medium, barazas function more for intra-male communication than across - sex lines. One should not overlook the fact that women might obtain news about discussion in the barazas from their husbands and neighbours.

It is, however, quite possible that they can obtain either distorted information or no information at all about agricultural innovations since, as Staudt (1977:11) notes, "extension officers give preferential access to men in agricultural services. Women have been perceived as traditional, conservative and unwilling or unable to adopt crop innovations that are promoted by the agricultural extension administration. So little effort is made to contact them either in barazas or anywhere else".

Even the Farmer Training Centres (FTCs) which are used by extension officers to educate farmers on agricultural innovations are according to Kimberly (1986) not very effective. In his study of the attendance of Msidunyi Farmers , Kimberly stated that the farmers who attended the FTC were so few that he

could not get conclusive evidence as to whether FTCs affected adoption rates of innovations by farmers. From his sample of farmers, only 8 had attended the FTC. This is quite surprising considering the fact that the FTC has been in the area for the last fifty years.

In examining the FTC time table, Kimberly also noted that agriculture classes for the farmers are a minor component of the FTC's activities. A large number of courses are training seminars held for chiefs and assistant chiefs or training and visit seminars for the technical assistants. There are 10 courses listed at the Ngerenyi Farmers Training Centre. Of these ten, only three concern agriculture or soil conservation. The other seven courses include socio-cultural seminars, courses on book-keeping, co-operative management, a Christian Union, workers meetings, teachers seminars and a marriage encounter group.

Since there are only three agricultural lessons a week and the time spent by the farmer at an FTC is also usually one week, one wonders whether the farmers' training centres in the rural areas are effective channels of communication for agricultural innovations. Besides, when the farmers are invited by the extension officers to attend FTC courses, they are ideally col-

lected from collection points by the FTC bus. This almost always involves a lot of travel on foot for the participants. This therefore is another factor which would act as a deterent for many farmers who wish to attend FTC courses. For the women, attendance at FTCs represents a special difficulty, since they must arrange for their domestic and agricultural responsibilities to be carried out by others while they are absent.

From the above literature a number of factors emerge: First, the model (Progressive Farmer Approach) on which extension officers rely as the main method of contact with rural small-scale farmers is defective since it does not effectively take into account the various facets of those problems which pervade farmer-extension agent contact. A different model should therefore be formulated to fulfil this purpose.

Second, authors like Mbithi (1974) and Chitere (1980a) totally exclude the role of women as small-scale rural farmers while analysing those channels of communications which are used by extension officers to disseminate technological information.

And, finally, a lot of doubt is placed on the effectiveness of FTCs as a channel of communication to rural farmers by authors like Kimberly (1986).

2.2.3 Insufficient Incorporation of Women in Extension Services

Associated with the failure of many programmes to reach the majority of small-scale farmers, is the tendency for agricultural extension services to focus their attention on male farmers.

Kimberly (1986), Mbogoh (1986) and Pala (1980) note that among the Luo, and in the Kenyan society as a whole, women have traditionally been the producers of food for their households. Western agricultural experts tend to view African farming with a western bias, seeing only the male farmer as important to increased production of food as well as commercial crops. As a result, they have increasingly ignored the participation of women in agricultural production. It is only recently that it has been recognised that if women are not intergrated in the improvements intended for increased agricultural production, any planned innovations may not take off the ground.

Fortman (1978) further states that adoption of innovations in agriculture requires an investment of additional amount of time. Women, apart from being the main agricultural participants, perform other duties like marketing, fuel and water portage, cooking plus child care. This has serious implications for the task of convincing the female farmers to utilise agricultur-

al innovations. Women being so busy, do not have extra labour to spare when agricultural innovations are implemented. For example, ferlilizer not only increases the growth of crops, but it promotes the growth of weeds as well. Consequently, additional weeding (which must be done) is created. Many female farmers cannot meet this demand.

Moreover, Pala (1980), in her study of Luo land tenure systems, notes that female work burdens have been increased in recent years with the advent of male outmigration. Women are now not only responsible for their traditional tasks, but they have to take over the extra responsibilities which were traditionally handled by men like animal husbandry, clearing bushes and the felling of trees in readiness for planting, and so forth. In the case of Lesotho, approximately one half of all men are absent at any one given time (Safilios Rothschild, 1980:302). The irony of the whole situation is that it is the men, who do not actively engage in agricultural production who are given agricultural training at the expense of the women who are the main agricultural participants.

Kimberly (1986) points out that, despite their prominent role in small-holder agriculture, women have yet to be more than marginally integrated into agricul-

tural programmes. In Kenya, women are seldom included among those targeted by agricultural extension agents for either farm visits or demonstrations. There are two reasons for this lack of attention to women farmers.

Kenyan policy dictates that farms should be modernized through increased male involvement in farming (Staudt, 1977:3). This is a reflection of the prevalent attitude that even if the greater part of farm labour is provided by women of a household, the male household head does make most of the decisions regarding farm practices. This belief persists and yet we know that it is women who make major decisions when immediate action is required in the absence of their men folk. Development planners therefore believe that extension agents and the Farmers Training Centres should continue to target the males of the household.

Secondly, many African societies believe that it is culturally inappropriate for men and women to communicate freely. Therefore, most extension workers who are men, are unable to adequately communicate agricultural information to women in the community.

The Farmers Training Centres which are used as channels of communication for the farmers are desegrated by gender. Women, although officially targeted by extension services, are often not included at

the same rate as the men are. Staudt (1977) states that it is extremely difficult for women managing farms alone to attend FTCs for about a week or more because they must make arrangements for their day to day household and farm responsibilities while they are away. Her statistics indicate that of the eighty four female managed farms in the sample, only 4 women had been to the Farmers Training Centres.

Kimberly (1986) further reveals that, it is believed that FTCs are immoral places where beer is served and people sleep in dormitories. This belief of immoral practices persist despite the fact that the dormitories are segregated. Male farmers, on the other hand, have much more leisure time and therefore are more likely to attend the classes. For example, Kimberly's research reveals that a time allocation survey conducted for a sub-sample of the Msindunyi sample, showed that in joint households, men had over three times as much leisure time as did their wives. For the three general public agriculture classes, total dependance averaged 34, 30 men and 4 women.

He also notes that those who do not attend FTSs, notably women, obtain some of the agricultural innovations from their communal plot often owned by a church group or women's group. Sometimes they obtain the

required information from progressive farmers. The question one would ask is, to what extent do women attend the above mentioned groups?

Mwaniki (1986), in his study of women's groups in Mbeere, revealed that several factors like famines, droughts, too many home and farm responsibilities, prevent women from frequently attending women's groups. Kerie is an example of a women's group which nearly disintegrates during famines. Besides, depending on the denomination, certain church groups may reject new innovations. It was also mentioned earlier that progressive contact farmers represent class stratification in rural areas. As a result, there is often a communication breakdown between the less able and the richer farmers. One, therefore, wonders how successful they are in disseminating the required information to the women's groups who own communal plots.

It is also widely believed that women farmers adopt innovations less frequently than male farmers. On the contrary, Kimberly (1986), in his study of the Msindunyi farmers in Taita Hills, states that female farmers are more likely to innovate than male farmers in terms of sheer numbers at least on one of the innovations. In his sample, he found that 73% of the females use one or more of the innovations on their farm plots compared to only 60% of male farmers.

However, in terms of multiple use of different innovations, the differential in the rates of male and female use decreases with identical rates for both men and women. He concluded that there is no clear pattern of dominance by gender in the use of innovations like ferlilizers, pesticides, hybrid maize, vegetable seed, and so forth. Despite this demonstrated responsiveness to innovations, however, the women farmers tend to be ignored relative to their male counterparts.

2.2.4 **Culture and Adoption of Innovations**

According to Beattie (1964:65), "No human social institution or relationships can be adequately understood unless account is taken of the expectations, beliefs and values which they involve". Therefore, the analysis of the socio-cultural values and beliefs of a society is of paramount importance, when one is dealing with those factors which may hinder or accelerate the process of change.

Two opposing views exist from various theorists about the peasants, their culture and their attitude towards change. The first view which is held by Foster (1962), Rosen (1920) and Hyden (1983), describes the peasant as being past oriented traditionalists, lacking in such presumably modernizing attributes as empathy,

achievement motivation, innovativeness and deferred gratification. They also suffer from constraining afflictions like fatalism, conservatism, cultural ethnocentrism, ignorance and irrationality reinforced and perpertuated by persistent conservative value systems which do not encourage or rationalize planning for and striving towards more substantial future rewards (Ascroft et al. 1976).

To Foster, peasants are conservative in their attitude towards economic development because:

> Peasants perceive their social world in terms of a competitive game in which one's gains are always at the expense of somebody else and because of this, they will tend to withdraw and not wish to avail themselves of new opportunities for fear that this will lead to increasing socio-economic inequalities and to internal conflict (Foster 1962:53).

The villagers security and safety within the village is best achieved by maintaining the status quo and permitting no major changes in their traditional lifestyle. Behaviour that is likely to upset the traditional allocations is viewed as threatening to the community at large. Those who acquire more goods than the rest are considered a threat. Therefore, for fear of rejection by the rest of the community members, those who are wealthier do not show evidence of their material well being.

Foster (1962:47) also believes that peasants have been able to show initiative only in the most limited areas. Not only does the villager have little or no control over the basic decisions made from the outsider, but usually he does not even know how or why they are made. The orders, the levies, the restrictions, the taxes that are imposed from the outside have for him the same quality of chance and capriciousness as do the visitations of the supernatural world. As a result, he has a fatalistic attitude towards life and is helpless in the face of outside factors which control his life.

The views of the above mentioned authors should not be accepted without criticism since their writings on rural communities, which in this case often entailed anthropological studies of the "natives" in third world countries, often smacked of racial overtones. One cannot overlook Foster's theory of the "limited good (1962) or Redfields (1956) description of the peasants as having the characteristics of "impertubable sameness". The mentioned authors, therefore, present peasants as simplistic ignorant country pumpkins, who hate and fear the outside world and are afraid to take any risk or initiatives in terms of prediction for fear they will lose everything. To these authors,

therefore, it is the attitudes, beliefs and values of the peasants that prevent them from adopting new innovations.

It is no wonder then, that this study supports an opposing view of the peasants, propagated by theorists like Roberts (1978), Hobens (1982), Parkin (1972), Morris (1981), Cancien (1979), Schlosser (1984) and Mbogoh (1986). They state that far from being static, most low income rural communities are dynamic and have undergone major changes particularly in the present century. Now the peasant is potrayed as an economic maximizer constrained only by his access to factors of production, market and by risk.

Roberts (1978:34) believes that if people are given new opportunities to learn or are provided with profitable incentives, they can adopt new attitudes, values and motives, that can promote development. Rural small-scale farmers need economic opportunities that are compatible with their felt needs and experiences. Attention should therefore be paid to the structure and processes that limit their access to opportunities. Mbogoh (1986) expressed similar sentiments when he analysed the production systems and labour of the Luo in South Nyanza District.

Bascom and Herskovits (1959) point out that all cultures take over innovations selectively. Some things

are accepted while others not considered desirable are rejected because they are incompatible with pre-existing customs or are unsuitable to the natural environment.

Margaret Mead, in her study of the people of the Pacific Islands, echoed similar sentiments when she remarked:

> There were no inhabitants of the Small Pacific Islands who did not want some of the things from civilization once they had seen them... they would want - for example, some medicine, some means of lighting and a few other things (Mead, 1974:25).

Schlosser (1984), in his study of the Luo, stated that modern agricultural activities can be successfully transmitted in Luo societies if their communal kinship ties are utilised. This is because kinsmen from the same homestead perform agricultural activities collectively. Therefore social structures and organizations would not impede the process of change if these group organizations are utilized. The crux of the matter here, therefore, is that people must be <u>given what they need</u>. In such a case, cultural beliefs, values and attitudes will be re-identified to suit their changing needs. Thus adoption of innovations among rural farmers can only be effected if the environmental, technological, sociological, ideological and cultural factors are considered. In short,

behaviour is only understandable in terms of the total ecological context in which it occurs.

2.2.5 **Education and Adoption of Innovations**

Personal characteristics of the farmer like education can also affect ones rate of adoption of innovation. Rogers (1969), in his study of Columbian peasants, found that the literacy level of a peasant is positively associated with his rate of adoption of agricultural innovations. He claims that literacy unlocks the minds of farmers and re-orients them to the civilized world leading to the acceptance of changes in farming techniques and practices.

Research by Marsh and Coleman (1966) indicates that low levels of education tend to foster unfavourable attitudes towards the adoption of improved farm practices. These researchers found out that eight years of schooling was associated with higher adoption rates than were fewer years of schooling. Therefore, the level of education of the farmer is quite important when it comes to adoption rates of innovation.

The two authors do not, however, mention that although one's level of education accelerates one's adoption of innovations, in most African countries rural farmers are likely to be either illiterate or barely literate without being highly educated. This is

because of the existing elitist education system which encourages the highly educated people to opt for white collar jobs in urban centres at the expense of more practically oriented jobs. Kimberly (1986), in his study of Msindunyi farmers in Taita Hills, proved this point by stating that the level of education attained seemed not to be a predominant factor in the adoption of innovations in Kenya because many of the educated lot had emigrated to urban centres to seek better job opportunities.

In conclusion, therefore, to improve the food production in the rural areas, factors like the organizational structure of the extension services in the Ministry of Agriculture, the effective utilization of communication channels by extension officers to disseminate information to farmers, the full incorporation of women in extension services, the economic status of the farmer and education must be taken into account. One must not also leave out factors like age, religious attitudes and cosmopolitan characteristics of the farmers when dealing with their adoption of innovations. The above literature reveals that there are certain aspects of the relationship between the extension service and the farmers, which require special attention. These are as follows:

First, the progressive farmer approach, which has been used by the extension service in the farmer-agent contact to disseminate technological information, is defective since the problems of the majority of small-scale farmers are not considered. There is therefore the need for an alternative model which would prioritize the needs of rural farmers.

Secondly, women who are the cornerstone of agricultural activity in the rural areas are not effectively incorporated in extension services. What can be done to ensure that women are also provided with adequate technological information since this would directly result in the increase of food production in the rural areas?

And, finally, although various authors have indicated that socio-economic factors like education, wealth, religious affiliation and so on accelerate one's adoption of innovations, will the same apply to South Nyakach Location ?

2.3 **Hypotheses**

Following the research problem posed and the subsequent review of theory and literature, the following five hypotheses were formulated for this study.

Women are the main participants in subsistence agriculture in the rural areas. It is therefore possi-

ble that inadequate involvement of women in extension services has influenced women's slow rate of adoption of agricultural innovations.

The agricultural technological package farmers are required to adopt does not take into account the farmer's socio-cultural practices, values, beliefs and attitudes.

Communication channels used by change agents to disseminate agricultural information to farmers slow the rate of adoption of innovations.

The organizational issues of the extension service in the Ministry of Agriculture has slowed the rate of adoption of innovations by farmers.

Personal characteristics such as wealth and educational achievement have an influence on a farmer's adoption rate of innovations.

CHAPTER 3

RESEARCH METHODOLOGY

The purposes of this chapter are to discuss the sampling techniques for the farmers, operationalise the measures of key variables and outline the units of observation, to discuss data collection techniques, to discuss the problems encountered during the research and, finally, to discuss proposed methods of data analysis.

3.1 Sampling Techniques

Sampling Techniques for the Farmers

To obtain the required samples needed during data collection, 2% of the population of the total households in each sub-location was taken to represent the entire population in the sub-locations. Thus in East Koguta which, according to the 1979 census, has a population of 7,563 people and a total of 1,306 households, 26 respondents were chosen for interviewing. Kajimbo which has a population of 5,962 people and 1,097 households, 22 respondents were chosen. In Kadianga West with a population of 6,842 people and 1,544 households, 31 people were chosen and in Kadianga East with a population of 10,409 and 1,830 households 37 people were chosen. The total respondents amounted

to 116 people.

The table below indicates the details of the sample size of the different sub locations.

TABLE 1.

Sample Size of Sublocations

	Total Population	House-holds	Sample Size
East Koguta	7,568	1,306	26
Kajimbo	5,962	1,097	22
West Kadiang'a	6,842	1,544	31
East Kadiang'a	10,409	1,830	37
Total	30,781	5,777	116

The above table is, however, the ideal of what should have been. In reality, the author ended up interviewing 92 respondents because of a variety of factors, like a few farmers refusing interviews because they were too busy or because they believed the investigator was a government agent sent to pry on their affairs. The main obstacle, however, was that the author often found homesteads deserted because people were harvesting or preparing the land for replanting crops in January and February. So, the author had to travel through several empty homesteads before locating a respondent.

To obtain representative samples, the sub-locations were divided into units. Each unit had several villages. Depending on the number of respondents required from each sub-location, the author interviewed at least one or two respondents from every village, thus making sure that a fairly representative sample of the population in the whole location was obtained. (unit divisions on next page).

SUB-LOCATION	KADIANG'A EAST			KOGUTA EAST				KAJIMBO			KADIANG'A WEST		
UNIT	VILLAGE	RESP. INTV.	TOTAL SAMPLE	UNIT	VILLAGE	RESP. INTV.	TOTAL SAMPLE	VILLAGE	RESP. INTV.	TOTAL SAMPLE	VILLAGE	RESP. INTV.	TOTAL SAMPLE
1. KEYO	BODI	2	30	1. ANG'OGO REMO	ANG'OGO REMO	1	20	NYAKACH MIXED	2	15	BODI WEST	3	27
	KEYO	2			PUNDO	1							
	SIANY	2			SIGOTI	1							
2. KABETE	KABETE	2		2. SOYI	SOYI	1		2. OBOCH	1		2. BAR KAWARINDA	3	
	KORU	2			ONG'IELORE	1							
	RADIENYA	2			GUUA	1		3. NYALGWANYA	1				
3. OBUYA	OBUYA	2		3. HOLO	HOLO	1		4. RAMULA	2		3. BUNGUMERI	3	
	OCHOL	1			TOI	1							
	ACHOGO	2			NJORA	1		5. MIRIU	1				
	DIRUBI	1											
4. NYABONDO	NYALENDA	2		4. NGEGE	SAKA	1		6. OBUORA	2		4. ACHINGURE	3	
	NYABONDO	1			KIBUON	1							
	KOLUM	2			LWANDA	1		7. CHACHA	1		5. NYAMARIMBA	3	
	NYAGWENO	1											
5. SONDU	NGEGE	2		5. NYAMAR-OKA	NYAMAROKA	1		8. KAJIMBO	2		6. BURKAMACH	3	
	SONDU-UNION	2			GUU-B	1		9. APOKO	2				
	AGAI	1											
	OLWA	1			RARIEDA	1							
				6. NDORI	TOMBO	1		10. OTHITH	1		7. NG'OPE	3	
					NDORI-A	1					8. ANDING'O BWARE	3	
					NDORI-B	1							
				7. NAKIGOT	SOKO	1					9. OROBI	3	
					ONERA	1							

Source: field data obtained from farmer questionnaire.

Initially, the author approached the assistant - chiefs from each sub-location and obtained a list of names of the farmers to be interviewed. This method was quickly abandoned because the chiefs often gave the names of the richer and more knowledgeable farmers at the expense of the poorer and often more ignorant farmers. The author, therefore, decided to randomly choose respondents from each village to give each farmer a fairly equal chance of being selected for interview. At this stage, systematic random sampling was employed whereby if the author wanted to interview two respondents from each village, every n^{th} household was chosen after interviewing the 1st household. This was done by taking the total number of people in that village and dividing it by two, in order to ensure a fairly accurate representation of the particular village.

The author obtained a list of the names of the contact farmers from the extension officers responsible for each sub-location in order to interview them.

3.2 Operational Definitions and Measurement of Variables

It is important to define the variables which were utilised in this study because terms can have varied meanings from one discipline to another.

Defining the operational terms will therefore clear any confusion that may arise as a result of their definitions. Besides, the manner in which variables of a study are operationalised and measured determine to some extent the validity of the study.

Independent Variables

Communication Channels

Communication in this study refers to the process through which innovations or messages are transferred from the source (extension agents) to the receivers (the farmers). Communication can only take place when the transmitter and the receiver are linked by a channel. Therefore, the indicators of communication channels in this study are mass media sources, group activities (women groups, church groups, farm demonstrations, farmer training centres and barazas) and individual farm visits.

Technological Package

This refers to the agricultural innovation provided to the farmers by the extension agents for adoption. It includes improved farming methods, high yielding crop varieties, growing cashcrops and the use of various types of farm equipments. This variable was measured by asking members of the sample whether the technological package

had the required perceived attributes of an innovation.

Personal Characteristics

This refers to the personal qualities of the farmer which encourage modernity traits in him. Indicators of the variable in this study are wealth and education.

Organizational Issues

Organizational issues within the Extension Service refers to factors like staff work-loads, transport facilities, terms of service, staff elitism and staff supervision which directly affect staff performance in their areas of operation. This variable was measured by asking extension agents how the above issues affected their work performance.

Dependent Variables

Rate of Adoption

Rate of adoption refers to the extent to which a farm household has adopted the recommended agricultural innovation (Ogum; 1982:78). The respondents were given a list of different farm innovations they have used. These innovations included high yielding crop varieties like katumani maize seed, western yellow and hybrid maize. They were asked if they had done improved farming practices like soil levelling, seed dressing, early planting, use of farm manure and artificial

fertilizer, planting in rows and crop rotation. The range of farm mechanics included the use of tractors, waterpump engines, oxploughs, jembes, spades, axe and hoes. Respondents were asked if they had grown crop varieties like tomatoes, onions, vegetables, coffee, tea, sunflower, and so on.

A scoring system was devised whereby one (1) score was assigned to the use of high yielding crop varieties, two (2) was assigned to farm mechanics, three (3) was assigned to use of improved farming practices, four (4) was assigned to growing crop varieties like tomatoes, onions and vegetables and five (5) was assigned to cashcrop production.

Three different categories of adoption rates of improved farming practices were stated. They were:

Rate of Adoption	Range of Scores
Low	0 - 5
Average	6 - 10
High	11 - 15

To determine the different categories, the low adopters were considered as those who had adopted high yielding seed varieties and certain types of farm mechanics like the oxplough, panga, axe and hoe. Average adopters were those who had adopted three of the different varieties

of farm innovations and high adopters were those who had adopted from four and above of the mentioned varieties.

3.3 Units of Observation

The community, the farm household and the extension service are the basic units of observation in the analysis of the role of extension officers in effecting change among farmers in South Nyakach.

The Community

It is important to analyse the community as a unit of observation because the attitudes, values, beliefs and norms of members of the community play a vital role on whether they can easily accept changes which occur as a result of the modernization process. Foster (1962) stated that factors like conservatism, fatalism, cultural ethnocentricism, modesty, and so on, act as a barrier to development and change among peasant farmers in rural communities. Therefore one cannot overlook the community when analysing the factors which affect farmer adoption rates of innovations.

The Farm Household

The household here refers to a group of people usually living together, eating from a common kitchen

and contributing to and drawing from a common source (Chambers 1967). The farm household is a suitable unit of analysis because it is the main area of agricultural activity. Both men and women of the household were the main respondents, since they were the ones who directly interacted with the extension officers and the decision whether to adopt new innovations or not chiefly lies with them.

The Extension Service

The extension service here refers to the department within the Ministry of Agriculture which is concerned with the promotion of new crops and varieties, improved husbandry, the control of pests and diseases, among other things. The department's influence is felt through its field extension services which provide the major means of communication with the farmer. The extension service is a suitable unit of analysis because central issues like the organisational structure of the department, the influence of government policy and action with respect to the allocation of funds, transport facilities, permits, staff training and recruitment and communication channels utilised by extension officers directly influence farmer adoption rates of innovations.

3.4 Research Methods and Data Collection

As pointed out in earlier chapters, the present study seeks to examine those factors which have impeded the rate of adoption of agricultural innovations by rural small-scale farmers. To obtain the required data, the following methods of data collection have been used.

3.4.1 Library Research

Library research has been a major source of data, particularly, at the formulatory stage, where literature concerning the extension service and its interaction with rural farmers has been reviewed. The literature review also enabled the author to extract a few research hypotheses as clues to the issues being investigated. Library research also provided a lot of background information to the study itself.

3.4.2 Participant Observation

Another research method which was utilised is participant observation. Because this technique requires the researcher to spend quite a bit of time to immerse himself/herself into the activities and culture of the particular society he/she is researching on (from four months onwards) to obtain accurate information, the author who performed the research in a

period of three months decided to use focused ethnographic research (which takes a relatively short period - six weeks to two months) to obtain the required data.

Through focus group discussions, the author interviewed between 6-10 people at one sitting. The respondents chosen had similar backgrounds and shared similar interests. They were in the same age group, were of the same sex and had similar educational backgrounds. Emphasis was placed on similarity of interests in order to ensure that the composition of the group did not inhibit the free flow of information among its members. For example, having both a mother- and daughter- in-law in the same discussion would automatically curtail the spontaneity of the on going discussion. So, a careful selection of the respondents was a necessity if the group discussions were to succeed.

To obtain the required respondents, the author attended women group meetings, church groups and barazas. She then requested for an interview with the selected group on their next meeting. This request was usually granted and about one and a half hours was then spent in conducting the focus group discussion.

The topics discussed revolved around cultural definitions and concepts concerning agricultural practices, the seasons of planting, weeding and harvesting,

cultural norms and taboos about weeding, planting and harvesting and so on.

3.4.3 **The Survey Method**

The survey method was the key research method which was used to extract data from the respondents. Both structured and non-structured interviews were conducted. In the structured interviews, the questionnaire was prepared before hand, and the respondents were asked the questions as worded and in the order in which they were written to allow for a comparison of answers from all respondents and facilitate the computation of summary statistics. Often after asking the structured questionnaire, the author engaged in a conversation with the respondents about the subject matter using unstructured questionnaires to elicit information. Therefore establishing proper rapport was of paramount importance, as a relaxed and confident respondent in a friendly atmosphere often provided spontaneous answers which revealed his attitude about the subject at hand.

To improve the quality of the interview technique, the author was assisted by two research assistants, who were subjected to one week's intensive training in interviewing techniques prior to the commencement of the inquiry. The research assistants were then

allocated a study area from which they collected data.

Apart from actively engaging in data collection in the study area, the author oscillated between the different study areas assisting and supervising the research assistants in collecting data. Every evening after data collection, the author and the research assistants would meet to discuss the problems encountered in the field and how to handle them. The author also checked on each questionnaire to correct any mistakes made by the research assistants. The author stressed the need to establish good rapport by the assistant investigator with the respondent in order to create a relaxed atmosphere, the importance of being observant and noting whether the respondent was tense, unco-operative, untruthful and the need for probing where necessary and noting accurate information on the subject matter.

3.4.4 **Key Informant Technique**

Key informant technique was also utilised to obtain data. Village elders, who commanded social respect and prestige in their sub-locations were interviewed with the aim of obtaining information about traditional agricultural practices and the cultural norms and beliefs surrounding agriculture. Contact farmers were also utilised to obtain information about

modern farming practices.

3.5 **Interview of Extension Staff**

The total number of extension staff in South Nyakach location are seven Technical Assistant Extension Officers, one locational Extension Officer and the Divisional Agricultural Officer. Although the author intended to interview all of them, only five Technical Assistants, the Locational Extension Officer and the Divisional Agricultural Officer were interviewed. This was because the author was unable to locate one Technical Assistant, whom it was stated had disappeared from both his home and place of work since November 1989. The second Technical Assistant had newly arrived in his area of work from another station. He therefore did not know what exactly happened in the area since he had not yet visited any farmer.

To trace the extension staff, the author obtained a list of their names, the sublocations for which they were responsible and their places of residence from the divisional office at Oboch in South Nyakach.

3.6 **Field Problems**

This study had a number of limitations during the period of data collection. First, the survey meth-

od, which was the main method of data collection had a number of problems. Benney and Hughes once stated of this method,

> Direct questioning often results in respondents giving incorrect information especially when it is of a sensitive nature (Benney and Hughes, 1970:192).

The above statement was of particular relevance in this study, especially when the author was unable to obtain accurate information when questions on sensitive issues were asked. Thus, questions on the number of children a respondent had (questions of this nature are taboo among the Luo since it brings ill-omen to the family who count their children), or the extent of one's wealth in terms of land hectareage, number of cattle, or household items were either ignored, met with a hostile silence, or vague answers were provided to the interviewer about them.

The author tried to overcome these difficulties by using acceptable Luo expressions (especially about the number of children one had) and immediately following the above question with harmless questions often not related to those questions the respondents considered sensitive. If a respondent stated that he/she did not know the amount of hectares he/she owned, the interviewer asked him/her to show her the piece of land. The hectareage was then estimated and noted

down.

Another problem encountered was, while interviewing the respondent, other people who came to the home would try to contribute to the on-going interview thus distorting the respondent's answers. Some people would literally take over and provide all the information required and in the process, would intimidate the respondent who would withdraw from the conversation. The author attempted to solve the above problem by interviewing both separately. The research assistants were of great help on such occasions since they interviewed one of the respondents when the need arose. This problem, however, played havoc with the estimated samples from each village because the author would end up interviewing more people than required from one village, or interview more than one person from the same home. Occasionally, the author avoided creating ill-feelings by asking the opinion of both respondents to the same question, but only recording the answers of the relevant respondent.

Besides, even where there was no intention to do so, the interview created an unnatural situation and some of the respondents yielded inaccurate data. A few feared reprisals from the government especially when asked about their attendance at barazas and their attitude towards government extension agents, lest they

implicate themselves in their answers. One of the respondents who did not want his name recorded stated:

> Even though you are telling me that you are a student, how do I know that you are not sent here to spy on me by the Government? I cannot read and write so that paper you show me is useless (the research permit). I was given a loan to grow coffee, I did not use it properly. Are you going to report me? Once you have written my name, it will be in the Government file...

The author tried to assure the respondent of her sincerity, by omitting his name from the questionnaire.

The extension officers were also quite hostile. They too feared that the author may have been a government agent sent to spy on them ! The author was unable to eliminate this belief considering the fact that four of them were found napping in their houses on a Tuesday afternoon at three o'clock by the author, when they were supposed to be on duty !

Not all the respondents were hostile, however, the majority were quite eager to be interviewed. On more than one occasion, the author was acutely embarrassed when despite lengthy explanations about being a student, she was forcibly taken to the gardens by eager respondents to explain why their crops were not doing as well as they should and what they could do about them. They pointed out that they rarely saw agricultural extension agents and, therefore, if the

author was questioning them on agricultural matters she must know it practically! One need not state the embarrassment which ensued since the author is practically a layman in the fundamental intricacies of agriculture !

Another problem encountered by the author was the long distances covered on foot between the different sub-locations. Some parts of South Nyakach are extremely hilly. Vehicles are few and far between. Bicycles are more of a liability than an asset because of the deep valleys and hilly areas. Needless to say, this was a daunting aspect of the study and one needed iron will to cover every village in the location.

3.7 **Data Analysis**

Various statistical analyses are performed. They include Chi-squares, Frequency distributions and percentages. The various types of analysis dwelt with those factors which influence farmers' adoption of innovations like education, literacy, wealth, communication channels used in dissemination of information to the farmers, organisational issues in the extension service and inadequate involvement of women in the extension service.

Conclusion

The research methodology has been presented whereby various methods of data collection have been stated, the various units of analysis and the variables have been defined. The tools of analysis of data have also been stated.

CHAPTER 4

THE AGRICULTURAL EXTENSION SYSTEM.

The purpose of this chapter is to examine the structure of the Agricultural Extension Service in South Nyakach and the way it links with the district, provincial and national levels. Research findings dealing with the organizational issues within the Extension Service which deter extension agents from effectively performing their duties are examined. These issues include staff supervision, terms of service (pay and allowance), career prospects and security, staff elitism and staff work-loads. The above elements are highlighted because the investigator believes that a disgruntled employee in any institution cannot be an efficient and dedicated worker. For the extension staff, lack of support services would directly affect their dissemination of innovations to the farmers and this would in turn affect farmers adoption rates of innovations in rural small-scale farms.

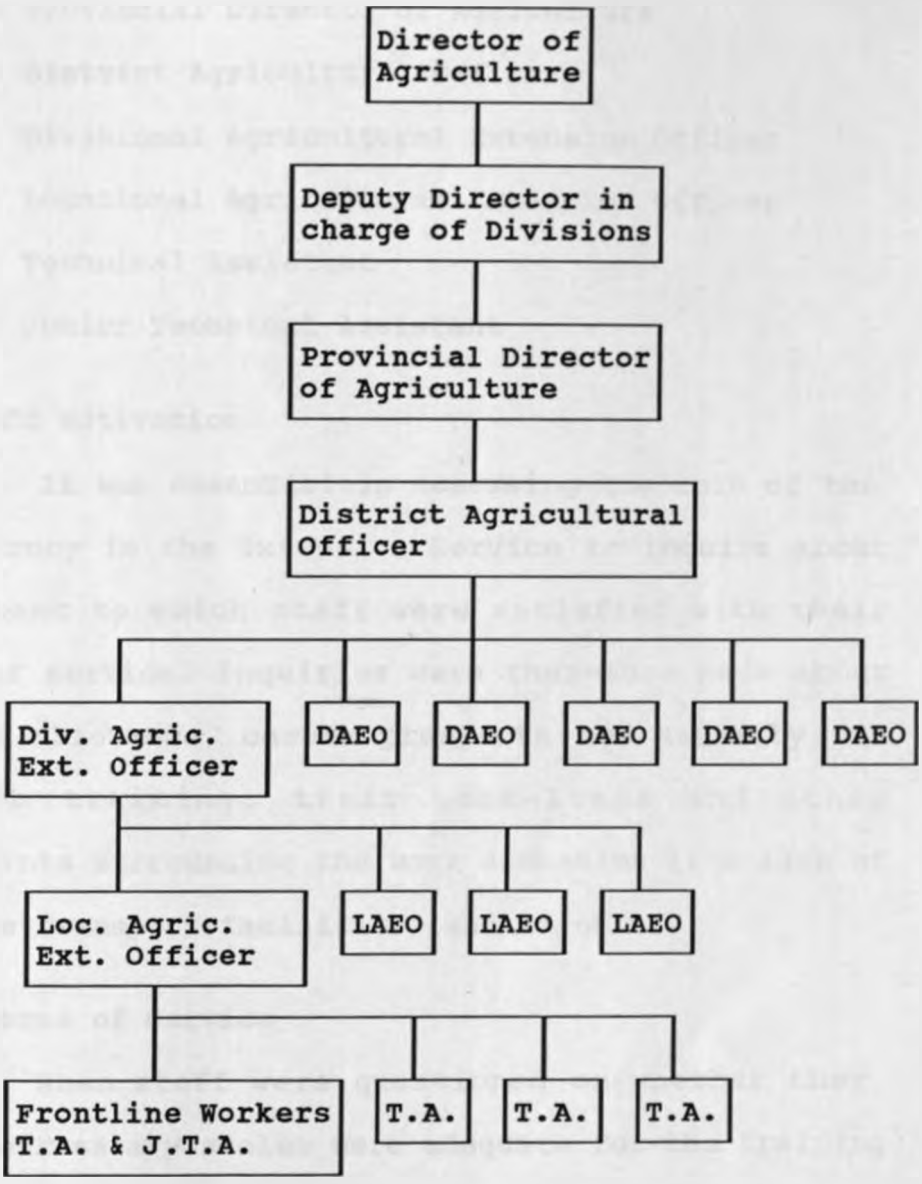
4.1 The Structure and Organization of the Agricultural Extension Service

The Extension Service has a unified service and a single line of command from within the Ministry of Agriculture up to the grassroot level. At the

headquarters is the Director of Agriculture followed by the Provincial Director of Agriculture. At the district level, the District Agricultural Officer is in charge of all administrative matters. There are a total of nine extension agents (all men) in the study area. There is one Divisional Agricultural Extension Officer who assists the District Agricultural Officer and is in charge of the division. He handles administrative matters and supervices the Locational Agricultural Extension Officer and the Technical Assistants. There is one Locational Agricultural Extension Officer in charge of agricultural matters in the location. There are six Technical Assistants and one Junior Technical Assistant, who assist the rural small-scale farmers on their farms and are the frontline workers of the extension system. There is a subject matter specialist at the district level who provides professional advice about improved farming practices on a regular basis to staff.

Table 2 shows the organizational structure of the Extension Service from the apex to the grassroot level in the study area.

TABLE 2.



Source: Personal Investigation, 1990.

Note : The J.T.A. are being phased out. There was only one J.T.A. in the study area.

KEY:

DA ---- Director of Agriculture

DDA --- Deputy Director of Agriculture

PDA --- Provincial Director of Agriculture

DAO --- District Agricultural Officer

DAEO -- Divisional Agricultural Extension Officer

LAEO -- Locational Agricultural Extension Officer

T.A. -- Technical Assistant

J.T.A.- Junior Technical Assistant

4.2 **Staff Motivation**

It was essential in assessing the role of the bureaucracy in the Extension Service to inquire about the extent to which staff were satisfied with their terms of service. Inquiries were therefore made about pay and allowance, career prospects and security, on the job training, their work-loads and other constraints surrounding the work situation like lack of adequate transport facilities, and so on.

4.2.1 **Terms of Service**

When staff were questioned on whether they felt their salary scales were adequate for the training and amount of work they did, practically all of them replied in the negative. They stated that their pay was too low compared to their work-loads. This included long distance travelling to the respective farms on bicycles on hilly terrains (bicyles are more of a liability than an asset in hilly areas), writing

comprehensive monthly reports to their superiors, advising farmers of new innovations in various group activities, organizing farm demonstrations and attendance of farmers to farmer trainig centres, teaching population education, soil and water conservation and Home Economics (T.A., 1990)

The extension agents also pointed out that the staff pay is not commensurate with the dominant role, which according to official statements, agriculture should play in Kenya's economic development. Others mentioned that the inflation rate was so high that they barely managed to survive on their meagre salaries.

The complaint of the extension agents about poor remuneration is in itself not unique because the salary scales for all employees with similar qualifications in the civil service is the same - and the Extension Service is no exception to this rule. Studies by I.L.O. (1972) indicate that salary scales in the civil service are lower in comparison to those of the private sector not only in Kenya, but in other developing countries as well. Therefore our assumption would be that civil servants who are in other Ministries also have complaints similar to those of extension agents because of the low salaries they receive.

They, however, seem to be justified in stating that their salary scales are too low to meet their daily demands due to the rising cost of living in Kenya. This is because, although the Waruhiu Committee (1980) had proposed that staff remuneration should be reviewed every two years, with the view of effecting adjustment to cover changes in the cost of living and the Government accepted it (in paragraph 48 of sessional paper No. 10 of 1980), this has not been done since the review of staff salaries by the Ramtu Commission in 1985. During this period, the inflation rate has escalated while the yearly increments of staff salaries in various job groups have increasingly declined.

Table 3 shows the yearly increments for the lower, middle and higher income groups from 1986 - 1989 as compared to the inflation rate in Kenya during the same period.

TABLE 3.

Yearly increments of staff salaries in lower, middle and higher income groups compared to inflation rate (1986 - 1989).

Job Group	Lower Job Grps.		Middle Job Grps.		Higher Job Grp.	Inflation Rate
	F	G	H	J	K	
Rate of Salary Increse per Yr.	%		%		%	%
1986	3.7	4.8	3.7	3.8	3.8	4.6
1987	3.6	3.8	3.5	3.3	3.6	5.6
1988	3.4	3.7	3.4	3.2	3.2	8.7
1989	3.3	3.6	3.3	3.1	3.1	11.2
TOTAL	14.0%	15.1%	13.9%	13.4%	13.7%	30.1%

Sources: (i) Ramtu Commission 1985, Report of the Civil Service Salaries Committee (Government Press).

(ii) Central Bank of Kenya 1988, Quartely Economic Review Vol XX 1 No. IV April - June.

(iii) Central Bank of Kenya 1986, Twentieth Annual Report for the financial year 30th June.

Table 3 Indicates that the staff salaries in job group 'F' increased yearly by an average of 3.5%, by 3.7% for Job Group 'G', 3.5% for Job group 'H' and by 3.5% for Job Group 'K', while the inflation rate

increased by an average of 7.5% during the same period.

These figures indicate that staff salaries were not increasing during the stated periods, they were declining in real terms. One could, therefore, conclude that the purchasing power of Government employees in the Ministry of Agriculture has been reduced due to the rising cost of living which has been experienced in Kenya during the last five years. Therefore, low pay would definitely be a factor which could cause discontent and despondency among extension staff in the study area.

The author's investigations on the career prospects of the staff seemed to reveal findings which reflected the lack of concrete policy decisions and code of regulations on staff evaluation, work performance and career planning that exist in the civil service (see literature review p. 16-18). Of the seven extension agents interviewed, six had worked for at least five years and one had worked for twenty five years. Only one extension agent had been promoted during this period and only after he had attained a diploma certificate in Agricultural Engineering. Table 4 shows the promotion of different cadres of extension workers since their employment.

TABLE 4.

Promotion Opportunities

Extension Agents	Divisional Agric. Extension Officer		Locational Agric. Extension Officer		Tech. Assist. & Jr. Tech. Assist		Total	
	n	%	n	%	n	%	n	%
Promoted	0	0.00	1	14.3	0	0.00	1	14.3
Not Promoted	1	14.3	0	0.00	5	71.4	6	85.7
Total	1	14.3	1	14.3	5	71.4	7	100

Table 4 indicates that the majority (85.7%) of the extension staff had not been promoted. They also indicated that their chances of promotion were extremely slim since the short term courses (which they had all attended at least four times in a year) were only refresher courses and did not enhance their chances of promotion in any way. Further training in order to obtain a diploma certificate for the Technical Assistants was nearly impossible since there are only two colleges which provide such training in Kenya: Jomo Kenyatta University College of Agriculture and Technology and Egerton University. One extension agent bitterly remarked, "a course without promotion is useless. Sometimes we refuse to attend them"

It was, however, quite difficult to make conclusive statements about promotion opportunities of staff in the study area. First, because they were too

few compared to the total number of extension agents in the extension service to determine the exact situation of staff promotion in the organization. Second, staff promotion in any organization is a sensitive issue since it involves factors like the dedication of the employee to his job, his efficiency, his training and qualifications and his relationship with his superiors among other considerations. Investigations on the above factors are beyond the scope of this study and the author did not therefore have information to determine why most of the staff had not been promoted since their appointment. Although one employee had not been promoted for twenty five years, it would be difficult to make any generalization on the basis of one respondent's answer. We must not however overlook the fact that studies from Leonard (1973) and Umalele (1975) indicate that lack of promotion in various areas of the country is one of the causes of staff disgruntlement with their jobs. Therefore, if this were to be the case for the majority of extension workers all over the country, then this definitely would be a factor that could create discontent among staff members in the area of study.

4.2.2 **Extension Agent-farm Family Ratio**

Further investigations about the constraints encountered by extension staff in the field revealed that their work-load appeared heavy for the few extension officers in each sub-location. Although some sub-locations were quite big and were divided into smaller portions to ease staff work-loads, they still complained that the farm families were still too many for them to handle. Farm family refers to those farm households specifically chosen for farm visits by extension staff.

Table 5 reveals that the extension agent to farm family ratio is about 1:483 for the entire location

TABLE 5

Distribution of Extension Agents per Sub-Location per Farm-Families

Sub-location	No. of Agents	Total Population	Total. No. of Households	No. of Farm Families	Contact Farmers
1. Koguta East	2	7568	1306	950	96
2. Kadiang'a East	2	10409	1830	950	96
3. Kadiang'a West	1	6842	1544	500	48
4. Kajimbo	1	5962	1092	500	48
Total	6	30781	5777	2900	288

Ratio of Agents to No. of Farm Families = 1.483

Note: One extension agent was assigned to the whole location to advice farmers on cashcrop production (coffee).

Source: (i) 1979 Population Census Statistics obtained from District Commissioner's Office in Kisumu.

(ii) Data collected from the field: Extension agent Questionnaire.

Table 5 reveals that the number of farm families who are supposed to be visited by extension staff in each sub-location is not representative of the total population in that particular sub-location. They are too few. Besides, at the time of investigations, the census reports available were those for the 1979 national population census. Taking

the present population growth rate to be 4% (Moi, 1986), it is expected that the current population is much higher than it was ten years earlier.

From the farm families allocated to the Technical Assistants by the DAEO only 48 contact farmers and a few follow-up farmers were regularly revisited. It was expected that the contact farmers would disseminate the new innovations to their neighbours. This was not always the case. The Technical Assistant explained that since the contact farmers chosen were often from a different social class from the rest of the farmers, class stratification barriers often prevented effective communication between them.

One could therefore assume that apart from the 48 contact farmers visited by the extension staff and a few follow-up farmers, the rest of the population do not receive individual farm visits from extension staff. In Koguta East sub-location only 1.3% of the total population are visited by the agents. In Kadiang'a East only 0.9% are visited, in Kadiang'a West 0.7% and in Kajimbo 0.8% of the total population are visited. Therefore the average population visited by extension staff in the whole location is 0.9%. The conclusion to be drawn from this is that the extension

agent farm-family ratio is not representative of the rest of the population in the location. These findings tally with those of Umalele (1975) and de Vries (1978), who point out that heavy staff work-loads prevent them from effectively performing their duties. This in turn affects farmer adoption rates of farm innovations.

4.2.3 **Staff Supervision**

It was evident from staff responses about the supervision they received from their superiors that it was one of the main factors which encouraged laxity within the Extension Service.

Supervision is done on a hierarchical basis in the Extension Service with the Director of Agriculture supervising all his subordinates. He is followed by the Provincial Director, then the District Agricultural Officer (DAO) who is in turn followed by the Divisional Agricultural Extension Officer (DAEO) and, finally, the Locational Agricultural Assistant (LAEO) who supervises the Technical Assistant (T.A).

Every year there is a work plan prepared at all levels within the organization. This is followed by a quarterly report, which assesses the successes and constraints of the yearly work plan. Monthly reports are submitted to the divisional heads by the field

heads. A yearly report is then compiled from the monthly reports and sent to headquarters. Then there is the staff approval report, written by the heads of each section to evaluate the work of each individual. The extension officers in the field are supervised by both the DAEO, LAEO and the district subject matter specialist. Ideally, the DAEO should visit the T.A.s at their places of work at least twice a week. He has monthly schedules which indicate to him where each T.A. is on a certain day and at a certain time. This pre-arranged schedule is of value to the supervisors (DAEO and LAEO) because they know where to find the Technical Assistant when they want to contact him. The DAEO and LAEO are also supposed to counter-check the progress of the T.A.s with the farmers by inquiring as to whether they visited them on their farms on a certain day. Spot checks (surprise visits) are also made to the field by both the Director of Agriculture, Provincial and Divisional Heads at any time of the year (DAO, 1990)

The author, however, got the impression that the T.A.s were writing too many progress reports . At the time of the present study, each T.A. in the study area had to furnish the DAEO with two lengthy reports per month. This means that in a year, the T.A. has to write 24 such reports. In addition, administrative

matters must also be attended to. It is the author's view that the amount of time spent on report writing and paper work would detract the T.A. from concentrating wholly on professional agricultural extension work, which in this case is the more important responsibility.

Second, there is no cross-checking system which reveals to the organization whether district, divisional and locational heads are effectively supervising field staff. When the extension staff were asked whether they had seen their locational or divisional heads in the last five months, all of them replied in the negative. They only met them during monthly meetings in their offices. Table 6 shows the number of farmers who had been visited by the DAEO of the area to counter-check on the T.A's farm visits.

TABLE 6

Distribution of farmers by DAEO's and LAEO's visits

Farmers	n	%
Visited	4	4.7
Not visited	61	71.8
Do not know	20	23.5
Total	85	100.0

From table 6 it is evident that the DAEOs and LAEOs rarely cross-check with the farmers on the progress of their staff. Needless to say, this would encourage laxity on the part of the T.A. and this would in turn affect the extent to which farmers can adopt improved farming practices.

This laxity on the part of extension staff was clearly apparent in the study area, when the investigator who had gone to interview the staff, found four of them napping in their houses on a Tuesday afternoon when they should have been at their places of work! On being questioned about their morning activities, one stated that he had taken a relative to hospital, another had been writing reports and one had visitors and so could not go for duty. Only one T.A. had visited two clients that morning (the number of farmers who should be visited on a daily basis is six). So even this T.A. did not adequately follow his work schedule. The other T.A.s did not request for permission from the LAEO to attend to their private concerns. One could, therefore, blame this laxity on the part of extension staff on the inefficient supervision on the part of their superiors.

Another point which struck the author as worth noting was that one T.A. who had been posted to his place of work a year before (posted in January, 1989 and was interviewed in January, 1990) had not visited even a single farmer by the time of the interview. Practically all the farmers in his area of jurisdiction stated this. They did not even know him. Because the sub-location was divided into manageable portions for two extension officers, many farmers thought that the extension officer in Koguta East (B) was equally responsible for Koguta East (A). In reality, the extension agent who had been allocated to them had never visited them, so they were unaware of his presence. Obviously, if there had been an efficient and organized method of staff supervision within the Extension Service, some of the staff would not have ignored their duties so blatantly. They were therefore merely taking advantage of a system which has serious loopholes in the implementation of its policies on staff evaluation, disciplinary action and supervision of its employees.

4.3 **Staff Elitism**

Staff elitism is another factor that has deterred effective communication between extension staff and rural small-scale farmers. Nearly all the

staff in South Nyakach, had attained form four and above levels of formal education and were therefore fairly well educated for the kind of job they were expected to do. The technical Assistants had received two years of technical training, while the DAEO and LAEO had received a diploma certificate after having received three years of technical training. Only one Junior Technical Assistant had primary education with three months of general training. But as had been stated earlier, he is of the last generation of Junior Technical Assistants who are being phased out of the extension service. The educational background of different extension agents is shown in Table 7.

TABLE 7

Educational Background of Extension Agents Serving in South Nyakach

TYPE OF AGENT	PRIMARY EDUCATION STD (I-VII)		SECONDARY EDUCATION FORM (I-IV)		HIGH SCHOOL EDUCATION FORM (V-VI)		TOTAL	
	n	%	n	%	n	%	n	%
Junior Technical Assistant	1	14.3	0	0.00	0	0.00	1	14.3
Technical Assistant	0	0.00	4	57.1	0	0.00	4	57.1
Locational Agricultural Officer	0	0.00	0	0.00	1	14.3	1	14.3
Divisional Agricultural Exten. Officer	0	0.00	0	0.00	1	14.3	1	14.3
TOTAL	1	14.3	4	57.1	2	28.6	7	100

While 85.7% of the extension staff have secondary and above levels of education, only 19% of the total number of the farmers in the study area have a similar level of education. The extension staff therefore have a relatively higher level of education in comparison to the farmers in the study area.

It was of significance to note that the extension staff considered themselves to be in a different

social class to the majority of the farmers. Indicators of this attitude were:- They socialized only with those whom they considered to be in their social class. This class included teachers,clinical officers and some of the wealthier farmers. Savos observes that civil servants in the Agricultural Extension Service in Kenya,

> ... are part of an isolated, cohesive social elite and, this involves them in a social class alliance and exchange of benefit with richer farmers. (Savos 1978:2)

Secondly, practically all the staff except the J.T.A. lived in the biggest trading centre in the area (Sondu), which is located on the main road and is accessible to both Kisumu and Kisii Towns because of the good communication network. When questioned on their reasons for not obtaining accommodation in the interior where they could be in closer association with rural farmers, two agents answered that they would lack appropriate company to interact with. Others stated that there were no social amenities like electricity, tapped water, bars and nightclubs in the interior to enable them to lead "comfortable" lives.

This elitist attitude of extension staff could have originated from the formal education they

receive which emphasizes academic rather than personal qualities and instills in its recipients a negative attitude towards those who reside in rural environs and encourage them to opt for white collar jobs in urban areas (Chitere 1980; de Vries 1978; Savos 1978). One of the extension staff referred to the farmers in his area of jurisdiction as "ignorant, illiterate, conservative with little level of understanding". It is difficult to expect much from an agent who has such a low opinion of his clients.

The negative attitude the extension staff exhibited towards their clients could also have arisen from the fact that during their training, emphasis is placed on technical subjects at the expense of the development of communication skills which would enable them to be good communicators with their clients. It is also possible that they lacked adequate knowledge and understanding of the social structures and institutions of the society they worked in. These deterred them from understanding the problems of their clients and prevented adequate adaptation to the local conditions.

For example, at Bukura Institute the syllabus includes: crop production, animal production, agricultural engineering, farm management, home economics, extension and administration. Extension and

administration include: rural sociology, communication skills, general government administration and planning and evaluation. The syllabus reveals that social science subjects are considered relevant for extension staff. However, the author neither had access to information stating the hours allocated for social science subjects per week nor information indicating the attitude of technical students towards social science subjects. It was, therefore, impossible to determine whether the technical students considered social science subjects as relevant to them as future extension workers. Their attitudes towards the above subjects could have revealed whether they studied them seriously or not.

However, research done by Wallace in 1974 in Nyanza, Western and Rift Valley Provinces and presented at a workshop at Bukura Institute states that the recurrent complaints of the extension staff during his research were: uncooperative administrators, farmers' resistance to new ideas, farmers' lack of knowledge, lack of transport and strenuous work. The extension staff also stated that their main difficulties were: how to solve social problems, how to obtain new government regulations, how to obtain price changes (input and products) and

how to obtain pamphlets and teaching aids. The staff recommended that extension, farm management, horticulture, animal husbandry, surveying, mechanization and engineering should have been taught more thoroughly.

From Wallace's findings, one could conclude that the extension staff he interviewed did not have adequate communication skills and lacked enough understanding of the social environment which could enable them to deal effectively with both the farmers and the local administrators. His main recommendation was that "... a good proportion of training time must be devoted to the overall development of future extension staff as good communicators and agents of change. They must develop an understanding of the rural environment including economic, social and ecological factors" (Wallace 1974). From recent studies done by de Vries (1978) and Chitere (1980) the obvious conclusion one would arrive at is that, this objective has not been realised by extension staff not only in the study area, but in Kenya as a whole. The training they receive may therefore be considered inadequate in preparing them for communicating effectively with their clients and accepting the hardships of the rural areas.

In Kenya, the imbalance of underdevelopment which was inherited at independence has weighted against rural areas (Moi 1986). Therefore, the above mentioned facilities are still lacking in many areas. Although the District Focus for Rural Development (1984) was formulated to rectify the situation and facilitate rural development, this objective will not be achieved for several years to come. Therefore, staff elitism is detrimental since it prevents adequate interaction and communication with rural small_scale farmers.

It was interesting to note that the Junior Technical Assistant who had primary education and general extension training was able to interact more with the farmers and had an average of more farm visits than those Technical Assistants who had more formal education and had undergone professional training. Table 8 gives the amount of farm visits done by the extension officers in their area of jurisdiction.

TABLE 8

Number of farm families per sub-location by extension agents

Sublocation	Number of Extension Officers		Farmers Contact with Extension Officers				Total Number of Farmers Interviewed
	J.T.A.	T.A.	Yes	%	No	%	
Koguta East(A)	1*	–	11	84.6	2	15.4	13
Koguta East(B)	–	1+	–	0	9	100	9
Kadiang'a West	–	1+	10	40	15	60	25
Kadiang'a East	–	1+	11	40.7	16	59.3	27
Kajimbo	–	1+	3	18.7	13	81.25	16
Total	1	4	35	39	55	61	90

J.T.A. ——— Junior Technical Assistant

J.A. ——— Technical Assistant

* ——— Primary School Level

\+ ——— Secondary School Level

From table 8 it is evident that the Junior Technical Assistant averaged more farm visits (84.6 %) than the Technical Assistants. A variety of reasons could explain this finding. Either the Junior Technical Assistant is a dedicated worker and therefore performs his duties more effectively than the rest, or as had been stated by de Vries (1978), Chitere (1980b) and Leonard (1973) in their studies on staff elitism in

the Extension Service, the level of academic education he attained and his more general training in extension work was not enough exposure for him to acquire the elitist attitudes evident in the rest of the staff who are of a higher level of education. If this is the case, then it would be unwise for the Extension Service System to eliminate the Junior Technical Assistants who seem to be of more service to rural small-scale farmers. It is, however, quite difficult to make conclusive statements about the situation on the basis of the activities of one respondent. More research needs to be carried out in order to determine the effect of general agricultural training on staff attitudes towards their clients and their general work performance. The author, however, believes that it is the type of education provided and not the level of education attained, that injects elitist attitudes in extension staff. Therefore the right type of education and training would hopefully rectify the situation.

In conclusion, this chapter has dwelt on the structure of Extension Service and the chain of command from the top most officer down to the front line workers in the field. It has also addressed itself to the organizational issues within the Extension Service that affect farmers' adoption rates of

agricultural innovations. Findings from the study area have revealed that staff remuneration (pay and allowance) are quite low and as a result the staff are unable to cope with high cost of living. This has created apathy and fatalism among staff. This has in turn interfered with their work performance in their areas of operation.

Secondly, findings reveal that the number of extension agents working in the study area are too few to effectively reach a larger number of farmers. This means that many farmers do not have access to extension services and these in turn retards economic development in the rural areas. Lack of adequate staff supervision is another factor that acts as an obstacle to effective dissemination of agricultural information to farmers. Finally, findings in the area of study reveal that the elitist attitudes exhibited by staff members predisposes them to approach the farmers with a paternalistic attitude which prevents effective communication and creates social barriers between them.

CHAPTER 5

CULTURAL AND SOCIO-ECONOMIC FACTORS IN AGRICULTURAL INNOVATIONS

In the previous chapter, the author dealt with those factors which deterred extension staff from actively performing their duties. This chapter explores the cultural and socio-economic characteristics of adopters. Variables like education, wealth and one's cultural values are discussed to determine the extent of their influence on farmer adoption rates.

5.1 Culture

Before examining the relationship between culture and farmer adoption rates, it is pertinent to provide background information on those traditional value systems and customs that are directly related to agricultural practices found in the area of study. This overview will facilitate the analysis of those cultural factors that would either impede or facilitate the adoption process.

5.1.1 Lineage system, Land Tenure and Land use Patterns

The Luo lineage system has a patrilocal descent. The largest lineage segment they recognise is called piny. This refers to the land occupied by the

whole of the Luo society. The next lineage group is called gweng'. Gweng' comprises several homesteads which are either closely or distantly related to one another. It is synonymous to the term "clan". The smallest lineage segment is known as Jokakwaro, which means people from the same grandfather, but it can be extended to comprise a particular lineage reaching far back to several generations. Jokakwaro often live in the same homestead, dala, which includes the male head of the home, his wives, children (both married and unmarried), a widowed mother, other kin and adopted members. When they reach middle age, married sons leave their original home in order of seniority and build their own homes on land allocated to them by their fathers. This is referred to as goyo dala. Sons who do this gain the status of respected elders and are no longer under the jurisdiction of their parents. However, they retain their kinship ties and remain family members of their original homes.

Jokakwaro collectively perform certain functions like weeding, planting, harvesting, building houses and working together during burial ceremonies and weddings. There is also communal sharing whereby during planting periods, those who have seeds in surplus share it with those who do not have any. Ox-

ploughs are shared between several families during periods of land clearing. After the harvest, those who planted particular crops share them with those who did not plant them. This is particularly true of various types of vegetables, onions, tomatoes and fruits. In spite of the fact that the above crops are sold as cash crops, propriety demands that people of Jokakwaro do not sell such crops to one another. This is because there is a system of exchange based on reciprocity. When gifts are exchanged between friends and relatives, an imbalance is created between the giver and the recipients. A debt is created and the recipient is obliged to repay the debt. It is not necessarily repaid in the form in which it was given. It can be repaid by providing non-hired labour during farming activities or assisting during social functions. It is important to emphasize that gifts are not offered for monetary gain but, rather, to enhance one's prestige and acceptance among family members and friends.

Land is inherited and owned along patrilineal lines. This gives males direct control over land usage. Where there are no sons, the closest male relative inherits the land. A woman therefore has no claim to land at her place of birth. She, however, obtains unsufructuary rights over her husband's land once she is married. When her husband dies, this land

is inherited by her sons. She, however, loses her usufructuary rights to this land in the event of her moving away from her husband's home. Spinsters and divorcees have no rights to land and are therefore landless. During the precolonial era, divorce rates were low and spinsterhood was a rare occurrence. The westernization process has, however, consistently eroded traditional family lifestyles. Therefore, the increasing number of spinsters and divorcees is one of the social problems which the Luo have to contend with in today's society. In a polygamous home, allocation of land depends on the position of the wife or her son within the home. It also depends on the relationship between the wife and her husband or between father and son. A second or third wife is usually allocated land by subdividing the land initially allocated to the first wife. The last born son normally inherits the land which is farmed by his mother after all sub-divisions have been done. When a polygamous man dies, the land held by his widows is retained by them and each of them assumes the responsibility of assigning the various pieces of land to their sons (information obtained from farmer questionnaire).

A wife does not have the right of alienation. If she attempts to do so, her sons or the husband's

male relatives can restrain her since it is considered part of the family inheritance. Even with the introduction of title deeds, which has led to land privatisation, a widow may still find it difficult to dispose of her husband's land. This is because of the current legal system which gives local leaders a say in land sales (Siaya District Socio-cultural profile 1987).

On the question of land use, grazing land, water supply and hills where firewood is collected is communal while crop production is individualized. Women are the predominant participants in agricultural production. Men clear the land for planting and plough where ox-ploughs are available. In areas where cash crops are grown, men engage in intensive farming and therefore actively participate in all farm operations (sowing, weeding and harvesting)

5.1.2 Rituals and beliefs related to Agricultural Activities

During the planting periods, the oldest male head of the household begins all farming activities (clearing, sowing, weeding and harvesting) followed by younger members in their order of seniority. The night before planting begins sexual intercourse is performed by the oldest members of the home.

Sex is an important ritual activity in the Luo society. It marks all important activities and emphasizes that harmony and unity predominate during important functions. Thus, during major farming activities, it is the responsibility of the family lineage head to trigger off these activities by performing this ritual. In a polygamous home, this rite is initially performed by the husband and the senior wife. A similar activity is undertaken with the younger wife or wives at an interval of four days. The sons all perform a similar rite with their wives in order of seniority. Failure to perform this rite signifies ill-omen for the lineage of that particular family.

On the planting day, the eldest wife passes with the seeds through the main gate. It is believed that this is necessary because it keeps bad omens at bay. If the eldest member of the family delays in tilling his land for any reason, the younger members must till and plant crops on his plot before moving on to their own plots. This ensures that there are no delays in the tilling of land during planting periods. One of the main taboos observed during this period is that a dead person is not carried across the fields lest this causes hailstorms and destroy crops. The

Luo society believes that the death of a person usually results in thunderstorms.

5.1.3 Tradition and social change

Investigations reveal that cultural attitudes and belief systems do not seem to pose a serious obstacle towards the process of social change. Table 9 illustrates farmers' attitude towards change.

TABLE 9

Farmers' attitudes towards the process of change (n=86)

Changing Attitudes	Strongly agree		agree		disagree		strongly disagree		Do not know	
	n	%	n	%	n	%	n	%	n	%
a. It is better to grow traditional varieties of maize rather than take a chance on unknown variety even though it may yield more.	9	10.5	1	1.2	4	4.6	69	80.2	3	3.5
b. If a person is to get ahead in farming, they must be prepared to take chances.	76	88.4	5	58	3	3.5	2	2.3	0	0.0
c. The way my father farmed is better than any government agent can tell me	15	17.4	2	2.3	10	11.6	59	68.6	0	0.0
d. New farming ideas are only suitable for wealthy farmers.	5	5.8	3	3.5	8	9.3	70	81.4	0	0.0
e. New ideas are not tried by villagers because:										
(i) they are too costly	40	46.5	4	4.6	7	8.2	35	40.7	0	0.0
(ii) farmers who have tried them have never succeeded	9	10.5	2	2.3	11	12.8	64	74.4	0	0.0
(iii) nobody has told me about them.	20	23.3	7	8.1	3	3.5	45	52.3	11	12.8
f. Success in farming is more dependent on God's will than on the efforts of man.	6	7	0	0.0	5	5.8	75	87.2	0	0.0
g. New varieties of farming are better than old ones.	78	90.6	1	1.2	1	1.1	6	6.9	0	0.0
h. Farming is changing here. I should also change how I farm.	80	93	3	3.5	0	0.0	3	3.5	0	0.0

Source: Attitudinal questions are adopted from Suda's dissertation (1986) with modifications by the author and data obtained from the field.

Table 9 indicates that the majority of the farmers had a positive attitude towards change. Questions b,g, and h, specifically tested whether the farmers' attitudes were positive while questions a, c, e, and f tried to find out whether the farmers were conservative. Those who had a positive attitude were adopters of some kind of farm innovation. The high adopters had the most positive attitude and were therefore the most enterprising. Thus 78.6% of the high adopters preferred to take a chance on planting a new variety of maize seed rather than continue planting traditional varieties. 97.6% preferred taking risks in order to succeed in their endeavours and 97.6% wanted to change their farming activities to fit with the changing times.

This positive attitude was counterchecked in table 10 by asking extension staff to rate the farmers' characteristics in their area of operation.

TABLE 10

T.A. opinion of farmers attitude towards the process of change in their areas of operation (n=5)

Characteristics	Excellent		Good		Fair		Poor	
	n	%	n	%	n	%	n	%
1. Farming reputation	1	20	2	40	2	40	0	0.0
2. Rate of adoption of agricultural innovations	1	20	2	40	2	40	0	0.0
3. Flexibility to change	1	20	3	60	1	20	0	0.0
4. Consultation with extension agents	1	20	3	60	1	20	0	0.0
5. Desire for agricultural training	3	60	1	20	1	20	0	0.0
6. Attendance of agricultural meetings	2	40	1	20	1	20	1	20
7. General co-orporation with extension agents	3	60	1	20	1	20	0	0.0
8. Willingness to attend agricultural courses	3	60	2	40	0	0.0	0	0.0
Total	14	(35.9)	15	(38.5)	9	(23.1)	1	(2.5)

Table 10 illustrates that the majority of extension staff believed that farmers' attitude towards the process of change was either excellent or good. 2.5% stated that it was poor, but only in their attendance of agricultural meetings. It is therefore not surprising that all members of the sample were adopters of various categories of farm innovations. 33.3% were

high adopters, 18.9% were average adopters and 47.8 % were low adopters. Admittedly, the low adopters were more than the other categories of adopters. However, the fact that they adopted some form of innovation indicates that they are responsive to the process of change.

Proponents of the modernization theory (Moore 1963 and Inkeles 1973) would argue that communal lifestyles encourage wastage and prevent accumulation of capital which would enable one to adopt those innovations that would increase food production on their farms. They would view the distribution of maize seed (especially hybrid maize) amongst kinsmen from the same family unit as wastage since giving some of it away means that one would plant less on one's own plot. Sharing cash crops like various types of vegetables, onions and tomatoes means that one cannot sell them to accumulate capital for future investment. To these theorists, therefore, egalitarianism is an obstacle to the process of social change because it curtails the spirit of entrepreneurship and thus impedes adoption of innovations.

The author, however, shares Schlosser's (1984) opinion that the communal social structures and organizations of the Luo society do not impede the process of change. On the contrary, during periods of

clearing the land, weeding, planting and harvesting, the reciprocal exchange of non-hired labour between members of the same family unit greatly reduces the increased work-loads created by the use of improved farming methods.

Corporate activity also facilitates the diffusion process. While participating in various farm activities, those who are unaware of certain farm practices will be able to learn them. If those farm activities result in increased yields, some people may adopt them. Besides, the sharing of high yielding crop varieties and various types of cashcrops also implies the "selling" of the idea of these particular crops to those who do not plant them. This would facilitate the diffusion of these innovations.

It is also possible that communal lifestyles could erode the social stratification barriers between contact farmers and the rest. This assumption is based on the fact that it is easier for members of the same family unit to exchange ideas than to communicate with total strangers. Therefore, contact farmers would possibly transmit their acquired knowledge to their immediate family members, Jokakwaro, before disseminating the information elsewhere. Therefore, attitudes, values and belief

systems which were related to agricultural activities did not seem to deter the process of social change. There could be other factors apart from traditionalism, which impeded adoption rates of farm innovations in the area of study.

The predominant factor which precipitates and accelerates the process of change is that people must be provided with profitable incentives so that they can adopt new attitudes, values and motives that can promote development (Bascom et al 1959; Mead 1974; Morris 1971; Parkins 1972 and Roberts 1979). In the agricultural sector, these incentives could be in the form of access to factors of production like adequate and fertile land, enough capital for farm development, access to market facilities, a good communication network, access to urban centres, good extension services and an attractive agricultural technological package.

Findings reveal that the technological package provided to the farmers seemed to have most of the required perceived attributes of an innovation. As mentioned in earlier chapters these attributes are:- Its relative advantage, its compatibility, its triability and its observability (Rogers and Shoemaker 1971). Question "g" on table 9 attempts to find out about the relative advantage of new farm practices from respond-

ents. 90.6% stated that new varieties of farming are superior to old ones. This is because the high yielding crop varieties provided better yields and were harvested at relatively shorter periods compared to traditional crops. As a result, farmers had enough food for consumption and enough surplus for sale. In spite of the fact that there was an increased amount of work involved in improved farming practices like soil levelling, seed dressing, early planting, planting in rows and crop rotation, the new farming practices enabled the respondents to plant and harvest several crops from small plots (the average hectareage per person for the district is 1.6 ha, with a range from as little as less than 0.4 ha to more than 40 ha) Alila (1978). They therefore obtained some income from the various crops.

Question (e) tested the triability and observability of the innovations adopted. 74.4% of the sampled members stated that most farmers who had tried new farming practices had succeeded in their endeavours. 51.7% were aware of improved farming methods. Therefore, apart from the major constraint of inadequate funds required for the implementation of the innovations (stated by 46.5% respondents), this study concluded that the technological package provided to

the farmers had most of the required perceived attributes which facilitated its acceptance by the recipients. It therefore acted as an incentive for change and encouraged the farmers to adopt new farm innovations.

Another factor which influenced the farmers attitude towards change was the availability of fertile land. It acted as an incentive for these farmers whose experiments with improved farming practices succeeded. As stated earlier, South Nyakach in which Nyabondo Plateau is found, has one of the most favourable ecological conditions in the district. The quality of its soil, which consists of latasonic dark friable clays lwala is quite fertile. Rainfall, which is about 152 - 177.8 m, is one of the highest in the district (Alila 1978). This facilitates the growth of both subsistence crops and cash crops. Proper utilization of land in this area would therefore lead to an increase of agricultural productivity.

One would, however, expect that because cultural constraints prevent women who are the main agricultural participants from owning land, they would have less interest in initiating activities which would increase the food production on their farms. This is because they cannot make major decisions concerning farm management without consultations with their

husbands. One would also expect that because women lack title deeds which can be used as collateral to enable them to have access to loan facilities, they would be discouraged from adopting those innovations which require the use of sabstantial capital on their farms.

The above arguments did not seem to apply to the area of study and the author discounted them on the basis of fact that only 31% of the land potentially available for small holder registration is registered while 69% remain unregistered (Kisumu District Development Plan 1984/1988). This has implications for agricultural production in the area of study because unless this land is registered and its owners obtain title deeds, they have as little access to loan facilities as the women. Therefore, although a few men who have title deeds would use them as collaterals to obtain loans, the majority who lack title deeds do not have this advantage. Therefore the above factor is an obstacle for both sexes.

Another reason was that although women do not own the main means of production, which in this case is land, they do have usufructuary rights to it. The author identified three types of cultivation in the area of study. One, in some polygamous homes the husband gives all his land to his wives and retains

nothing for himself. He does little cultivation because he does not want to encourage jealousy amongst his wives if he helps one at the expense of the others. Two, in some monogamous and polygamous homes women have their own plots to cultivate but the man retains a plot for himself. He grows crops and sells the yields to obtain income for the maintenance of his family or for emergency purposes. Such cases are common where cash crops like coffee, sunflower and groundnuts are grown. Finally, in other monogamous homes, the family constitutes the main production and consumption unit and land is cultivated jointly.

From the above types of cultivation,it is evident that a woman is given leeway to cultivate various types of crops on her plot. Apart from obtaining food for consumption, she can sell the surplus and keep the money for her own use. This surplus is usually in the form of cash crops like tomatoes, onions, various types of vegetables, fruits and groundnuts. It is only on those farms where cash crops are grown in abundance that the men control the main source of income and actively engage in the marketing of the products. Those farmers who perform intensive farming of various crops for marketing purposes also control the purse strings. The usufructuary rights on land provided to the women and the subsequent pocketing of

the income they obtain from selling their crops give them a powerful incentive to adopt those innovations that would enhance their crop yields.

This receptive attitude towards the process of change is best exemplified by their response to the various questions on table 11.

TABLE 11

Changing Attitudes of Men and Women (n=88)

Changing Attitudes	Men				Women			
	Agree		Disagree		Agree		Disagree	
	n	%	n	%	n	%	n	%
a. It is better to grow traditional varieties of maize rather than take a chance on unknown variety, even though it may yield more	4	(4.5)	35	(39.8)	1	(1.10)	48	(54.6)
b. If a person is to get ahead in farming, they must be prepared to take chances	37	(42)	2	(2.3)	48	(54.6)	1	(1.1)
c. The way my father farmed is better than any Government agent can tell me	4	(4.5)	35	(39.8)	9	(10.2)	40	(45.5)
d. New farming ideas are only suitable for wealthy farmers.	4	(4.5)	35	(39.8)	2	(2.3)	47	(53.4)
e. New ideas are not tried by villagers because:								
i. they are too costly	27	(30.7)	12	(13.6)	20	(22.7)	29	(33)
ii. farmers who have tried them have never succeeded	5	(5.7)	34	(38.6)	7	(8)	42	(47.7)
iii. Nobody has told me about them	12	(13.6)	27	(30.7)	14	(15.9)	35	(39.8)
f. Success in farming is dependent on God's will rather than on the efforts of men	1	(1.1)	38	(43.2)	6	(6.8)	43	(48.9)
g. New varieties of farming are better than old ones	35	(39.8)	4	(4.5)	47	(53.4)	2	(2.3)
h. farming is changing here. I think I should change how I farm.	36	(40.9)	3	(3.4)	48	(54.6)	1	(1.1)

The impression one gets from scrutinizing table 11 is that there is no significant difference between women's attitude to change compared to that of the men. In both sexes the older age groups between 61 and 84 years expressed conservative ideas. Cases in point are questions a, g, and h, where more men preferred traditional agricultural methods than women. It is indeed true that more men were high adopters at 56.7 % while women who were high adopters were 43.3 %. More women were in the category of average adopters at 64.7 % and low adopters at 60.5%. For the men, the low adopters were 35.3 %. However, the author believes that other factors like inadequate access to extension services could have contributed to the low adoption rates of farm innovations by women than cultural factors.

Finally, South Nyakach is strategically placed both in terms of its access to the nearest urban centres (Kisumu and Kisii), a good communication network connecting the two towns and it has proximity to a market centre (Sondu) which serves three ethnic groups, namely, the Luo, Abagusii and the Kipsigis. It is, therefore, logical to assume that there is an influx of ideas from the urban centres which would make the respondents more receptive to change. Apart from having a ready market for their goods, their

interaction with the Kipsigis and Abagusii would enable them to obtain new ideas on farming practices which are different from their own, since the two ethnic groups are predominantly agriculturalists.

Besides, exposure to outside influence encourages cosmopolitan characteristics in some recipients. Most members of the sample who were full time farmers consisted of middle aged men (45-64 years) who had retired from formal employment and turned to farming to occupy themselves and obtain some source of income. The case of one man in the sample provides an illustration of how cosmopolitan characteristics can influence one's adoption rates of farm innovations. Mr Leo Otieno (pseudonym) is a retired farmer aged 55 years, who had not invested in any form of business during his period of employment. To obtain some sort of income, he utilised his retirement benefits to practice intensive farming on 1.2 ha acres of land. His farm is one of the best known around the area. Three farm demonstrations have been performed there by extension staff during the last two years. He does not have to take his crops to the market. Middle men purchase crops directly from the farm for sale.

Admittedly, not all retired middle aged men have succeeded as well as Mr. Otieno. However, cosmopolitanness does positively influence one's attitude

towards the process of change. For the retired lot who aim to practice farming, the initial capital obtained as retirement benefits would be utilised in implementing farm innovations which would increase their crop yields. Parkin (1972) describes similar characteristics among entrepreneurs of Giriama land.

In summary, the author contends that cultural belief systems and values are not a serious obstacle to the process of change within the area of study. On the contrary, members of the sample were quite receptive to social change. This could be because one, they have been provided with an attractive technological package and this has positively influenced their adoption rates. Two, the availability of fertile land has acted as a incentive since they obtain high yields from the various crops planted through the use of improved farming practices. Three, the proximity of South Nyakach to two urban centres, its good communication network and the availability of a ready market which is frequented by various ethnic groups facilitate the change process. This is because the influx of ideas from urban centres and their interaction with these communities who are predominantly agriculturalists, would influence them to view change as a positive phenomenon. Finally, the social struc-

tures and organization of the Luo in the area of study do not impede the change process. Their communal ties which encourage corporate activity can be effectively utilized to transmit modern agricultural practices. The findings of this study are in contrast to those of Foster (1962), Rosen (1920) and Hyden (1983) who view peasants as people who are steeped in traditionalism and whose "conservative value systems do not encourage or rationalise planning for and striving towards more substantial future rewards" (Ascroft, 1976). The findings tally with studies from Roberts (1978), Parkin (1972), Mead (1974) and Bascom et al. (1959) who believe that if peasants are provided with adequate incentives and economic opportunities that are compatible with their felt needs and experiences, they will be more responsive to change.

5.2 **Education**

The level of education attained by the respondents is given in table 12. The levels attained were put into four categories:- Illiterate, primary level, secondary level and high school level and above.

TABLE 12

Distribution of Respondents by Educational Level

(n=90)

Educational Level	Men		Women		Combined	
	n	%	n	%	n	%
Illiterate	18	20	29	32.2	47	52.2
Primary	12	13.3	13	14.4	25	27.8
Secondary	9	10	7	7.8	16	17.8
High School	2	2.2	0	0.0	2	2.2
Total	41	45.6	49	54.4	90	100

From table 12 it is evident that the majority of the respondents (52.2 %) are illiterate. It also shows that as one ascends the educational ladder, the proportion of the respondents becomes progressively fewer. Thus, only 2.2 % of the respondents had attended school up to at least high school level. These findings are consistent with the picture throughout Kenya. Its educational system is structured in such a way that it sieves only a few students at every stage, and admits only the cream at the university level, leaving the majority on the wayside.

The men in the sample tended to have more years of schooling than women. The reasons for this gender differentiation in education are cultural.

Since the colonial period, women have had considerably fewer educational opportunities than boys (Smock 1977). This is because the cultural values and norms defining women's roles in society embodied in the educational system, strongly reflected the colonial legacy that imposed Victorian conceptions of sex roles over the more complementary division of labour which existed during the colonial era (Smock 1977 and Staudt 1977). As a result, the sex of the child would play a predominant part in determining whether the boy or girl should go to school when there are insufficient funds for school fees. The parents would reason that the son is an investment for the future. The daughter, on the other hand, will be provided for by the husband.

Another reason which could explain this differentiation in education levels between the sexes is that there are more drop out rates for girls than for the boys due to pregnancies and early marriages. Of the female respondents interviewed who had secondary education, 85.6% had either Form I, II, or Form III education. Only 11.1% had attained Form IV level of education. In contrast, 77.8% of the men who had attained secondary level of education had reached Form IV.

Findings from the area of study reveal that the education of an individual positively influences their adoption rate of agricultural innovations. Table 13 shows the correlation between education and farmer adoption rates of agricultural innovations.

TABLE 13

Education versus categories of Adopters

Education level	Low Adopters	Average Adoptors	High Adoptors	Total
Illiterate	35	7	5	47
Primary	8	5	12	25
Secondary	9	3	4	16
High school +	1	0	1	2
Total	53	15	22	90

$x^2 = 22.9$ df = 6 P = .001

Since the calculated value for chi-square is 22.9, we conclude that the null hypothesis has been rejected at the .001 level. This degree of significance indicate that there is a correlation between education and farmer adoption rates of farm innovations. These findings tally with those of Rogers (1969), Marsh et al (1966) and Heyer et al (1971) who concluded from their studies of education and adoption rates in various communities that education is an important characteristic of innovation adopters.

Investigations, however, reveal that the level of education attained has no influence on one's adoption rate of innovations. On the contrary, the majority of the high adopters (54.5%) had primary education, while only 18.2% of the high adopters had secondary education. The majority of the laggards (56.2%) had secondary education, while only 33.3% of the laggards had primary education. It is, however, difficult to make conclusive statements about the adoption rates of those who had form V and above level of education because the respondents were too few. Only 2.2% of the total sample with higher levels of education were interviewed.

The reasons for the low adoption rates of innovations at higher levels of education could be because most of those with secondary education have part time jobs which enable them to obtain extra sources of income. They are, therefore, part-time farmers and not fully committed to agricultural activities. A similar trend was observed by Kimberly (1986:96) in his study of Msindunyi farmers in Coast Province. He remarks, "the more educated a man is, the greater is the likelihood that he is employed in wage labour locally and that he is not a full time farmer or commercial producer, but only minimally committed to agriculture".

Education, however, was not the only variable that influenced farmer adoption rates in the area of study. Other variables could be equally important in influencing farmers to adopt farming practices. This conclusion was drawn because the percentage of adopters who were educated were only slightly higher at 48.9% than adopters who were illiterate at 43.3%. When the education data was examined by gender, it was seen that the percentage of female adopters who were illiterate were more by 35.6% than those who were educated at 15.6% . This can be explained by the fact that more female farmers were illiterate at 67.3% than those who were educated at 32.7%. The reverse was the case for the men. Their percentage of adopters was higher for those who were educated at 24.4 % than those who were illiterate at 16.6 %. This is because although the majority of the men were illiterate at 56.1% than those who were educated at 43.9%, most of the educated farmers had attained primary education and were often full-time farmers. Since they derived the bulk of their income from farming, it is logical to assume that their educational background facilitated their understanding of the more complex information provided by extension staff on farming methods than the illiterate farmers. They were therefore able to adopt improved

farming practices to a greater extent.

In summary, it is submitted that education is positively related to adoption of farm innovations. The level of education attained by the members of the sample had, however, no influence on their adoption rates. On the contrary, at higher levels of education most of the respondents were only part-time farmers. This is because they had other occupations from where they obtained other sources of income. Therefore, it is logical to assume that since they were not full-time farmers, they were unlikely to have knowledge on most of the innovations related to agricultural activities. This affected their adoption rate of farm innovations.

5.3 Economic Status of the Farmers

The economic status of the farmer was assessed by finding out about the property they possessed and their other sources of income. These properties included:- land hectareage, which in this case meant only that number of hectares which is effectively utilised for crop production, number and types of animals one possessed, the type of house one owned, household items and other sources of income.

A scoring system was devised whereby land hectareage was divided into: farmers with from 0 - 0.4

ha of land scored zero (0), those with 0.8 - 1.2 ha scored one (1), those with 1.2 - 2.4 ha scored two (2) while those with 2.8 ha and above scored three (3).

- Other sources of income: one score was given to the farmers with part-time employment like pottery, fishing, brick making, rope making and basketry, two (2) scores for retired farmers receiving pension, three (3) scores for those who were in full time employment and four (4) scores for businessmen with landed property.

- Type of house: farmers with mud houses with thatched roofs and earth floors scored zero (0), those with semi- permanent houses scored one(1) and those with permanent houses scored two(2)

-Livestock was divided into:

Grade Cattle: Zero (0) score was given to those with no cattle, one(1) score for those who had from 1-2 animals, two (2) scores for those with 3-5 animals and three (3) scores for those with 6 and above animals.

Native cattle: Zero (0)scores for those with no animals, one (1) score for those with 1-4 animals, two (2) scores from 5-8 animals and three (3) scores for those with from 8 and above animals.

Small Livestock (sheep and goats): Zero (0) score was given to those with none, one(1) score for those with 1-6 animals, two (2) scores for those with 7- 12 animals, three (3) scores for those with 13 and above animals.

- Household items and other property: Zero (0) score was given to those with an earthen fire place, wooden chairs, stools, plastic and metal plates, one (1) score for those with jikos, curtlery, sofa sets, radios,bicycles and table and two (2) scores for those who owned a fridge, cooker, television, radio, curtlery sofa sets and car.

The scores ranged from 0-20 points with the highest score obtaining 20 points while the lowest score obtained was 4 points. The majority fell in between the two extremes. Depending on the scores obtained, members of the sample were divided into three categories. They were as follows:

Categories of Economic status	**Range of scores**
poor	0 - 7
Average	0 - 14
Wealthy	15 - 20

Findings from the area of study reveal that there is a strong correlation between farmers economic status and their adoption of farm innovations (table 14).

TABLE 14

Economic status versus categories of Adopters

Economic status	High Adopters	Average Adopters	Low Adopters	Total
Wealthy	11	0	0	11
Average	13	4	2	19
Poor	7	17	34	58
Total	31	21	36	88

$x^2 = 44.3$ df = 4 p = .001

Since the Chi-square of 44.3 has been obtained, the null hypothesis is rejected at .001 level. Therefore, there is a significant relationship between farmer adoption rates of farm innovations and their economic status. The implication here is that the wealthy farmers have adequate sources of income which can enable them to purchase those farm implements and inputs which can improve the food production on their farms. They are also the entrepreneurs within the community. Such people are usually characterised by an element of original adaptation, a restlessness and adventurousness in search of opportunities which cannot be simply explained by the presence of exploitative resources (Morris 1981). It is therefore not surprising that often they are the innovators and early adopters of new innovations, a fact which has also been noted by Rogers and Shoemaker (1971), Chitere (1980)

and Parkins (1972). They also posses cosmopolitan characteristics. That is, they interact more frequently with outsiders, are more exposed to the mass media and usually have some form of education. 54.5% of the wealthy respondents had attained primary education, 36.4% had secondary education and 9.1% had diploma and university education.

In conclusion, this study has found that cultural attitudes and values of members of the sample did not impede their adoption of farm innovations. This is because first, they were provided with an attractive technological package which acted as an incentive for change. Two, the availability of fertile land acted as an incentive since it produced good yields. Finally, the area is accessible to two urban centres, i.e., Kisumu and Kisii, has a good communication network and a market which is frequented by three ethnic groups. This has facilitated the entrance of new ideas into the social system. Education was found to be positively correlated to adoption of farm innovations. However, the level of education attained had no influence on one's rate of adoption,possibly because at higher levels of education members were part time farmers. Finally, wealth was positively correlated to adoption rates of farm innovations.

CHAPTER 6

COMMUNICATION METHODS AND ADOPTION RATES

The question of whether farmer adoption rates are directly affected by the various forums of communication utilized by extension agents to reach the farmers has been exhaustively debated by Chitere (1980), Kimberly (1986), Schonher and Mbugua (1974), Saville (1965), Adams (1982) and Roling and Ascroft (1971), among others.

Adams (1982) and Saville (1965) believe that the communication channels (Training and visit system) which have been utilized in countries like Kenya, Sri Lanka, Thailand and other parts of the world are effective and should be continued. However, de Vries (1978), an opponent of the above view, advocates the use of the Dialogical Agricultural Extension model to rural small-scale farmers if their adoption rates of farm innovations are to increase.

In order to tackle the above dilemma, it is necessary to analyse the use and relevance of the training and visit system (T&V) in the area of study and its effects on farmer adoption rates. Special emphasis is placed on women and their access to extension services, for the simple reason that they are the cornerstone of agricultural production in the rural

areas (Pala 1980, Staudt 1977, Boserup 1980). The effectiveness of the mass media as a forum of communication is discussed. Televisions and films are not mentioned because they are not widely used by the small-scale farmers in the area of study, possibly because of lack of capital and electricity which would make their operation possible.

6.1 **The Training and Visit System**

The training and visit system (T & V) which is used by extension staff to reach small-scale farmers in Kenya was invented by Benor, a World Bank consultant in the 1970's (Adams, 1982). The system includes regular intensive training for extension workers followed by a schedule of visits to the farmers. The extension staff follow a strict schedule so that on a certain day and at a certain time every fortnight he is in a prearranged village.

Visits are focused on contact farmers, who are supposed to transmit that acquired knowledge to their neighbours. The selection of contact farmers is based on the following factors: They must be early adopters and opinion leaders who are popular and can easily transmit their ideas to their neighbours. They must be men and women of the community. They must not be too wealthy or educated, since this could create communica-

tion barriers with the rest of the farmers (Kimberly 1986). Six farmers are visited every day for the first three days of the week. The remaining two days are devoted to report writing, administrative duties and visiting farmers in group activities to disseminate the required information to a larger number of farmers. Sometimes follow-up farmers (immediate neighbours to contact farmers) are visited by staff. It is hoped that the remaining farmers will obtain information on improved farming practices from both the follow-up and contact farmers.

Emphasis is placed on close-in-field supervision of staff and strong committed leadership. Schedules of work responsibilities and training must be clearly specified at all levels. Extension work must be field oriented and very few written reports are required. Finally, staff must have realistic work-loads to enable them to perform their duties effectively.

6.1.1 **Individual Farm Visits**

During the period of investigation, the extension staff were utilising the T & V system to reach small-scale farmers. As stated earlier, there were seven frontline workers responsible for the different sub-locations. 48 contact farmers were visited fortnightly. It was also expected that if staff performed

their duties diligently, they would be able to visit at least two hundred follow-up farmers in one year. The rest of the farmers were reached by both the contact farmers, follow-up farmers and by group activities organised by the staff on a weekly basis. The rest of the time was spent on administrative matters, report writing and visits to the agricultural office based at Oboch to consult with their supervisors.

This work schedule was counter checked by the actual number of farm visits by the T.A. in each sub-location as shown in Table 15.

TABLE 15

Frequency of Farmer-agent Contact per Sub-location in the Last Year. (n=89)

Sub-location	Never		Once in Two Weeks		Once a Month		Once in Six Months		Once a Year		Tota
	n	%	n	%	n	%	n	%	n	%	n
Koguta East	8	(36.4)	4	(18.2)	2	(9.1)	6	(27.3)	2	(9.1)	22
East Kadiang'a	15	(55.6)	2	(7.4)	7	(25.9)	3	(11.1)	0	(0.0)	27
kajimbo	7	(46.6)	1	(6.4)	4	(26.7)	3	(20.1)	0	(0.0)	15
West Kadiang'a	13	(52.0)	3	(12.0)	6	(24.0)	3	(12.0)	0	(0.0)	25
Total	43	(48.4)	10	(11.2)	19	(21.3)	15	(16.7)	2	(2.2)	89(1

Table 15 indicates that the T.A.s were not visiting farmers on schedule as is required by the T & V system.

Although the majority of farmers had had individual farm visits from the T.A., only 11.2 % had been visited on schedule. The rest were visited sparingly over a period of 12 months. 48.4 % had never been visited at all.

This irregularity of farm visits could be explained by the reasons already mentioned in previous chapters like, heavy work-loads for the few staff members available, lack of adequate staff supervision, lack of adequate staff incentives and insufficient transport facilities. One T.A., who did not want to be identified by name remarked:

> ... a lot of time is wasted on travelling to the farm families. When we reach them we are often tired and hungry. We therefore deal quickly with them so as to travel back and rest. In the afternoon, we are too tired to visit farmers. At the end of the month we write lengthy and excellent reports... really exaggerated monthly reports to convince our superiors that we really work...

Of those who had contact with the T.A. the number varied considerably between male and female farmers. While 58.8 % of the female farmers had never met with the T.A., 65.5 % of the men had met the T.A. and discussed agricultural matters with him. Of 41.2 % of the women who had contact with the T.A., only 4.8 % had been visited fortnightly as required by the T & V system. The majority (47.6 %) had been visited only

once in six months. On the other hand, the majority of the men were visited both on a fortnightly (34.6 %) and on monthly basis (42.3 %). Only 19.2 % had been visited once in six months. These figures indicate that male farmers had more contact with T.A. than female farmers. One reason given by the T.A. for the prevailing state of affairs is that although more women practice farming than men, they prefer to deal with the male farmers since interacting with female farmers especially the younger ones is considered culturally inappropriate. A similar reason has been provided by Staudt (1977), Kimberly (1986) and Rothschild (1980) following their investigations on gender differences and their access to extension services.

At this juncture, it is pertinent to pose the question of whether it is necessary for the majority of rural farmers to receive individual farm visits from extension staff. Benor (1984:26) did not think so. He states:

> It is impossible to maintain regular personal contact with all farmers. In good extension work, this is neither necessary nor desirable. The message of the extension service should be focused mainly on selected contact farmers and other interested farmers. Their fields where practices recommended by the extension agents are adopted will speak for themselves and encourage other farmers to try their practices.

Benor, like Saville (1965), took into account the number of extension agents required for such an endeavour, the expense involved in staff training, the availability of extension resources like transport facilities and fuel and inputs of farm demonstrations, among others. They did not consider those factors which impede effective diffusion of agricultural information like: social stratification barriers between contact farmers and the rest; the fear of contact farmers that too many adopters will reduce the income they derive from an exclusive innovation (Schonner and Ng'ethe 1978) and the hostilities which occur between relatives and result in communication breakdowns. These factors played an important role in deterring contact farmers from effectively transmitting information to the rest in the area of study.

Investigations reveal that individual contact with the T.A. positively influence farmer adoption rates. Therefore contact farmers and follow-up farmers have an advantage over those who have never met the T.A. Table 16 shows the correlation between adoption of farm innovations versus contact with T.A.

TABLE 16

Farmer-Extension Agent Contact Versus Categories of Adopters (n=89)

	HIGH ADOPTERS	AVERAGE ADOPTERS	LOW ADOPTERS	TOTAL
VISITED	23	7	9	39
NOT VISITED	7	11	32	50
TOTAL	30	18	41	89

$x^2 = 32.7$ d.f. = 2 p = .001

Since the value of the Chi-square obtained is equal to 32.7, the null hypothesis has been rejected at the .001 level. This means that there is a positive correlation between farmer adoption rates and individual contact with the T.A. while the majority of high adopters (59 %) had been visited by the T.A., only 14 % of those who had never met the T.A. were high adopters. Most of the laggards (64 %) had never met the T.A., while 23 % of those who had met the T.A. were laggards.

From table 16 it is evident that farmer adoption rates are not dependent on their contact with the T.A. Other factors like group activities, education, wealth and so on could play an important role here. However, the innovations adopted (high yielding crop varieties - especially hybrid maize and farm mechanics like ox-plough, hoe and the panga) by the majority of those who have never met the T.A., score the least

points in the author's estimation. This is because most of the farmers inherited the use of most of the farm mechanics from their parents. Hybrid maize, on the other hand, is so widely used by most farmers that its adoption does not necessarily depend on farmer extension agent contact.

It is therefore the author's contention that farmers' contact with the T.A. is an important factor in determining farmer adoption rates. Because other sources of information (neighbours, for example) could provide conflicting messages to the recipient, the extension agent plays a dominant role in positively influencing the recipient during the innovation - decision period. Depending on his persuasive abilities, he could motivate non-adopters to become adopters or average adopters to become high adopters. Similar results have been noted by Ogum (1982), Kimberly (1986) and de Vries (1978) during their investigations on individual farm visits and farmer adoption rate in various communities. While the T & V system emphasises the use of contact farmers as the main source of diffusion, this study considers this very factor as a weakness of the system since this approach ignores the needs of rural small-scale farmers. Instead, it accentuates social stratification barriers and widens the economic inequality that already exists in the rural

areas. As Ogum (1982:187) aptly remarks, "to take contact farmers as a reference group to attract other farmers to modern agriculture will not only bear effects on equitable resource management and distribution, but retard and frustrate the efforts to set agricultural development process in motion".

6.1.2 **Group Activities as Forums of Communication**

Investigations reveal that group activities were not very effective forums of communication in the area of study. Therefore, although table 17 shows that there is a correlation between farmer attendance in group activities and their adoption rates, this correlation cannot specifically be attributed to farmer attendance in group activities.

TABLE 17

Group Attendance and Adoption of Farm Innovations

GROUP ACTIVITIES	High Yielding Seed Varieties	Improved Farming Practices	Growing Tomatoes Onions, etc.	Cash Crops	Farm Mechanics	Total
Barazas	30	15	26	13	39	123
Farm Coorperatives	19	11	13	5	22	70
Church Groups	33	13	24	10	41	121
Women Groups	8	2	7	1	11	29
Farm Demostrations	19	11	13	4	25	72
Farmer Training Centers	14	7	7	4	15	47
Total	123	59	90	37	153	462

$x^2 = 31$ d.f. = 20 p = .05

This is because first, the extension agents rarely attended these group activities. Since the T.A. are the major source of information on farm innovations, it would be logical to conclude that their absence from the various group activities would affect the extent to which discussions would be carried out by farmers on improved farming practices. Table 18 shows T.A. rate of attendance in various group activities during 1989.

TABLE 18

Distribution of farmers' Response of T.A. Attendance in Group Activities in 1989

GROUP ACTIVITIES	Every Time There is a Meeting		Quite Regularly		Seldom		Never		Not Aware		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Farm Co-operatives	2	8.30	5	20.8	11	45.8	5	20.8	1	4.3	24	
Church Groups	0	0.00	0	0.00	5	10.6	41	81.2	1	2.2	47	
Women Groups	0	0.00	0	0.00	4	28.6	9	64.3	1	7.1	14	
Barazas	1	2.2	16	35.6	22	48.6	6	13.3	0	0.00	45	
Total	3	2.3	21	16.2	42	32.3	61	46.9	3	2.3	130	100

The majority of the respondents (46.9) stated that the T.A. never attended the various group activities, 32.3 % seldom saw him and only 2.3 % were frequently visited. Church and women groups were most affected by this irregularity of visits by the T.A. In church groups 81.2 % had never been visited, while 64.3 % had never seen the T.A. in women groups. Farm cooperatives and barazas, on the other hand, had relatively more visits from the T.A. Since farm cooperatives focus on agricultural matters, little effort would be needed by the T.A. in order to attend them. Besides, the farm cooperative members would seek him out in case of need.

In barazas, T.A.s find a ready audience. They are also backed by political authority because the audience believe them to be the mouth piece of the government when they disseminate information in such a setting.

The conclusion here is that T.A.s irregularly visit those group activities which require extra effort to locate and persuade, and from which they do not obtain a ready audience. However, even those associational activities which are easily accessible and have a ready audience, T.A. visits are not as regular as is required by the T & V system. Since attendance in group activities should be arranged the last two days of every week, we would expect the T.A.s to visit the various group activities quite frequently. Table 18, however, depicts that the majority are either seldom or never visited by the T.A. at all.

Second, agricultural issues were rarely discussed in group activities. Apart from cooperatives where discussions revolved around agricultural matters, only 1.2 % of those who attended church groups, 5.8 % of those who attended women groups and 7.8 % of those who attended barazas stated that they discussed agri cultural matters in their meetings. Although a few women groups had engaged in cash crop production (sunflower, tomatoes, onions and vegetables), they had abandoned the project by the time of investigation.

They claimed that they rarely saw extension staff who could give them appropriate advice on cash crop production. So their crops hardly flourished. The majority of the women groups concentrated on income generating activities like building and managing shops, flour mills and bakeries. Church groups concentrated on church matters and offered non-economic support and advice to its members. In barazas the emphasis was on dispute settlement and administrative affairs.

Third, many farmers, especially the women, were non-members of group activities. This means that even if the T.A. regularly visited these associational activities, they would be unable to transmit the required technological information to the majority of the farmers. Since women are the main agricultural participants in the rural areas (Pala 1980 and Staudt 1977), we could conclude that the extension services provided by the T.A. through group activities are not accessible to them. Table 19 shows farmer attendance of various group activities in the past year.

TABLE 19

Rate of Farmer Attendance of Group Activities in the Past Year

GROUP ACTIVITIES	MEN				WOMEN			
	Attended		Did Not attend		Attended		Did Not Attend	
	n	%	n	%	n	%	n	%
1. Farm Co-operatives	18	20.0	23	25.6	5	5.6	44	48.8
2. Barazas	36	40.0	5	5.6	12	13.3	37	41.1
3. Church groups	18	20.0	23	25.6	28	31.0	22	24.4
4. Farmer Training Centres	15	16.7	26	28.9	3	3.3	46	51.1
5. Farm Demonst-ration	15	16.7	26	28.9	9	10.0	40	44.4
6. Women Groups	-		-		14	28.6	35	71.4
Total	102	(20.4)	103	(20.6)	71	(14.2)	224	(44.8)

Table 19 reveals that while only 20.6 % of the male farmers did not attend the various group activities, 44.8 % of the female farmers did not attend these activities in the past year. The following reasons could explain this phenomenon.

Staudt (1977) and Mbithi (1974) believe that the relatively higher rate of male attendance in barazas in comparison to that of women is because a

lot of administrative matters, dispute settlement and development issues are discussed in these meetings. Traditionally these issues have been considered as male affairs. Therefore women have shunned meetings where such matters are discussed. On the contrary, findings from the area of study reveal that 66.3 % of the respondents (both sexes) believe that women should attend barazas because that is where development issues are discussed. As one respondent aptly remarked, "the times are changing. Our women must also change with the times".

When questioned as to why they did not attend barazas, 13.3 % of the women replied that it was too far away from their homes, 63.7 % stated that they were too busy with household chores to attend, 4.8 % thought that it was time wasting and only 1.2 % regarded attending barazas as men's role and therefore none of their business.

Therefore, a more likely reason for the higher rate of male attendance in barazas is that they have more leisure time to attend barazas, especially in the afternoon, while women are occupied with other chores and are therefore too busy to attend meetings. A time allocation survey conducted for the location revealed that 93.2 % of the men were engaged in various group activities like gardening, brick making, masonry,

and so on, during morning hours. In the afternoons, they either went to group activities, visited friends or just rested. Women, on the other hand, continued to perform various chores throughout the day without rest.

More men were members of farm cooperatives because they engaged in cash crop production. There is only one farm cooperative in the area of study - South Nyakach Coffee Farmers Cooperative. All members were coffee producers and the majority were male farmers. Those women who engaged in coffee production were usually wealthy widows who possessed title deeds which they could use as collateral for loan repayment provided by Banks and farm cooperatives. Single household heads with migrant husbands represented their absent husbands in these meetings. However, they rarely contributed to the ongoing discussions. Similar findings have been presented by Meghji (1985), Staudt (1977) and Hyden (1970) when they discussed women's role in farm co-operatives and their access to credit facilities.

Even in women groups where one would expect more members, the non-members were 71.4 %. The reason provided by the women was that most of the women groups had mushroomed quite recently and they had not yet joined them. For example, in Koguta East sub-location alone, there were a total of 37 women groups, but only

17 groups were active. This mushrooming of groups could have arisen from the fact that a few women groups, like Kawuonda Women Group, are quite successful in their business endeavours and this could have prompted other women to start various group activities. It could also be because of the intense attention which has been directed towards women's development programmes in recent years by both government and non-governmental organizations. Development planners have realised that to incorporate women into development programmes is to improve the overall economic development of the country (Staudt 1977; Kimberly 1986; Pala 1980). Therefore the Kanu Maendeleo - ya - Wanawake women representatives have liaised with the DDC to provide information on various issues of development to the active women's groups once a week (this is done every Saturday in Koguta East). This, therefore, would act as an incentive for those women who have not started group activities to start them.

The majority of the women groups were inactive because of various factors like mismanagement of funds by their leaders, squabbling among group members and irregular attendance by members because they were too busy with household chores. Therefore non-members far outweigh active members. The implication here is that any benefits obtained by active women groups are inac-

cessible to non-members who constitute the majority.

Attendance in Farmers Training Centres was minimal. Various reasons could explain this state of affairs. FTC courses are usually organized by the District Agricultural Officers (D.A.O) or through course bids by anyone willing to operate a course at the FTC and defray the expenses. Selection of the participants is left solely at the discretion of the T.A., who selects them on the basis of several criteria. Those chosen should not have attended FTC classes before. They must be early adopters and they must be members of the community. Investigations reveal that these criteria were often not strictly followed by T.A. They sometimes chose those farmers they had cordial relationships with more than once. Since they were usually in contact with contact farmers, it is logical to assume that contact farmers benefited from FTC courses more than the other farmers whom the T.A. did not even know.

Besides, farmer attendance in FTCs was a rare phenomenon. Farmer rate of attendance is scattered over a period of 40 years from the colonial era to 1989. Table 20 shows the distribution of farmer attendance of FTCs during this period.

TABLE 20

Farmer Attendance in FTC Courses From 1947 - 1989.

Year	n	%
1947	1	1.15
1950	1	1.15
1965	1	1.15
1969	1	1.15
1973	4	4.60
1975	1	1.15
1981	2	2.30
1987	1	1.15
1989	3	3.45
Did not Attend	71	81.61
Total	87	100.00

Table 20 reveals that the total average number of farmers who have attended FTC courses in the last 40 years is 1.7.

This rate of attendance could be explained by the fact that the FTC is too far away from the area of study. There is only one FTC in Kisumu District - Maseno FTC and it is 80 Km away. Ideally, the farmer should be collected from collection points by the FTC bus. Usually the bus does not arrive as scheduled according to one T.A. Those who travel at their own

expense are rarely reimbursed by the Ministry of Agriculture. Sometimes FTC courses are organized and the farmers notified, then at the last minute the D.A.O's office cancels the trip until further notice. This type of action demoralizes both the farmers and the T.A.s who put a lot of time and effort in making arrangements for farmer attendance in these courses.

For the female farmers FTC courses are almost inaccessible. This is because, as had been noted earlier, the T.A. rarely interacts with them. All the three women who had attended FTC courses were well established farmers who were fairly well educated. Two were primary school teachers with form II level of education while the third one had attained form IV education. They engaged in cash crop production activities and were contact farmers. One can, therefore, see that their socio-economic status influenced the T.A. in considering them as FTC candidates. Obviously, those women who did not possess the above characteristics had little chance of being chosen to attend FTCs. Second, since it is a requirement that farmers spend at least one week in FTCs, women would have to make arrangements for their domestic and agricultural activities to be carried out by others while they are away. This would act as a deterring factor to their attendance of FTCs.

And, finally, both men and women rarely attended farm demonstrations, firstly because it was rarely organized by the T.A. in the area of study. Investigations reveal that 60 % of the T.A.s had not organized a farm demonstration in the last six months, 20 % had organized it once and 20 % had organized it twice during this period. Besides, the place of demonstration was usually not adequately publicised when it was organized. As a result, most farmers learnt of the occasion when it was over.

Secondly, farm demonstrations are often done on the farms of contact farmers. As had been mentioned earlier, social stratification barriers prevent contact farmers from freely interacting with the rest of the farmers. Some farmers therefore use this factor as an excuse for not attending farm demonstrations.

Finally, the farmers complained that they were rarely involved in the planning and implementation of the demonstrations. These demonstrations were often done to impress politicians or high level officers who had come to check on the staff's progress.

In conclusion, it is submitted that group activities in the area of study have not been effective channels of communication. This is because the T.A.s who are supposed to transmit information to the farmers

rarely attend these activities. Since agricultural matters are seldom discussed in these activities, it is logical to assume that their influence on farmer adoption rates of innovations is not very significant. Second, the farmers themselves, especially women, rarely attend these activities. Since they are the cornerstone of agricultural production in the rural areas, it could be concluded that the information provided by both the T.A. and the group members on improved farm practices is inaccessible to the majority of the farmers. The T & V system did not make provisions for those obstacles which would prevent effective utilization of group activities as forums of communication. Unless this is done, group activities will continue to be ineffective and their use by the T.A. will not significantly affect farmer adoption rates.

6.2 The Mass Media

Investigations reveal that there is no correlation between farmer adoption rates and their exposure to mass media sources (radios and reading material - daily newspapers, pamphlets and weekly magazines). Table 21 shows the relationship between the two variables.

TABLE 21

Exposure to Mass Media versus Adoption of Farm Innovation

Category of Farm Innovations	Listening to Radio Programmes	Those Who Read various Types of Material	Tota
1. High Yielding Crop Varieties	44	26	70
2. Improved farming Practices	23	14	37
3. Growing Tomatoes	31	18	49
4. Cash Crops	15	11	26
5. Farm Mechanics	49	27	76
Total	162	96	258

$x^2 = 0.027$, df = 4, p = .99

Since the actual value of the Chi-square is 0.027, the null hypothesis is proved at .99 level. Thus there is no correlation between the two variables.

Although the majority of farmers (61.1 %) stated that they owned radio sets and listened to radio programmes, only 30 % of the men and 10 % of the women listened to agricultural programmes. When they were questioned on what agricultural programmes they listened to, 83.2 % replied that they did not know. Further probing was done by mentioning some of the agricultural programmes broadcast on radio, like Young Farmers, Wellcome Kenya Limited, Focus on Rural Devel-

opment and Kwenu Wakulima. Most respondents stated that they knew and listened to the above programmes but they were unaware of the times they were broadcast. To counter-check on whether they listened to the mentioned programmes they were asked to state what times they listened to the radio. Their response is in Table 22.

TABLE 22

Distribution of the Times Farmers Listened to Radios programmes

Time	n	%
Morning	9	16.4
Afternoon	6	10.9
Evening	33	60.0
All of the Above	7	12.7
Total	55	100.00

Most of the above programmes are broadcast either in the morning or afternoon. very few are broadcast during the evening period. Wellcome Kenya Ltd. is broadcast on Saturday afternoons from 2.00 - 3.00 p.m. Young Farmer is broadcast on Fridays at 5.45 p.m. Kwenu Wakulima is broadcast on Wednesdays at 10.15 a.m. and, finally, Focus on rural Development is broadcast on Fridays at 7.45 p.m. The implication here is that since most of the farmers (60 %) listen to the radio in the evening

after work, they rarely listen to those agricultural programmes which are broadcast either in the morning or during the afternoon. This is because during the morning hours, most farmers are engaged in various activities away from home which prevents them from listening to the radio. In the afternoons many farmers either attend group activities or visit friends. Finally, for the women farmers, listening to the radios in the evening is almost impossible since they are busy preparing the evening meal during that period. Of those who do not listen to the radio, 2.3 % stated they were too tired after work, 1.2 % considered listening to the radio as boring, 2.3 % were too busy and 38.9 % had no radios. Since most farmers do not listen to agricultural programmes it is logical to assume that the radio as a source of information, does not significantly affect farmer adoption rates.

The number of farmers who read newspapers, pamphlets, weekly magazines and books was even less than that of those who listened to radio programmes. Only 35.7 % of the farmers read various types of material, while 60 % did not read anything. Of those who read newspapers, 80 % were men while 20 % were women. Table 23 shows the distribution of farmers who read various types of material.

TABLE 23

Distribution of Farmers Who Read Various Types of Materia

Reading Material	Daily		A Few Times a Week		A few Times a Month		Seldom	
	n	%	n	%	n	%	n	
1. Daily Newspapers	9	(30)	4	(13.3)	2	(6.7)	15	(5
2. Weekly Magazines	0	(0.00)	1	(3.3)	4	(13.3)	25	(83
3. Books and Pamphlets	0	(0.00)	0	(0.00)	1	(3.3)	29	(96
Total	9	(10)	5	(5.6)	7	(7.8)	69	(76

The above table illustrates that the majority (76.6 %) seldom read any form of material. One could, therefore, conclude that any information on agricultural practices provided as reading material would be inaccessible to them.

Illiteracy could be a major contributing factor for the lack of exposure to reading materials by the respondents. 51.9 % of the respondents were illiterate. Other reasons could be lack of access to reading materials like daily newspapers. The nearest market centre (Sondu) where newspapers are obtained is about 12 Kilometres away from the majority of the respondents. This could prevent them from obtaining newspapers on a daily basis. Lack of funds for buying newspapers

is another factor, while some farmers could be too busy to spare time for reading. Finally, one could also point out that in the Kenyan society the role of reading for its own sake is a foreign phenomenon (Liyai 1988). In the rural areas where reading materials are scarce, the problem would be compounded. Therefore, the majority of people would prefer to engage in other activities rather than read to expand their knowledge on various issues.

It is, therefore, not surprising that the mass media as a source of communication was ineffective in the area of study. These findings are in sharp contrast to those of Ogum (1982) who stated that the farmers in Torit district, Western Sudan, owned radio sets and listened to radio programmes. The mass media therefore positively influenced their adoption rates of innovations. The above investigations, however, tally with those of Roling and Ascroft (1971) on their discussions on the problems of mass media sources and their effect on farmer adoption rates.

In conclusion, this chapter has dwelt on the effectiveness of the T & V system as a communication channel. To this end individual farm visits and group activities have been discussed. Findings from the area of study reveal that individual farm visits are only effective if the T.A. visit farmers as scheduled. This

has not been the case in the area of study where various obstacles like the long distances covered by the T.A., too few extension staff for the heavy work-load, lack of adequate incentives and lack of adequate staff supervision have prevented the T.A. from effectively performing their duties. Secondly, the author considers it a weakness on the part of the T & V system to emphasize the use of contact farmers as sources of diffusion. This is because factors like class stratification barriers prevent adequate communication between contact farmers and the rest. This prevents the majority of the farmers from having access to extension services.

Group activities are ineffective as channels of communication because the T.A.s who are the main source of agricultural information rarely attend them. Second, agricultural matters are rarely discussed in group activities. Third, the farmers themselves, especially women, who are the cornerstone of agricultural production in the rural areas, rarely attend associational activities. This means that the extension services provided through group activities are inaccessible to them.

And, finally, the mass media is not effective as a forum of communication because most farmers do not listen to radio programmes. Even those who do so,

rarely listen to agricultural programmes. Many farmers do not read newspapers either because they are illiterate or because they lack proximity to the areas where reading materials are obtainable.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

Summary of Research Findings.

The purpose of this study was to analyse the role of the extension agents in effecting change in the agricultural sector in the area of study. The overriding problem identified is that the adoption rate of innovations by rural small-scale farmers is quite low. This is a major source of concern to development planners who believe that self sufficiency in food production in the rural areas can only occur if farmers adopt farm innovations. This study, therefore, addressed itself to the question of those factors which have affected farmer adoption rates of farm innovations.

Findings reveal that organisational issues within the Extension Service such as heavy work-loads for the available small number of staff members, lack of adequate staff incentives, insufficient transport facilities, inadequate staff supervision and staff elitism prevent extension staff from effectively performing their duties in their areas of operation. This affects farmer adoption of farm innovations.

Second, while the Training and Visit system emphasized the use of contact farmers as the main

source of diffusion of innovations, this study considers this very factor as a weakness because it contributed to increased class differentiation between contact farmers and marginal farmers within the area of study. Since it has been determined that individual contact with the T.A. positively influences farmer adoption rates, it is concluded that contact farmers and follow-up farmers have an advantage over the majority of the farmers who have never met the T.A.

Third, group activities are ineffective as forums of communication because the T.A. who are the main source of agricultural information rarely attend them. This implies that very little discussion on improved farming practices is done in these group activities. Besides, the majority of the farmers especially women who are the cornerstone of agricultural production, rarely attend them. This implies that information on innovations transmitted through group activities is inaccessible to them. Findings also reveal that the majority of the farmers are not adequately exposed to mass media sources for it to significantly affect their adoption rates. Many farmers do not own radios. Those who do rarely listen to agricultural programmes. The majority of the farmers are illiterate and therefore cannot read newspapers. Those who can, do not obtain newspapers on

a regular basis because they lack proximity to those areas where reading materials are obtained. The conclusion drawn from the above findings is that the communication channels utilised by extension staff to reach the farmers are defective. This could have contributed to the lack of adequate adoption of farm innovations by small-scale farmers.

Of special significance is the fact that this study deviates from the traditional anthropological studies which consider cultural attitudes and beliefs of various African communities as obstacles to the process of social change and development. The author concludes that if people are provided with incentives they can adopt new attitudes, values and motives that can promote development. They are, therefore, only constrained by their access to factors of production, market and by risk. For members of the sample, these incentives were provided in the form of an attractive technological package which positively influenced their adoption rates. Second, fertile land was available. It acted as an incentive for those who had obtained good yields from improved farming methods. Third, their proximity to two urban centres and a market which is frequented by the Abagusii and Kipsigis influenced them to view changes as a positive phenomenon.

Finally, it has been found that wealth and education are positively correlated to adoption of innovations. Although the two variables are not some of the criteria for visits by the T.A, it seemed as if these two factors played a certain role in determining whether the farmers had access to extension services or not. This conclusion was arrived at because all members of the sample from wealthy households had had individual visits from the T.A, while the majority of those who had some level of education had also been visited by the T.A.

Policy Recommendations

The low morale and apathy experienced by extension staff can only be eliminated if remedies are obtained for the problems that plague not only the Extension Service but the Civil Service as a whole. In-spite of the fact that the T&V system recommends that extension services can only be effectively and efficiently run through the bureaucratic process, this does not seem to be applicable in Kenya where the civil service is plagued by malpractices arising from "unregulated participation in private interests, poor deployment, inefficient utilization of personnel and inadequate system of incentives" (Ramtu 1985).

It has sometimes been the case that at senior levels those who are employed in administrative posts do not possess the management skills required for the efficient dispensation of their duties. It is therefore imperative that at the higher echelons priority be given to professional management skills when assessing training needs. To attain efficiency and discipline civil servants must be dedicated to their jobs. This can only occur if effective incentives are provided to attract, retain and motivate staff members. Therefore, appropriate career prospects, schemes of service and attractive pay packets should be provided to encourage a conducive atmosphere for better work performance. The author concurs with the Ramtu Report (1985) in urging the Government to see to it that staff remuneration is reviewed every two years to enable civil servants to cope with the high cost of living.

It is also important that social amenities which can make rural life more comfortable are provided by the Government. One of the main objectives of the District Focus for Rural Development Programme (1984) is to see to it that these social amenities are provided in the rural areas. Development planners have therefore embarked on a rural electrification programme, an improvement of rural water supplies, a good

communication network and there are plans to improve rural industries (Moi 1986). It is hoped that this rural industrial policy will facilitate the multiplication of reactional amenities and improve the purchasing power of the rural folk. If this objective is realised, then the rural areas will attract and retain those civil servants whose duties directly relate to rural development programmes.

To facilitate the process of staff supervision at the grassroots level, logbooks should be kept by farmers to enable them to note details about the days and times of T.A. visits and the discussions which ensue on these occasions. This would enable the DAAO and LAEO to counter-check on the T.A. work performance. It would also enable the farmers to act as pressure groups since they would be participating in those aspects of extension services that directly affect them.

It is also important for the extension agents to have adequate knowledge of the social organisation and structures of those communities among whom they work. They should also be flexible in their application of the recommended agricultural practices and in their utilization of the methods used for disseminating this information. If they are working in an area where group activities are not frequented by the local

populace, it would be necessary to identify those situations where group activities are encouraged and utilise them. For example, in the area of study, dissemination of information on improved farming practices is best done during periods of planting, weeding, and harvesting when labour groups composed of Jokakwaro often work collectively. We should, however, not forget the fact that because of the penetration by the market economy into peasant modes of production, some individuals have acquired capitalistic tendencies. They, therefore, no longer find it necessary to engage in collective activity. Instead, they hire paid labour and organise their agricultural activities on an individual basis. However, for the majority, collective activity in farm operations is still the only way which enables them to perform most of their agricultural activities on time. It would, therefore, be to the Government's advantage if extension staff utilised Jokakwaro group activities to disseminate agricutural information. Funerals, marriage ceremonies and other social occassions could be used to announce where the next farm demonstration, group meetings and other corporate activities could be held.

It was mentioned in chapter 5 that farmers do not listen to radio programmes because they are broad-

cast when they are performing various activities away from home. Therefore, extension agents should be able to identify appropriate times when farmers can listen to these programmes. This study suggests that extension staff should coordinate with those who are involved in adult literacy programmes so that agricultural programmes can be listened to by the farmers during literacy classes. Extension staff should also inform the farmers of the times agricultural programmes are broadcast and encourage them to carry their radios and listen to the relevant programmes when they are performing their daily activities.

Illiteracy is a major obstacle to the farmers. It is therefore imperative that indigenous media like songs, dance and drama are used to transmit information about agricultural innovations. This can be done during corporate group activities like house building, farm operations, hunting and sporting activities.

It must also be recognised that in the absence of non-hired labour many farmers are overworked. In most cases they use crude hand tools and implements which waste energy and increase man-hours to prepare seed beds, plant, weed and harvest (Ateng 1980). The women farmers who have to perform other chores such as cooking, fetching water and child rearing are too busy to find enough time to devote to improved farming

activities. Therefore, if the small-scale farmer is to become more productive, labour saving farm innovations should be developed. (Ateng 1980) remarks of the situation "he must have tools which permit him to do his work more effectively, not just to save labour, but to do more work with greater accuracy, speed and ease". This would facilitate the process of adoption of farm innovations.

It was mentioned in Chapter 5 that financial constraints prevented the majority of farmers from adopting farm innovations. It was also mentioned that only 31% of the land potentially available for small holder registration within Kisumu District is registered. This implies that most of the small-scale farmers do not have access to loan facilities. The Government should therefore find ways and means of providing loans at concessional rates of interest to enable the farmers to adopt those farm innovations that would increase food production on their farms.

Since the slow pace of economic growth and rising debt service charges have had a serious impact on the ability of the Government to finance the basic services provided by ministries (Kisumu District Development Plan 1984), substantial financial support from non-governmental organisations in forms of grants and

loans is a necessity. Special attention should be paid to the marginal farmers who are unable to offer security in terms of tangible assets in order to obtain loans. Most female farmers fall within this category. Therefore, feasibility studies on the needs and problems of these farmers would provide useful guidelines for the implementation of the programmes which could assist them in getting easy access to credit facilities. For example, short-term loans could be provided to women farmers who are members of group activities. These group activities must have some savings which can be held as security by the lending agency. The borrower's credibility is vouched for by the group members. Failure of any member to repay their loans would result in the loss of the group's savings to the lending agency. This fact would ensure that the loans are repaid on time.

Loans could also be provided to the farmers not on the basis of whether they own a title deed, but their eligibility would be determined on the basis of the size of holdings they cultivate and the crops they grow. To ensure that the loan is repaid, there must be adequate and efficient supervision and control by the lending agency over the sale of the crops. This would enable them to know how much crop was sold and whether because of adverse circumstances

like bad weather, the farmer obtained poor yields and therefore requires more time to repay the loan.

Those farmers who have not obtained their title deeds should be encouraged to do so through mass education. This can be done by extension staff during group activities and individual farm visits. The information can also be disseminated through the mass media.

Finally, since all farmers are entitled to extension services irrespective of their sex, it is imperative that development planners also involve female farmers in extension services to attain self sufficiency in food production in the rural areas. Since it is culturally inappropriate for male extension agents to communicate with female farmers in the area, more female staff should be employed to deal with female farmers. The aim is not to segregate service structures within the extension service. It only ensures that women are sufficiently exposed to the benefits of extension services. This awareness would facilitate their acceptance of male extension staff when they eventually come into contact with them. Furthermore, the attitude of male staff members and the rest of the community should also be changed through mass education. This will enable the male extension

service workers to communicate effectively with female farmers without being misunderstood by the wider community.

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APPENDIX: SAMPLE OF THE QUESTIONNAIRE SCHEDULE

1. Farmer's name

2. Sex ..... Male ☐ (i) Age

   Female ☐ (ii) Sub-Location

   (iii) Village

3. Are you a Christian ? Yes ☐ No ☐

4. If yes, what is your denomination ?

5. Marital status

   1. Single
   2. Married (Monogamous)
   3. Married (Polygamous)
   4. Widowed
   5. Divorced/Separated

6. What level did you reach in school?

7. Are you able to read and write any of the following language?

Luo	Yes ☐	No ☐
English	Yes ☐	No ☐
Swahili	Yes ☐	No ☐

(Tick where appropriate)

NOT LITERATE	LITERATE IN LUO LANGUAGE	LITERATE IN LUO AND KISWAHILI	LITERATE IN LUO KISWAHILI AND ENGLISH	LITERATE IN KISWAHILI	LITERATE IN ENGLISH
1	2	3	4	5	6

QUESTIONNAIRE TO ESTABLISH COMMUNICATION CHANNELS USED BY FARMERS

8. Do you own a radio ?

Yes ☐ No ☐

(b) If not, Why ?

1.

2.

3.

9. Do you ever read newspapers ?

Yes ☐ No ☐

10 How often do you read the following newspapers ?

		Daily or almost	A few times a week	A few times a month	Seldom	Never
1.	Daily Newspapers	4	3	2	1	0
2.	Weekly Magazines	4	3	2	1	0
3.	Listening to Radio	4	3	2	1	0
4.	Any other information (Specify)	4	3	2	1	0

11. Have you ever read anything concerning agriculture in the newspapers ?

Yes ☐ No ☐

12. Which programmes do you like listening to on the radio ?

1. Agricultural shows (ASK)
2. Programme of Welcome Kenya Limited
3. Young Farmers
4. Focus on rural development
5. Kwenu Wakulima

13. At what times do this programmes occur ?

1.
2.
3.

14. At what time do you listen to the radio ? (Tick where appropriate)

1. Morning
2. Afternoon
3. Evening

15. If you don't listen to the radio, state some of the reasons why you don't

1.
2.
3.
4.

LEVEL OF ATTENDANCE IN BARAZAS

16. Do you attend Barazas ?

Yes No ☐

17. If you do not, Why ?

1.

2.

3.

18. How frequently do you attend Barazas ? (Tick where appropriate

Attendance in Barazas	Every time there is a meeting	quite often	Seldom	Never
	3	2	1	0

19. What sort of people attend these meetings ?

1.

2.

3

4.

20. What do they talk about

1.

2.

3.

4.

21. Do extension officers also attend these meetings ?

22. How often do they attend ? (Tick where appropriate)

Every time there is a meeting	frequently	occassionally	Never

23 Do they ever address people in these meetings ?

Yes ☐ No ☐

24. If yes, what do they usually talk about ?

1.

2.

3.

25. Do women also attend these meetings ?

Yes ☐ No ☐

26. If not, why don't they ?

1.

2.

3.

4.

27. If yes, do they ever talk in these meetings ?

Yes ☐ No ☐

28. What sort of women talk in these meetings ?

1. Any woman
2. Only women with official status
3. Old women
4. Others

29. What do they usually talk about ?

1.
2.

30 How do you feel about women attending Barazas ?

THE ROLE OF COMMUNITY GROUPS AS A COMMUNICATION CHANNEL

31. Are you a member of the following groups

1. A farm co-operative in the area
2. Church group
3. Women group

32. What do you usually discuss in:-

1. farm co-operative in the area
   a.
   b
   c.
2. Church groups
   a.
   b
   c.

3. Women's groups a

b

c.

33. Do extension officers attend these group meetings ?

Yes ☐ No ☐

34 What do they talk about when they attend these meetings ?

1.

2.

3.

35. How frequently do they attend meetings in

(A) Farm co-operatives

1. Every time there is a meeting
2. Quite frequently
3. Seldom
4. Never

(B) Church groups

1. Every time there is a meeting
2. Quite frequently
3. Seldom
4. Never

(C) Women's groups

1. Every time
2. quite frequetnly
3. Seldom
4. Never

36. Are you able to practice what they advice you to do ?

Yes ☐ No ☐

37. If not, Why ?

1.
2.
3.

QUESTIONNAIRE TO ESTABLISH FREQUENCY OF CONTACT BETWEEN FARMERS AND EXTENSION OFFICERS

38. Are there Government agricultural agents who work in this sub-location ?

39. Have you ever met him ?

Yes ☐ No ☐

40 If yes, where?

41. When did you last talk to an agricultural extension agent ?

1. A week ago
2. two weeks ago
3. a month ago
4. several months ago
5. Never

42. Do they work with most farmers in this sub—location ?

Yes ☐ No ☐

43. Who does he mainly work with within this sub—location ?

1. Big farmers
2. Every one
3. Small farmers

44. Why do you think so ?

45. Have you ever attended a course in a Farmer Training Centre ?

Yes ☐ No ☐

46. What types of courses were they ? (tick)

1. General agriculture (cultivating many crops)
2. One type of crop
3. animal husbandry
4. Home economics (care of home and family)
5. Co—operative management
6. Crop storage
7. Other courses

47. How many times have you attended these courses ?

1. Never
2. Once
3. twice
4. three times
5. Four times
6.
7.

48. When did you last attend a course .....year

49. Did you learn anything in the farmer training centre which was helpful to you ?

Yes ☐ No ☐

50. If yes, state them

1.

2.

51. How far away is the farmer training centre you attended ?

52. How did you get there ?

1. on foot
2. by bicycle
3. vehicle provided by the Ministry

53. What were your feelings about the farmer training centres ?

1.

2.

3.

54. Do you think women should attend these training centres ?

Yes ☐ No ☐

55. If not why ?

1.

2.

3.

56. Have you ever attended demonstrations by the Ministry of Agriculture about cultivation of crops ?

57. How many times have you gone to a demonstration in the last twelve months ?

1. Once
2. twice
3. three times

58. What types of farm demonstrations have you attended ?

	Type of Demonstration	Year held
1.		–
2.		–
3.		–

59. Tell me your opinion of the local agricultural extension officer

Extension Officer	Usually available	gives good advice	Never available	has no time for farmers like me	I do not Know
	4	3	2	1	0

QUESTIONNAIRE CONCERNING FARMER'S SOCIO-CULTURAL VALUES AND HIS ATTITUDES TOWARDS ADOPTION OF INNOVATIONS

63. Tell me about:

    a) who owns the land in this homestead

    b) position of the woman as concerns land ownership

    c) How land is allocated in a polygamous home

    d) what happens to land allocation when the head of the household dies

64. From where do you obtain labour during farm operations ?

60. How many hectares of land do you have ?

61. What types of crops do you plant ?

    1.

    2.

    3.

    4.

62. What seasons of the Year do you plant, weed and harvest your crops ?

65. What methods do you use to plant

    1. maize .....

       .....

       .....

    2. Sorghum 1

                    2

                    3

3. Other.....1

2

3

66. From whom do you learn these methods ?

1 Village chief

2. Religious leaders

3. other people (specify)

4. our fathers

67. What are your cultural beliefs concerning ?

1. Preparation of land

2. planting

3. weeding

4. Harvesting

68. What taboos do you observe during

1. preparation of land/planting

2. weeding

3. harvesting

69. Have you ever adopted the following:

1. high yielding crop varieties

(Katumani, hybrid etc.)

2. Improved farming practises

(crop rotation, soil levelling etc.)

3. growing totmatoes, onions, carrots, cabbages etc.

4. cash crops (coffee, sunflower etc.)

70. Which of the following farm mechanics do you own, rent or hire ? (tick and fill in the blanks)

Range of farm mechanics	Year of adoption
1. owning tractor	19.....
2. hiring tractor	19.....
3. owning ox plough	19.....
4. hiring ox plough	19.....

71. If you haven't adopted, why ?

1.

2.

3.

72. If you did adopt them, who advised you to adopt them ?

73. For each of the following questions, tell me whether

(a) you agree very much (b) agree (c) disagree (d) strongly disagree (e) not applicable

	strongly agree	agree	disa-gree	strongly disagree	not app-licable
a. It is better to grow the traditional varieties of maize rather than take a chance on an unknown new variety even though it yield more	4	3	2	1	0
b. If a person is to get ahead in farming they must be prepared to take chances	4	3	2	1	0
c. The way my father farmed is better than any govern-ment agent can tell me	4	3	2	1	0
d. Government extension agents are not trusted	4	3	2	1	0
e. New farming ideas are only suitable for wealthy farmers but not for small poor farmers	4	3	2	1	0
f. New ideas are not tried by villages because: (i) they are too costly	4	3	2	1	0
(ii) farmers who have tried them have never succeeded	4	3	2	1	0
(iii) No body has told me about them	4	3	2	1	0
g. Success in farming is more depended on God's will than on the efforts of man	4	3	2	1	0
h. New varieties of farming are better than old ones	4	3	2	1	0
i. Farming is changing in this area I think I should also change the way I farm	4	3	2	1	0

QUESTIONNAIRE TO ESTABLISH A FARMER'S WEALTH

74. What is your main occupation ?

75 What other occupations do you have ?

1.

2.

3.

76. How many wives and children do you have ?

77. Tick if your house is made of the following:-

Roof			Floor		Walls		
Zinc	thatched	Tins	cement	Earth	stones	bricks	mud

78. Which of the following household materials do you possess ?

1. Radio	4. Car	7. Bicycle
2. Bicycle	5. Fridge	8. Folks and spoons
3. Sofa set chairs	6. Jiko	9. Television

79. Tell me how many types of animals you have of the following:

a. Grade cattle

b. Native cattle

c. Sheep and goats

QUESTIONNAIRE FOR EXTENSION STAFF

80. Official grade

81. Age

82. Tribe

83. Sex .... Male / Female

84. Where do you come from ?

85. Where do you live? (mention whether it is in the sub-location or not)

86. Do you speak the local Language ?

Yes ☐ No ☐

87. How many years of schooling did you complete ? Tick where appropriate).

Primary	Secondary	University
STD I – 4	Form I– IV	
STD 4 – 7	Form V– VI	

88. How many years of agricultural training did you receive ?

1. One
2. Two
3. Three
4. More than three years

89. How many farmers are there in the area for which you are responsible?

90. How do you contact them ? (tick appropriate answer)

1. By visiting them.
2. They visit or contact me
3. By organizing group demo—nstrations
4. In farmer training centres
5. In Barazas
6. Church groups
7. Women groups
8. Other venues

91. Which of the following types of farmers do you frequently visit?

1. Big farmers
2. Every one
3. Small farmers

92. If you only visit particular type of farmers, why do you do so?

1.
2.
3.
4.

93. How frequently do you visit the farmers ?

1. In a week
2. In a month
3. In two months
4. In more than three months

94. How many hours do you spend with the farmers ?

95. What do you do with the remaining amount of time ?

1.

2.

3.

4.

96. Estimate as accurately as possible how often you did the following in this sublocation during the past six months:

(A) You organized a demonstration

1. never
2. once
3. twice
4. More than three times.

(B) You organized a meeting to discuss agricultural topics

1. never
2. once
3. twice
4. three times
5. more than three times

(C) You attended a meeting organized by someone else and gave agricultural advice. Such meetings could be

1. Church groups
2. Co—operative
3. Barazas
4. Women groups
5. Others

(Tick where appropriate)

1. never
2. Once
3. twice
4. more than twice

(D) You distributed written extension materials

1. never
2. once
3. twice
4. more than three times

(b) in what language

1. English
2. Luo
3. Kiswahili

97. Do you also visit women farmers ?

Yes ☐ No ☐

98. If yes, how often

1. in a week
2. in a month
3. in two months
4. in three months

99. Do you visit

1. all women farmers
2. big women farmers
3. small women farmers

100. Why do you visit a particular category of women

101 Do you encounter any problems in your contact with women farmers ?

Yes ☐ No ☐

102 Where do you contact women Farmers ? (Tick)

1. on their farms
2. in women groups
3. Church groups
4. Barazas
5. Co-operatives
6. Other avenues

103 Tell me what you feel about the attitude of women farmers towards the adoption of new practises in comparison to male farmers.

104. It is known that farmers sometimes do not adopt farming practices recommended to them. What do you think are some of the important reasons why they sometimes fial to follow recommendations ?

1.

2.

3.

105 What action do you take to make sure that they practise what you advice ?

106 Are you usually successful ?

Yes ☐ No ☐

107. If not, why ?

1.

2.

3.

108. What means of transport do you use when visiting the farmers?

(tick where appropriate)

109 How do you obtain this transport ?

110 What are the biggest problems you face as an extension agent ?

1.

2.

3.

4.

111. How do you feel about your salary compared to others with about the same amount of training and experience ?

1. lower
2. about the same
3. higher
4.

112 Do you feel that your salary is adequate for the training and amount of work you do ?

Yes ☐ No ☐

(B) If not, why ?

1.

2.

3.

113. When was the last time you received a job related training ?..... year,

What type of training was it ?

1. a seminar of one week or less
2. a seminar of more than one week
3. a short course.

114 How many times have you received this type of training ?

1. once
2. twice
3. three times

115. What benefits do you obtain from this training ?

1.
2.
3.

116 What is the procedure for obtaining promotions ?

1.
2.
3.

117 Have you ever received a promotion ?

Yes ☐ No ☐

118 If yes, state the number of times and year

1. once 19...
2. twice 19...
3. three times 19...
4. more than three times 19...

119. Do you feel that you are due for promotion ?

120. What do you think are the reasons why you haven't got one ?

1.

2.

3.

121. Could you tell me how the extension services is organized

123. Can you make any decisions concerning your daily activities which directly affect the farmers, without prior consultation with your supervisors ? (tick concerning:)

1. transport to use while on duty
2. appropriate farming practises for different types of farmers
3. financial transactions for daily activities like fuel and written materials.
4. Other matters.

124. What criteria do you use to choose those farmers who should attend farmer training centres ?

1.

2.

3.

125. How often do you choose them ?

1. once a month
2. once in two months
3. once in six months

126. Do you include women farmers in your choice ?

Yes ☐ No ☐

127. Tell me the problems you encounter in organizing the trips to FTC's for farmers,

1.
2.
3.

128. In the columns below please rate farmers characteristics in your area of operation.

Characteristics	Excellent	Good	Fair	Poor	Don't know
1. farming reputation	4	3	2	1	0
2.Rate of adoption of agricultural innovation	4	3	2	1	0
3. Flexibility to change	4	3	2	1	0
4. Consultation with extension agent	4	3	2	1	0
5. Desire for agricultural training	4	3	2	1	0
6. Attendance at agr. meetings	4	3	2	1	0
7. General co-operation with extension agents	4	3	2	1	0
8. Willingness to attend agricultural courses	4	3	2	1	0