ASSESSMENT OF PRIVATE AGRICULTURAL EXTENSION ACTIVITIES IN TOBACCO PRODUCTION: THE CASE OF ASSOCIATION OF TANZANIA TOBACCO TRADERS IN NZEGA DISTRICT

BY

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ABSTRACT

In recent times, the government has been inclined towards private agricultural extension providers to supplement public extension delivery. However, so far very little has been done to evaluate their activities and performance. This study therefore sought to assess the Association of Tanzania Tobacco Traders Limited (ATTTL) agricultural extension activities to determine the extent to which they are cost- effective and client-oriented. The specific objectives were: to study the approach employed by ATTTL in extension activities; to assess the organisational and financial sustainability of the agricultural extension activities of ATTTL; to assess the efficiency and effectiveness of the agricultural extension activities undertaken by ATTTL; to determine farmer's attitudes on the agricultural extension activities provided by ATTTL and to assess the impact of the agricultural extension activities of ATTTL. Questionnaires were used to collect information from respondents. Observations and informal discussions with villagers, farmers groups and co-operatives were used to supplement the data obtained from interviews. Formal discussions were also held with ATTTL officials and District and Regional agricultural/extension personnel to get additional information. The study noted that the approach undertaken by ATTTL is superior to that of public extension. ATTTL staff coverage, positive attitudes of extension staff, links with other organisations, and the effect on production show that the activities are efficient and effective. ATTTL has managed to sustain its agricultural extension activities but farmers groups and co-operatives have not been able to achieve such a situation. Farmers have shown positive attitudes on the reliability of inputs, on Integrated Pest Management (IPM) programme and compatibility of advice but have shown negative attitudes towards marketing and

environmental conservation. ATTTL agricultural extension activities have shown positive impact on income and skills of farmers. Recommendations of the study were: private providers should use mass media to back-up the other extension methods, and training programs should be designed in such a way that all farmers are covered. Private sector should train their staff at various levels at the same time management, financial and community development skills should be taught to both leaders of villages, farmer groups and co-operatives. Enabling environment should be created for farmers to participate in environment conservation and institute law enforcement where necessary. Institutional arrangements which favour transparency, are necessary for marketing tobacco. Extension officers should devote more of their time to training farmers than doing other things like distributing inputs.

DECLARATION

I, GIDEON NYAKITUMO MESSO, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my original work, and that it has not been submitted for a higher degree award in any other University.

Signature .....

Date 6 – 9 – 2004

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DEDICATION

To my late father Elisha Nyakitumo Messo and mama Susana Wakuru Mwangwa who made a lot of effort in laying down the foundation for my education.

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LIST OF ABBREVIATIONS

ARI	Agricultural Research Institute
ATTTL	Association of Tanzania Tobacco Traders Limited
FAO	Food and Agriculture Organization
FPA	Focal Point Approach
ICRAF	International Centre for Research in Agroforestry
IPM	Integrated Pest Management
LGAs	Local Government Authorities
MAC	Ministry of Agriculture and Co-operatives
NAEP II	National Agricultural Extension Programme Phase II
NALERP	National Agricultural Extension Rehabilitation Programme
NGOs	Non-Government Organisations
PRA	Participatory Rural Appraisal
SRP	Social Responsibility Program
SUA	Sokoine University of Agriculture
T&V	Training and Visit
TLTC	Tanzania Leaf Tobacco Company
TORITA	Tobacco Research Institute of Tanzania
TS	Top Serve
TTB	Tanzania Tobacco Board
UDSM	University of Dar es Salaam
URT	United Republic of Tanzania
VEW	Village Extension Worker

CHAPTER ONE

INTRODUCTION

1.1 Background

Agricultural extension in Tanzania, besides being a core function of the government, has been and still remains, almost entirely financed by the public sector (Rutatora and Mattee, 2001). However with declining resources, many developing countries including Tanzania, have made a shift towards private extension as a complement to the public extension system (Baxter 1987; Le Gouis 1991; Haster and Hass 1992). According to Umali and Schwartz (1994), private extension includes agricultural extension activities being undertaken by different providers except by the government. In the Tanzanian context, government extension activities refer to those activities, which are being implemented by the Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development and the Local Government Authorities (LGAs) under the President's Office. Private extension on the other hand, includes activities implemented by Non-Government Organisations (NGOs), universities, commodity boards, international research centres, farmer associations, marketing firms such as input manufacturers, agro-marketing and processing firms and trade associations (Rutatora and Mattee, 2001).

Private extension can be implemented by profit or non-profit making organisations. Non-profit organisations include universities, commodity boards, international research centres, NGOs and farmer associations. Profit organisations include marketing firms such as input manufacturers and distributors, agro-marketing and agro-processing firms, trade associations, private consulting firms and media companies. Association of Tanzania Tobacco Traders (ATTTL), a profit making organisation, falls under trade

associations. ATTTL started its operations in Tabora Region in June 1999, with the main objective of providing professional extension services and the production of good quality tobacco. Activities which are undertaken by ATTTL include: training farmers on recommended practices for tobacco production; afforestration; provision of credit for inputs; supplying technology for belling sheds; providing technology for curing tobacco and contributing funds for research.

Some of the benefits expected from privatisation of extension services include the involvement of both local and international organisations on the provision of extension services in the country and more availability of input supplies and markets for the crops being produced. At the same time, Kashuliza and Mbiha (1995), (Ministry of agriculture and Cooperatives (MAC), (2000)pitfalls of privatisation include input distributors who, because of being profit oriented, market their products only where there is infrastructure accessibility; low prices for the crops; removal of subsidies on credit resulting into high rates therefore few better-off farmers get access to credit; and a small budget for research. In the long run therefore, benefits expected from the private extension sector should include the continual benefits flow to the people with or without the organisation; reaching more farmers and solving farmer problems; availability of incentives for both farmers and staff and the initiation of other organs like networking and farmer groups.

According to (MAC, 2000), many of the NGOs have had positive impact, particularly with respect to: integrating several services like credit, inputs, training and follow-ups under one programme, improving the accessibility of extension services to farmers; organisational empowerment of farmers through working groups and other farmers associations and organisations. Other impacts also include targeting some otherwise

neglected groups such as women, youth and the poor; introducing cost sharing and creating a sense of ownership of programmes or activities by the target group; intensifying activities and resources to the extent of showing tangible results and more use of participatory techniques.

According to Rivera and Gustafson (1991), while increased privatisation of extension services may be an integral part of the commercialisation of agriculture, it can weaken public extension services and result in a diminished government role in mobilising the supply and the type of technical assistance and determining potential beneficiaries. It can also reduce the ability to plan and implement overall agricultural development strategies. With shifts of international donors from public to private extension, governments might find it difficult to integrate extension services within the broader goals of development (e.g. reduced poverty, increased employment, and improved health and nutrition).

1.2 Problem statement

Public funding for agricultural research and extension is widely perceived to have suffered badly, as governments in many developing countries have faced fiscal constraints, often as part of adjustment programmes (Davidson and Ahmad, 2002). Under these circumstances, the Tanzanian Government has reconsidered the issue of public extension service and currently has embarked on pluralism in extension services delivery and the possibility of gradually divesting the public sector of extension, thus leaving the private sector and users to take on an increasing responsibility (Rutatora and Mattee, 2001). Following the government reform policies and problems encountered by farmers, the idea of privatisation of extension services should be well thought out so as not to jeorpadize the national interests. In view of this there is need to identify committed and

trustworthy providers who can offer such services, develop mechanisms including regulatory measures in order to ensure that relevant services are provided in a cost effective manner and are sustainable (Rutatora and Mattee, 2001).

Nzega District has worked with several private agricultural extension providers such as Dimon of Morogoro, Tanzania Leaf Tobacco Company (TLTC), Top Serve (TS) and ATTTL. However, a systematic study with regard to ATTTL's agricultural extension activities has not been done. This being the case, it is felt important to assess it's agricultural extension activities on tobacco production in order to identify the advantages of using private extension providers in promoting agricultural production and to suggest corrective measures to any weaknesses.

1.3 Significance of the study

The findings of this study will assist (LGAs) and other extension providers to review their future plans and strategies to achieve predetermined goals in tobacco development. In addition to this, government, policy makers, other extension providers and extensionists will utilise the findings to lay down the basis for the sustainability of agricultural extension services in the country.

1.4 Objectives of the study

General objective

The main objective of the study is to assess the delivery of the private agricultural extension activities in tobacco production.

Specific objectives

The specific objectives are to:

1. Study the approach employed by ATTTL in its extension activities.
2. Assess the organisational and financial sustainability of the agricultural extension programme implemented by ATTTL.
3. Assess the efficiency and effectiveness of the agricultural extension activities undertaken by ATTTL.
4. Determine farmer's attitudes on agricultural extension services provided by ATTTL.
5. To assess impact of agricultural extension activities of ATTTL on tobacco production.

CHAPTER TWO

LITERATURE REVIEW

2.1 Provision of extension services

Evolution of extension practice in Tanzania is linked to the country's colonial roots and to the history of extension in the rest of the world especially United States of America and Europe. The Tanzanian extension service was still guided by a mixture of educational and non-education orientations as is reflected by different approaches that were adopted since independence (MAC, 1997).

2.1.1 Agricultural extension during the colonial period

The central concern of the agricultural extension services during the colonial period, was to boost agricultural production so as to provide raw materials for the expanding industrial sector in the metropolitan countries. However, as a result of a combination of factors such rising nationalism and increasing labour problems, the colonial powers abandoned plantation economy in favour of peasant cash-crop farming using the Focal Point Approach (FPA) which did not improve significantly peoples social and economic welfare (Ministry of Agriculture, 1992).

2.1.2 Agricultural extension between 1961 and 1967

This period was characterized by capitalistic commercial agricultural companies and settlers who co-existed with progressive farmers and focused mainly on cash crop production. This was patterned along the notion of development from the modernization point of view (Keregero, 1991). The first approach to be used was the improvement approach. According to Fieldman (1970) due to few and inadequate trained staff, farmers

living in scattered villages, extension recommendations being incompatible with farmers socio-cultural and economic milieu the approach failed. In view of this failure the government adopted the transformation approach, which was implemented along with the improvement approach. Village settlement schemes failed due to over mechanization, mismanagement and lack of involvement of farmers in planning and decision-making.

2.1.3 Agricultural extension between 1967 and 1980

During this period, the Government launched the Arusha Declaration and the decentralization policy both of which had adverse effects on the performance of agricultural extension. According to Mattee and Mollel (1990) this forced every leader to became an extension agent which made extension no longer a scientific discipline. In view of this the government launched the frontal approach. With this approach planning of extension became bureaucratic and top down and several crop authorities were established. Nagel (1997) described the commodity approach as being useful in terms of technology transfer but leaves out important public issues such as environmental protection, as well as the target groups. By mid-1970's it was apparent that the general agricultural extension could not adequately transfer technology.

2.1.4 Agricultural extension between 1980 and up to date

According to MAC (1987), review during the Mid-1980's revealed that the extension service suffered from the following: scarcity of relevant messages from research, weak research – extension linkage, lack of management oriented monitoring and evaluation system, inadequate logistic support, dilution of efforts, lack of coordination and staff motivation, lack of single line of command of extension management and organization, inadequate and fragmented organizational arrangement. To address these issues the

government launched the National Agricultural and Livestock Extension Rehabilitation Project (NALERP), which was implemented using the Training and Visit (T&V) model. According to Rutatora and Rutachokozibwa (1995), in 1995 reviews showed that NALERP had achieved its goals of agricultural output. However it was clear that agricultural extension was more of a supply driven than a demand driven service. The formulation of National Agricultural Extension Project (NAEP II) in 1997 which built on what was achieved under NALERP continued to follow the Training and Visit (T&V) model while using the participatory approach. Among other things, NAEP II was expected to initiate the process of private sector, NGO and farmer participation with cost sharing including selective privatisation where feasible.

In line with various policy reforms, different providers have engaged themselves in extension delivery. Since 1988 to date, the major extension providers in Tanzania can be identified as: Ministry of Agriculture; President's office, Regional Administration and Local Government; Non-governmental organisations; Donor-supported projects; Private agribusiness; and Community-based organisations. The first two are classified as public extension services and the third, fourth and fifth fall under private agricultural extension (Rutatora and Mattee, 2001). Private agricultural extension services are those activities, which are for a fee directly or indirectly for those receiving the services and access is denied to those who do not pay for them. When one person uses the service reduced its availability to the other (Umali and Schwartz, 1999).

According to Rivera and Gustafson (1991), as agriculture becomes more advanced or commercialised, technology gradually changes from being a largely public good to becoming an increasingly private good. In this process, technology transfer shifts from

being largely a public funded enterprise to a more complex specialised system whose funding may be even associated with the sale of inputs, equipment and services. According to Umali and Schwartz (1994), enterprises will supply a particular agricultural extension service if the firm (directly or indirectly) can capture reasonable returns. Input suppliers will provide complementary extension as part of the technology sale to promote products, ensure the products proper use and preserve the firms market share. Agro-processing and marketing firms will provide extension services to reduce agricultural input risks. They frequently rely on contract farming or outgrower schemes that generally introduce new technologies or techniques to farmers. Dimon of Morogoro is an agro-processing company that buys and processes tobacco in the country. The company has employed 6 agronomists and 73 leaf men who assist farmers in tobacco growing, environmental conservation and leaf processing. Dimmon of Morogoro has made a contract with ATTTL so that it can provide agricultural extension services to farmers on its behalf. These services include the provision of credit, inputs, technology and supervision of markets. Apart from those activities they give training and support research (Tumaini, P. personal Communication, 2002). Farmer associations, in addition to fulfilling their primary function (e.g. organising production, providing credit or market services), may provide agricultural extension services, for economic, technical and social reasons. A study done by Mdemu (2000), revealed that the need for effective extension services prompted the development of Demand Driven Extension Services in Iringa region as practiced by other farmers associations to make agricultural extension services sustainable.

2.2 Case studies in other countries

Schwartz (1994), points out that different types of commercial firms engage in agricultural extension as part of their business. These firms may use information channels such as written information, posters, farmer meetings, radio, on farm demonstration exhibits, off farm shows etc. When the Zaria/Cadburry tomato-paste operations were being established in Nigeria, managers found that the ratio of public extension to farmers was 1: 2500. To improve coverage, the company had to use their own extension system. In Jamaica the formation of farmer associations and their involvement in decision-making lifted the tobacco industry compared to other crops by increasing productivity. Carreras Rothman Limited of Jamaica trains all contract farmers beginning with the fundamentals of tobacco production to grading.

2.3 Efficiency and effectiveness of agricultural activities, and the organisational and financial sustainability of an agricultural extension programme

The term efficiency, effectiveness and sustainability can mean different things to different people. According to Kauzeni (1989), efficiency means how best extension resources, staff, funds, facilities, organisation and management activities are used to achieve extension targets. Schwartz and Kampen (1989), explain that effectiveness refers to the ability of the extension activities to achieve goals. Feuerstein (1986), who also defined the term effectiveness as a measure of the extent to which an organisation or extension activities are successful in achieving the intended objectives also supports this view. According to Kauzeni (1989) and MAC (1999), for extension to be effective, communication internally and externally, accessibility to extension services by small-scale farmers, and the ability of the extension worker to communicate and convince farmers to adopt innovations are important. Umali and Schwartz (1994), also point out

that for an effective agricultural extension program, there is need to have a smooth design and, regardless of the institutional channel, five major issues have to be resolved: these include objectives of the extension activities; the target audience; the content of the message; what methods will be the most effective to convey the messages and how can the activities of various extension sources be co-ordinated to ensure synergy in the extension effort. Schwartz (1994), also points out that for one to have an effective extension system, a strong linkage is required to other services like inputs, markets, advice, marketing and processing to recover costs, qualified staff, quality research, and providing services affordable to poor farmers. Rothwell et al, (1995) found that effectiveness of the extension system can be achieved if workers are satisfied with their jobs. Luthans (1995), also points out that job satisfaction affects performance and is associated with the organisational culture. Components of organisational culture that promote good performance are mission, management style, and performance expectation (Grindle, 1997). These factors combine and interact in the form of an implicit contract between organisational leaders and employees.

Efficiency is measured as a function of output per unit of resource (Cooke and Nigel, 1984), moreover indicators of efficiency show whether the resources and activities are being put to the best possible use to achieve objectives, such as the number, frequency and quality of supervisory visits. Efficiency not only involves structural management reorganisation and better use of extension methodology but also on ability to trace the real problems of farmers and apply solutions appropriately to their environment. Effectiveness can be measured by observing the relationship between achievements of existing activities in relation to the assumed goals. Moris (1991), found that effectiveness depends on how one views it. If seen as a technology transfer, then to most people focus

may go to communicating information about new varieties and husbandry innovations to farmers as a key meaning. According to Collin and Kaisi (1995), technology adoption rate is expressed as a percent (that is the area covered by the new technology).

Organisational and financial sustainability of the programme means the continuation of services of the organisation or of the benefits (Brinkerhoff and Goldsmith 1999). It shows how resources are used in production and managed in such a way that they are more or less self-generating and ensures continual improvement well beyond conventional expectations. The success will depend on the availability of financial resources and formation of farmer organisations, associations, groups and their organisation. More or less their strengths will depend on their organisational structure, capacity building, leadership skills, management skills, group management, staffing, financial skills and financial resources.

2.4 Factors influencing efficiency, effectiveness, organisational and financial sustainability of an agricultural extension programme

According to Kauzeni (1989), for extension activities to be effective certain requirements have to be satisfied. These include properly trained personnel, necessary working facilities, effective communication, and good national policy. Mattee (1994), adds that insufficient manpower, financial constraints, the haphazard nature of agent's contact with farmers, irrelevant technological packages, services reliance on a large number of paraprofessionals are the most cited problems hindering effectiveness. Mattee and Mollel (1990), assert that extension activities are likely to be effective if they are accessible to farmers and that they address practical problems (MAC 1999). Sustainable extension should be self-generating in terms of funding, staffing and clientele support to allow it to

function at a constant level of activity (Mattee, 1997). Luhasi (1998), pointed out that the type of organisational arrangements, the nature of the technology used, the amount of training, institutional capacity building, the level and the duration of the investment and the attention given to the current manpower costs have a significant influence on sustainability.

2.5 Impact of private agricultural extension activities of ATTTL

According to Oxford dictionary (1998), " impact " refers to a strong effect or impression. Impact studies deal with the effects emanating from the implementation of agricultural extension activities. They evaluate the effects of agricultural activities including economic, social or environmental effects. They generally require field studies at the level of the household, farm and at the association level (Horton and Peterson, 1991). A study conducted by the World Bank in 1998 on the impact of extension on the agricultural economy concluded, " it has a positive and considerable effect ". The rate of profitability of agricultural extension in Africa, Asia and Latin America is supposed to be between 34 percent and 80 percent which is more than satisfactory (Wolf, 1995). Impact is the ultimate change in the living conditions of the beneficiaries resulting wholly or partially, from the agricultural extension activities. These will include increased rate of adoption of technology, increased yield, food security, and wider participation by target groups in developing, planning and decision making. Others are increased capacity building, organisational empowerment of farmers by promoting and targeting otherwise neglected groups of women, youth and the elderly, change of farmer's attitudes and skills and knowledge gained by farmers, environment and sustainability. Schwartz (1994), also point out that performance may include productivity; quality of product; income; weather;

timeliness of harvest; prices, availability of inputs, credit and markets and environmental conservation.

CHAPTER THREE

METHODOLOGY

3.1 Location of the study

This study was conducted in Tabora Region, specifically Nzega District. The choice of the study area was dictated by the existence of ATTTL's extension activities on tobacco production, and its easy accessibility from Nzega town and Tabora municipality. Tabora Region is situated in the western part of Tanzania. The district borders Dodoma and Singida in the east, Shinyanga Region in the north, Iringa Region in the south and Kigoma Region in the east (See Figure 1).

3.2 Sampling procedures

Ten villages in the District where ATTTL is active were randomly selected from a total 43 villages. The target population was farmers who have contracted with ATTTL and its extension staff. Village rosters and ATTTL's extension staff constituted the sampling frame. 120 farmers, both male and female, were randomly selected from a total of 720 farmers by picking some random point in the list and then every 6^{th} until the desired number was secured. During the period of conducting the study there were 12 ATTTL extension staff all of who were interviewed. To get the views of other extension staff, officials from the Regional and Head office of ATTTL were also interviewed.

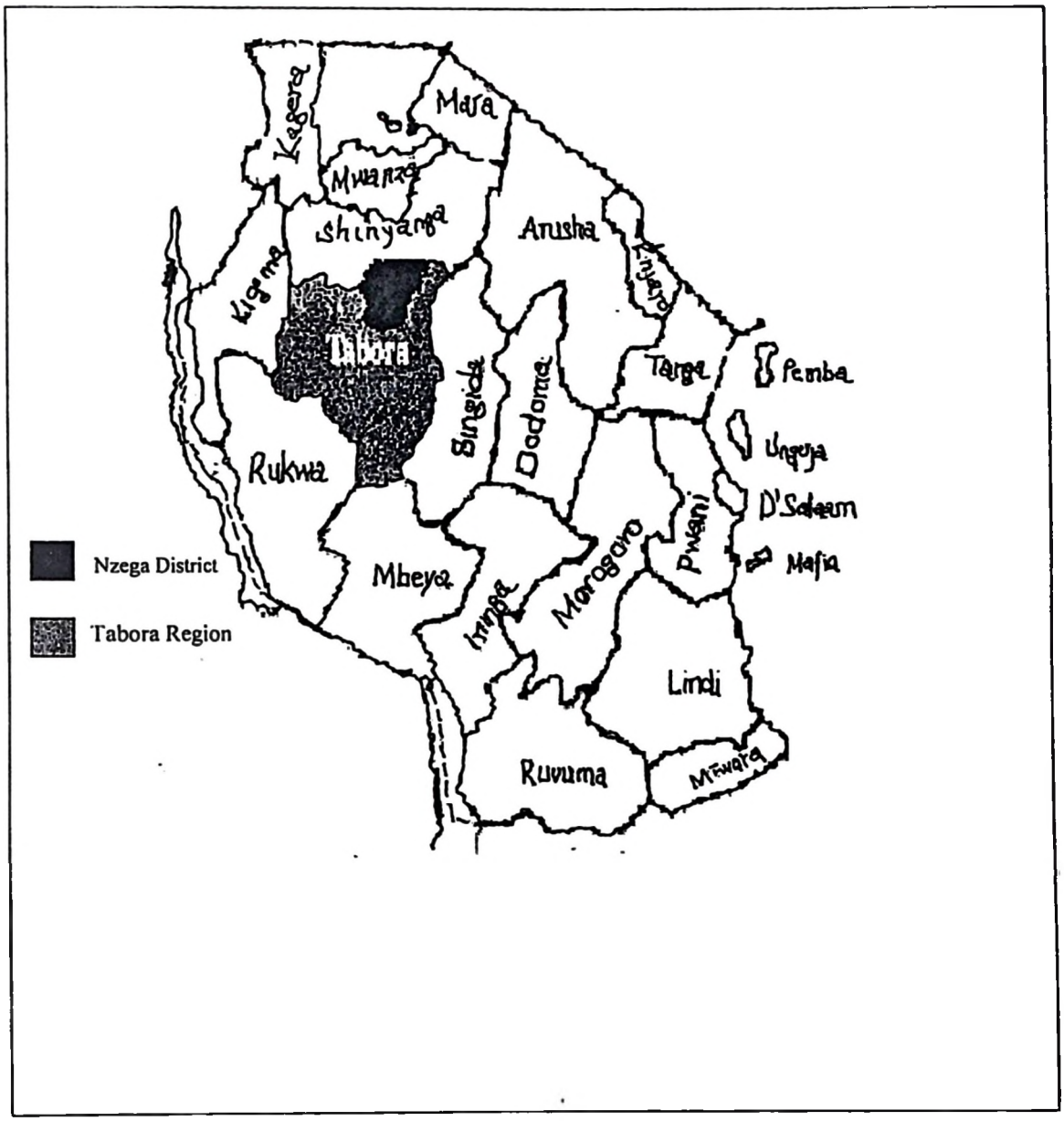

Figure 1: Map of Tanzania: Location of Tabora Region

3.3 Data collection instrument

Questionnaires and a notebook to record additional information were used to collect data. The researcher prepared two questionnaires one for the farmers and the other for ATTTL staff. Academic staff from the Department of Agricultural Education and Extension at Sokoine University of Agriculture were consulted to give comments on the questions. The questionnaires were pre-tested in the target population. A sample of 10 farmers and two ATTTL extension workers were used for pre-testing. After pre-testing, the researcher revised and made the necessary changes by re-writing questions which seemed to be unclear to farmers and ATTTL extension staff before actual data collection.

3.4 Data collection strategy

The researcher and two recruited enumerators, both diploma holders in agriculture were involved in data collection. This involved visiting farmers at their homes/ farms where they were interviewed. A day or two before the interview, the enumerators and the researcher visited villages to inform the village leaders and the extension workers about the objectives of the study. The enumerators interviewed farmers individually and recorded their responses in the relevant questionnaires. The researcher interviewed the ATTTL staff and the farmers. The responses were recorded in the relevant questionnaires. The researcher obtained other information by reviewing reports and documents concerning ATTTL and tobacco matters. Informal discussions with ATTTL officials and leaders of primary societies were done. The information obtained was recorded in the notebook.

3.5 Data analysis

Data collected from primary sources were coded, and analysed using the Statistical Package for Social Science (SPSS) computer program. Descriptive statistics such as frequencies, percentages and cross tabulations have been used to organise the data and the results. Frequencies were used for univariate analysis to obtain the variabilities and central tendencies of variables. Cross-tabulations and Chi-square tests were also used for bivariate analysis to determine the relationship between variables.

CHAPTER FOUR

RESULTS AND DISCUSSION

The chapter is divided into six sections namely basic characteristics of respondents, approach employed by ATTTL in extension activities, efficiency and effectiveness of agricultural extension activities undertaken by ATTTL. Other sections cover organisational and financial sustainability of the agricultural extension programme implemented by ATTTL, farmers attitudes on agricultural extension services provided by ATTTL and impact of ATTTL agricultural extension activities on tobacco production.

4.1 Basic characteristics of the respondents

This section presents the basic characteristics of two types of respondents, the farmers who grow tobacco in Nzega district and the ATTTL extension staff from Nzega district and at the head office in Tabora. Basic characteristics examined for the farmers were age, marital status, gender, level of education, average farm size and area under tobacco. According to Msangi (2001), these basic characteristics bear essential attribute to socio-economic and farming practices adopted by farmers hence the productivity of the farm enterprise. Basic characteristics of ATTTL staff were also examined. These include sex, age, marital status and highest level of training. These are equally essential especially when one wants to see the attribute of these characteristics to the effectiveness of ATTTL extension services.

Table 1 shows results on age, marital status, level of education, size of the farm holding and area under tobacco cultivation yearly. These results indicate that farmers between 30

and 60 years old are the ones who mostly practise tobacco farming. According to United Republic of Tanznaia (URT) (1987), in: (Mandara 1998), the active age is between 14 to 64 years and this concurs with the results of this study which showed farmers who were between 30-60 as the ones found practising tobacco farming, as these are active, sound and energetic, who can take risks in agriculture. According to URT (2002), studies done in the coastal regions show that life expectancy at birth in years at 2000 for a Tanzanian was 58.0 years. Theoretically those aged 45 and below who are more than 50% of the total farmers have a longer time ahead for practising farming. Therefore they may be interested in trying and adopting innovations if found to be beneficial. In the case of marital status, results show that the majority of tobacco growers are married. On the level of education, the majority of the tobacco growers have formal education. This implies that most farmers who benefit from ATTTL agricultural programs are literate. Literate farmers make good contact farmers because they can write, keep records and read information. On size of farm holdings, results show that the majority own big shares of land of more that 10 acres. Furthermore, results show that the majority cultivate an average of only one to four acres so most stand a good chance of adopting Integrated Crop Management because of ample land.

Table 1: Distribution of respondents (farmers) according to various socio-economic characteristics

Category	No	%
Age		
Below 20 years	2	1.7
21-30 years	22	18.3
31-45 years	47	39.2
40-60 years	36	36.0
Above 60 years	13	10.8
Total	**120**	**100**
Marital status		
Married	112	93.3
Widowed	4	3.3
Separated	1	0.8
Never married	3	2.5
Total	**120**	**100**
Level of education		
None	18	15.0
Adult education	10	8.3
Standard iv	27	22.5
Standard vii	65	52.5
Total	**120**	**100**
Average farm size holding		
1-5 acres	12	10.0
6-10 acres	36	30.0
11-15 acres	20	16.7
Above 15 acres	52	43.3
Total	**120**	**100**
Area under tobacco cultivation		
1-2 acres	70	58.3
3-4 acres	35	29.2
5-10 acres	10	8.3
Above 10 acres	5	4.2
Total	**120**	**100**

Table 2 gives results on respondents who are the extension staff on sex, age, marital status and level of education. Results indicate that most of ATTTL staff are male. This has implications at field level when disseminating information because female extension staff have shown to be effective taking into consideration that women play a great role in agricultural activities. On age results show that the majority are of middle age. This implies that they will be in position to think and concentrate on their work compared to those of a young age. On the level of education results show that more than half of the staff have professional training. According to Axinn and Thorat (1972), one key measure of personnel has to do with the level of training of those employed in the extension system. Good supervision, coverage and using appropriate extension methods need professionalism to enable farmers gain skills hence adoption.

Table 2: Distribution of respondents (extension staff) according to sex, age, marital status and highest level of training

Category	No	%
Sex		
Male	11	91.7
Female	1	8.3
Total	**12**	**100**
Age		
Less than 25 years	1	8.3
26-30 years	5	41.7
41-50	5	41.7
More than 50 years	1	8.3
Total	**12**	**100**
Marital status of the extension staff respondents		
Married	8	66.7
Living with partner	3	8.3
Single	1	25.0
Total	**12**	**100**
Highest level of training of extension staff		
Form vi and below	5	41.7
Diploma	4	33.3
First	2	16.7
Second degree	1	8.3
Total	12	100

4.2 ATTTL approach towards delivery of agricultural extension services

ATTTL main objective is to provide services to its stakeholders in all areas they conduct business. In so doing they use different strategies to attain their goals. Among the strategies is the use of model farmers, the supply of inputs, extending credit to farmers, an effective organisational structure and the use of different methods in imparting knowledge and skills to farmers.

4.2.1 Selection and use of model farmers

According to the ATTTL agronomist (Mussa, H. personal Communication, 2002), the front line staff at village level are the village or ward extension workers who use model farmers to disseminate information to other farmers. All model farmers are involved in the programme on voluntary basis and are selected by the extension worker in collaboration with the primary society leaders. These model farmers must have good co-operation with co-operative society leaders at the same time also with the people in their respective areas. Criteria for selecting a model farmer is that one should have 1.5 or more hectares of tobacco, education of standard seven, be open to new information, be a fulltime farmer and be truly a representative of the farmers where he/she lives. The assumption put on this category of farmers is that they can afford to test new practices and other farmers are expected to listen and copy from them. In addition to this, collective responsibility is expected to be practised by ATTTL extension worker, farmer groups and co-operative society leadership in improving tobacco production in their respective areas. This is an added advantage over public extension in that co-operative or farmers group leaders can make a follow-up to see if logistics are being provided to make

these model farmers effective. Public extension still lacks the means such as inputs to make whoever is chosen for a demonstration to be effective.

4.2.2 Use of contract farmers

Timely distribution, and monitoring of farm inputs to contracted farmers with individual companies is one of the objectives of ATTTL. ATTTL approach in contrast to other extension delivery systems, offers its contract farmers something more concrete by providing them with inputs. Contractual farming means farmers make contracts with the servicing companies who buy the tobacco and in return they are provided with inputs in terms of loans and credit. Extension of loans facilitates the improvement of infrastructure such as barn construction and furnace improvement and credit for the supply of inputs such as fertilisers and chemicals. A readily available market and provision of inputs are advantages compared to the public extension delivery that does not provide this package. Lack of reliable inputs is reported to be one of the hindrances to agricultural development (Urio 1996). In tobacco growing areas where logistics are not available farmers may be forced to travel long distances to buy inputs. This may increase costs because of transport and wasted time.

4.2.3 Organisational structure, leadership and resources

The ATTTL National office at Tabora has five departments, which are the General manager's office, finance, operational, and control and personnel departments. The finance, operational, control and personnel departments are headed by managers. It has regional offices in Tabora, Urambo, Mpanda, Chunya and Kahama. The offices are headed by Regional Managers. Regional offices have been delegated with powers in such

a way that they can act and make decisions on both financial and manpower resources where there is need, instead of waiting for one from the National office. This is an advantage over public extension where professionals at the Regional and District offices have no control over resources, besides budget for public agricultural extension in the region and in districts are usually not enough to effect significant extension delivery services.

To provide extension services the association has engaged Brazilian agronomists and a Tanzanian workforce of 55 leaf technicians to impart such services to its farmers. The Brazilian agronomists have been employed so that they can transfer technology from Brazil to Tanzania. They have introduced three Tobacco varieties namely ULTF10, RG17 and K306 which, when cured easily get an orange colour which enable farmers to fetch high price compared to the old KSIE and KEI which have been in use by tobacco farmers. The agronomists have introduced a new fertilizer ratio of 10:18:24 from the old 6:18:20. A new barn of the dimensions 7.5m x 7.5m which holds 600 sticks and uses $9m^3$ of firewood to cure one ton of tobacco has been introduced to replace the old malakis of Tumbi Research Centre with the dimensions of 4m x 4m which holds 320 stick and uses $27m^3$ of wood to cure one ton of tobacco.

4.2.4 Advice given and source of technical packages

ATTTL unlike public extension systems, gives advice on tobacco production only. This technical advice includes nursery, field, barns and post curing practices in tobacco culture. Public extension service, on the other hand, provides advice on cultural practices on various crops, which result in a large coverage for one Village Extension Worker (VEW). ATTTL staff work with one crop therefore few recommendations and a small

coverage which enables their extension staff to make more contacts and in this way they are able to teach and solve more farmers problems compared to public extension staff. Source of technical packages for ATTTL, like public extension, comes from various National Agricultural Research Institutes as well as International Research Centres. According to ATTTL (Mussa, H. personal Communication, 2002) the technical packages are assembled by incorporating the already published and sufficiently tested research information from various institutes one being Tumbi Research Institute in Tabora. This is the reason why in ATTTL contract farmers are not allowed to use any other tobacco seed except that which is provided by the company. It is assumed that seed provided by the company has been certified and tested and is of high quality compared to those from other sources.

4.2.5 Extension methods used by ATTTL

Information pertaining to extension services was freely available, but nowadays organisations whose business is to develop and sell information, will try to make it available only to those individuals and organisations willing to pay for it. Though farmers see this service as a public good, the fact is that these services are paid for indirectly through profits generated from sales of tobacco. A privatised extension organisation will choose a method which will make it possible to recover costs. ATTTL uses various methods which are described under this section.

4.2.5.1 Home visits

This is a method which provides an opportunity for face to face contact between the farmer and the extension worker. It is effective in teaching new skills, helping the farmer

to integrate information from the extension worker such as causes of problems and research findings on a unique problem. Farmers were also asked to mention days in which they had contacts with both ATTTL staff and public extension workers for home visits and frequencies are indicated in Table 3

Table 3: Home visits by ATTTL and public extension services expressed as days per six months

Days	Extension system	No	%
Nil days	ATTTL	57	47.5
	Public	88	78.3
1-2 days	ATTTL	35	29.0
	Public	21	17.5
3-4 days	ATTTL	14	11.7
	Public	10	8.4
5 days	ATTTL	14	11.7
	Public	1	0.8

Table 3 shows that 29 % of the farmers had contacts with ATTTL staff 1-2 days per six months, 11.7% for 3-4 days per six months, 11.7% for 5 days per six months and 47.5% had no contacts. Contacts made by public extension accounted for 17.5% for 1-2 days per six months, 8.4% for 3-4 days per six months, 0.8% for 5 days per six months and 78.3% had no contacts. This shows that ATTTL staff make more home visits compared to public extension.

4.2.5.2 Demonstrations

Field demonstrations are the most widely used technique in imparting farm information and skills. The basic technique rests on the demonstration plot which can be used for both method and result demonstration. Farmers were also asked to mention days in which they

had contacts with both ATTTL staff and public extension workers for demonstrations and frequencies are indicated in Table 4.

Table 4: Demonstration for ATTTL and public extension services expressed as days per six months

Days	Extension system	No	%
Nil days	ATTTL	60	50.0
	Public	105	87.5
1-2 days	ATTTL	43	35.8
	Public	12	10.0
3-4 days	ATTTL	12	10.0
	Public	3	2.5
5 days	ATTTL	5	4.2
	Public	0	0

Table 4 shows that 35.8% of the farmers had contacts with ATTTL staff 1-2 days per six months, 10.0% for 3-4 days per six months, 4.2% for 5 days per six months and 50.0% had no contacts. Contacts made by public extension accounted for 10.0% for 1-2 days per six months, 2.5% for 3-4 days per six months, and 87.5% had no contacts. These results show that ATTTL staff make more demonstrations compared to public extension. This could be due to the fact that ATTTL staff have access to more logistical support compared to public extension staff. Where an extension worker has access to inputs such as fertilisers, pesticides, seeds an operation can be easily done and guided by him. A demonstration will give such farmers the opportunity to observe at first hand the differences between a recommended new crop practice and a traditional one. Farmers like to see how a new idea works, and what effect it can have on increasing their yields. By

showing tangible results of a new practice recommended by the extension service, the agent can help to create confidence among the farmers and encouragement for them to try the practices by themselves.

4.2.5.3 Extension meetings

Extension meetings are a useful educational tool for where the extension agents and farmers come together, and ideas can be openly discussed and analysed. They involve the farmer in learning through exchange of experiences. Farmers were asked to mention days in which they had contacts with both ATTTL staff and public extension workers on extension and frequencies are indicated in Table 5

Table 5: Extension meetings for ATTTL and public extension services expressed as days per six months

Days	Extension system	No	%
Nil	ATTTL	78	65.0
	Public	102	85.0
1-2 days	ATTTL	31	25.8
	Public	11	9.2
3-4 days	ATTTL	8	6.7
	Public	7	5.8
5 days	ATTTL	3	2.5
	Public	0	0

Table 5 shows that 25.8% of the farmers had contacts with ATTTL staff for 1-2 days per six months, 6.7% for 3-4 days per six months, 2.5% for 5 days per six months and 65.0% for those who had no contacts. Contacts made by public extension accounted for 9.2% for 1-2 days per six months, 5.8% for 3-4 days per six months, none had contacts for 5 days per six months and 85.0% had no contacts. These results show that ATTTL staff held

more extension meetings compared to public extension workers. With more packages at hand such as inputs and cultural practices, farmers are apt to get confidence in ATTTL staff and are more likely to respond to meetings when these are called.

4.2.5.4 Mass media

Newspapers, magazines, radio, television, slides and film are relatively easier media for sending messages to a large number of people. Table 6 reveals the views of the respondents who were requested to indicate their perception of how often mass media are being used by ATTTL extension system.

Table 6: Farmers perceptions on techniques of mass media being used by ATTTL extension system in disseminating information

Variable	Often		No comment		Not available (N=12)	
	No	%	No	%	No	%
Pamphlets	4	5.6	5	6.9	63	87.5
Farm magazine	1	1.4	4	5.6	67	93.1
Leaflets	2	2.8	11.1	62	86.1	
Letters	1	1.4	25	8.3	65	90.3

Data on Table 6 reveal that for the use of pamphlets, those who said they are often used constituted 5.6%, no comment 6.9% and those who said not available accounted for 87.5%. For the farm magazine those who said they are often used constituted 1.4%, no comment 5.5%, and not available accounted for 93.1%. For the leaflets those who said they are often used constituted 2.8%, no comment 11.1%, and not available accounted for

86.1%. For letters those who said they are often used constituted 1.4%, no comment 8.3%, and not available accounted for 90.3%. These results show that mass media is not widely used in ATTTL extension system. This is the same as in public extension services, where the use of mass methods was found to be very limited. Reasons given for such a situation among is lack of electricity where video tape and films in combination with reading materials could have been used to disseminate information to farmers. Another snag for ATTTL is that they tend to work with the primary society's committee. The committee comprises of 11 people, chairman, secretary and the other 9 members. The leaflets and other available mass media materials are not distributed by the leaf technician during training program instead they are given to the Committee, consequently some of the materials do not reach the intended farmers. Lack of an extension specialist also contributes to the poor use of ATTTL's mass media programs. Swanson and Claar (1984), reported that lack of effective use of mass media methods is one of the major shortcomings of theT&V system of extension.

Generally in considering contacts made through visits, demonstrations and extension meetings it has been shown that training and supervision of farmers made by ATTTL staff is superior compared to that by public extension. In other countries, however, mass media has shown success. In Peru for example, videotape was one of the three media used in the "Video-based Training for Rural Development" aimed at mobilising rural farmers for agrarian reform. Eighteen-minute videos were presented daily to farmers followed by discussions and a review of printed materials. By 1981, 102,000 farmers had been reached and analysis of project performance found that video's audio-visual quality overcame illiteracy constraints. Similar programs have been replicated in Brazil, Honduras, Mexico and Paraguay (Wete, 1991). Farmer participation in the designing and

implementing mass media programs will improve quality and enhance learning process (Chamala, 1995).

4.3 Efficiency ATTTL's agricultural extension services

Efficiency was determined by measuring coverage of farmers and observing linkages. According to MAC (1997), factors which contributed to the failure of extension methodologies and approaches in the past include poor working facilities, poor supervision and inappropriate messages. To address these constraints NALERP, was initiated and among the strategies used, was to reduce the workload and duties of village extension officer. He was to be a facilitator and serve 700 farm families which so far have not been achieved. Robertson, Fulton and Buck (1998), assert that collaborative research is the key to partnership and maximize efficient use of scare resource. In addition they add that local programs advisory committees and organization provide guidance, resources and services and assist program in connecting with referral cases where there is need. According to Babu, Sung and Sachdave (1997), linkage with research is a strategy to insure that extension agents are up to date with current research findings. Further they add agricultural agencies collaborating with other organisations and institutions enrich the agriculture extension system by increasing efficiency.

4.3.1 Coverage of farmers

The presence of transport enables extension workers to reach farmers and disseminate information as planned. In addition to disseminate information, transport enables them to monitor and evaluate programmes to see if they are performing as required and that

objectives of the company are met. ATTTL provides transport to its entire staff to make them reach their clients and Table 7 shows the kind of transport provided by staff.

Table 7: Type of transport provided to ATTTL's extension staff

Type of transport	No	%
Bicycle	4	33.3
Motorcycle	5	41.7
Motor vehicle	3	25.0
Total	12	**100**

According to the production Manager (Mkamba, D. personal Communication, 2003), the headquarters and the regional offices are provided with motor vehicles and motorcycles, district offices are provided with motorcycles and village extension workers with either motorcycles or bicycles. In Nzega there are seven VEWs, four with motorcycles and three with bicycles all are supposed to serve a total of 2000 contract farmers. Four VEWs with motorcycles serve an average of 444 farmers while those with bicycles serve an average of 140 farmers. According to Rivera and Gustafson (1991), a Food and Agriculture Organisation (FAO) study estimated the extension: farmer ratios of various countries as 1: 325 for North America, 1:431 for Europe, 1:1809 for Africa, 1:2661 in Asia, 1:2940 in Latin America and 1:3499 in the near East. In more than 20 FAO case studies on different extension approaches, the reported actual contact with farmers was about 400 to 500 farmers per extension worker annually. So with this background ATTTL staff are within a reasonable coverage of 1: 450 enough to visit most of their farmers. On the coverage ATTTL extension staff the four VEW's have motorcycles and each covers an

average of 444 contract farmers while a VEW with a bicycle covers an average of 105 farmers. The official ratio of extension staff to farmers in the country is approximately 1: 1800 for the public extension which uses mainly bicycles to reach farmers. Considering this, it is obvious that ATTTL farmer's coverage is efficient compared to the public extension services. This means tobacco farmers will be reached more often and proper supervision will be provided thus making the extension system efficient.

4.3.2 Linkages

ATTTL has established links with other sectors such as finance, trade, industry and commerce, institutions servicing agriculture such as development institutions, research extension and society institutions such as labour unions and non-government organisations to affect its agricultural activities. In order for ATTTL to provide research information the association has made links with research institutions such as Agricultural Research Institute (ARI) Tumbi, International Centre for Research in Agroforestry (ICRAF), Sokoine University of Agriculture (SUA), University of Dar es Salaam (UDSM), Tobacco Research of Tanzania (TORITA), and Kutsaga research station in Zimbabwe that generate productivity-enhancing technologies for the association to disseminate. ATTTL has links with Dimon of Morogoro and TLTC for procurement of inputs, provision of loans and markets. ATITL also has links with UDSM, ARI-Tumbi, TORITA and SUA for carrying out its training programmes and ICRAF in Nairobi and Tabora for its afforestation activities. In addition to the above, ATITL also creates good working relationship between the shareholders and Regional and District authorities by promoting collaboration in all issues pertaining to the tobacco industry. Links with those institutions and its good relation enables it to serve farmers more conveniently and efficiently compared to the public extension.

4.4 Effectiveness of Agricultural Extension Services

Effectiveness was determined by measuring job satisfaction and the effect on production. To attract good employee, the working environment needs to be attractive to the worker.

According to Robbins (1991), motivation if properly used, improves productivity while if improperly used hinders productivity. Job satisfaction can be achieved through proper planning, clear relationship among the people, delegation of authority, clear limits to delegation, authority accompanied with responsibility and to have a structure that is neither simple nor too complex. Under these conditions effective strategic planning can be achieved thereby making the organizations activities effective. According to MAC (1997), agricultural production has not increased significantly and obstacles identified include: inappropriate technology, inadequate research and extension services; low utilization of improved technologies, lack of financial services in rural areas, limited processing capacity and technology, low and declining prices of most export commodities combined with barriers to trade in developed countries. So to increase production the government pushed for private sector to supply inputs, credit, information and marketing services. In view of this to assess job satisfaction of ATTTL and effect on production can indicate whether the company is effective in its services to increase production.

4.4.1 Job satisfaction of ATTTL staff

The organisation of ATTTL and its success more or less depend on the job satisfaction of its employees. Job satisfaction is an individual's general attitude towards her/his job. A person with high level of job satisfaction holds positive attitudes towards the job, while those dissatisfied with their jobs hold negative attitudes about the job. Literature on organisational behaviour indicates that satisfied workers are more productive than dissatisfied ones (Hellriegel, 1986, David, 1991; Luthans 1995). Society has social culture and where people work has an organisational culture. Organisational cultures are

beliefs and expectations shared by organisational members. These beliefs and expectations shape employees orientation toward work and determine the extent to which individuals direct behaviour towards achieving goals set by the organisation. Robbins (1991), suggests ten objective factors which when rated, organisational culture impacts job satisfaction. These are individual initiative, risk tolerance, direction, integration, management support, control, identity, reward system, and conflict resolution and communication patterns. These are elaborated below.

(a) Individual initiatives: Degree of freedom, responsibility, and independence that the agricultural extension staff has are referred to as individual initiatives.

(b) Risk tolerance: The degree to which extension staff is encouraged to be innovative and aggressive can be referred to as risk-tolerance.

(c) Direction: Organisational mission refers to the degree to which an extension organisation creates clear objectives, sets standards, and service orientations that employees are expected to emulate

(d) Integration: Integration refers to the degree to which units, sections and departments within the extension organisation are encouraged to operate in co-ordinated manner.

(e) Management support: The degree to which managers provide clear communication, assistance, gives support to their subordinates and inspires teamwork is referred to as management support.

(f) Control: The number of rules and regulations, and the amount of direct supervision that is used to oversee and control employee behaviour is referred as control.

(g) Identity: This implies the degree to which staff feel proud to identify themselves with ATTTL extension staff, rather than with other fields of professional expertise.

(h) Reward system: The degree to which reward allocations (that is salary increases and promotions) are based on extension staff performance criteria in contrast to seniority and favouritism is referred to as reward system.

(i) Communication pattern: Communication pattern refers to the degree to which communication in extension to the formal hierarchy of authority.

ATTTL staff were requested to indicate how they perceived the eight factors and results are summarised in Table 8.

Table 8: ATTTL extension staff perception on organisational culture dimensions (N=12)

Dimension	Agree		No comment		Disagree	
Individual initiatives	**No**	**%**	**N**	**%**	**No**	**%**
My work allows me to solve work problems using own Talents in different ways	9	75.0	2	16.7	1	8.3
Direction						
The goals of extension work are clear to me	12	100	0	0	0	0
Advancement of employee from one position to another is well known and followed	7	58.3	3	25.0	2	16.7
Integration						
My supervisors make sure that extension workers activities are co-ordinated	8	66.7	2	16.7	2	16.7
Management support						
I am encouraged by my supervisors to consult them in case of problems	12	100	0	0	0	0
My supervisors work hard to make sure that my good work is rewarded	8	66.7	2	16.7	2	16.7
I am used to get study visits outside my working station	9	75.0	2	16.7	1	8.3
Control						
Seminars focused on desired norms such as hard work, efficiency and effectiveness are generally conducted in my organisation	12	100	0	0	0	0
Identity						
My feelings are that I can work better under private than under government	12	100	0	0	0	0
Agricultural production cannot improve without the help of the extension Worker	12	100	0	0	0	0
Reward system						
Promotions and remuneration in agricultural extension are connected to performance of the extension worker	7	58.3	1	8.3	4	33.3
Appointment to higher position in extension organisation is based on academic qualification only	5	41.7	4	33.3	3	25.0
Communication pattern						
It is common for an extension worker to get a formal report of his/her work	11	91.7	0	0	1	8.3

Lirket type of scale was used Agree = 3 No comment =2 Disagree = 1

From Table 8 on individual initiatives findings indicate that freedom and independence in the organisation of ATTTL is exercised and can result in good performance and make the organisation effective. On direction findings indicate that ATTTL employees believe that they are performing very important activities to train farmers increase output. Furthermore results on integrating findings indicate that there is good co-ordination between departments and units while on management support results indicate that managers of ATTTL encourage participation in decision-making and problem solving, and appear to take employees concern seriously. On control results indicate that the organisation has leaders who are bureaucratic. ATTTL operation though decentralized are still achieved through specialization, formalization and functional departments so upgrading of skills is important to make the extension system effective. Findings on identity indicate that most of the employees want to identify themselves with ATTTL because of the reputation of the company that makes them feel that they are cared for as extension professionals. Furthermore on reward system, findings show that there is no favouritism hence it is acceptable to most of its extension staff while results on communication show that it is hierarchical in order. According to Grindle (1997) the findings imply that communication pattern can be one of dissatisfying factors among ATTTL staff. This is because the pattern of communication may not favour group discussion and decision making.

Considering the above it has been shown that ATTTL staff are given the incentive they need and in so doing they can make the organisation effective.

4.4.2 Effect on production

Among the determinants of the effectiveness of an extension approach is the extent to which farmers increase production from their farms.

Figure 2 shows the average tobacco production in kg/acre from 1999 to 2002, comparing model and non-model farmers. In this figure data reveal that the average production on model farmers and non-model farmers in 1999 were 415kgs/acre and 399kgs/acre for model and non-model farmers respectively, a difference of 6kgs. In year 2000 the average production was 467kgs/acre and 391 kg/acre for model and non-model farmers respectively a difference of 78kgs. In year 2001 the average production was 457kgs/acre and 385kgs/acre for model and non-model farmers respectively, a difference of 88kgs. In year 2002 the average production was 439kgs/acre and 383 kgs/acre for model and non-model farmers respectively a difference of 56 kgs. Figure 2 further reveals that the production for model farmers has been increasing while remaining constant for non-model farmers. When comparing means of model farmers and non-model farmers on production in kgs/acre from year 1999 to 2002 using t- test ($p < .05$) there was significant difference in 2001. These results show that extension delivery services imparted to farmers through model farmers by ATTTL staff is effective in increasing yield. When ATTTL took over the function of extension services the average production was 350kg/acre, the goal is to reach 2500 kgs/hectare in year 2008.

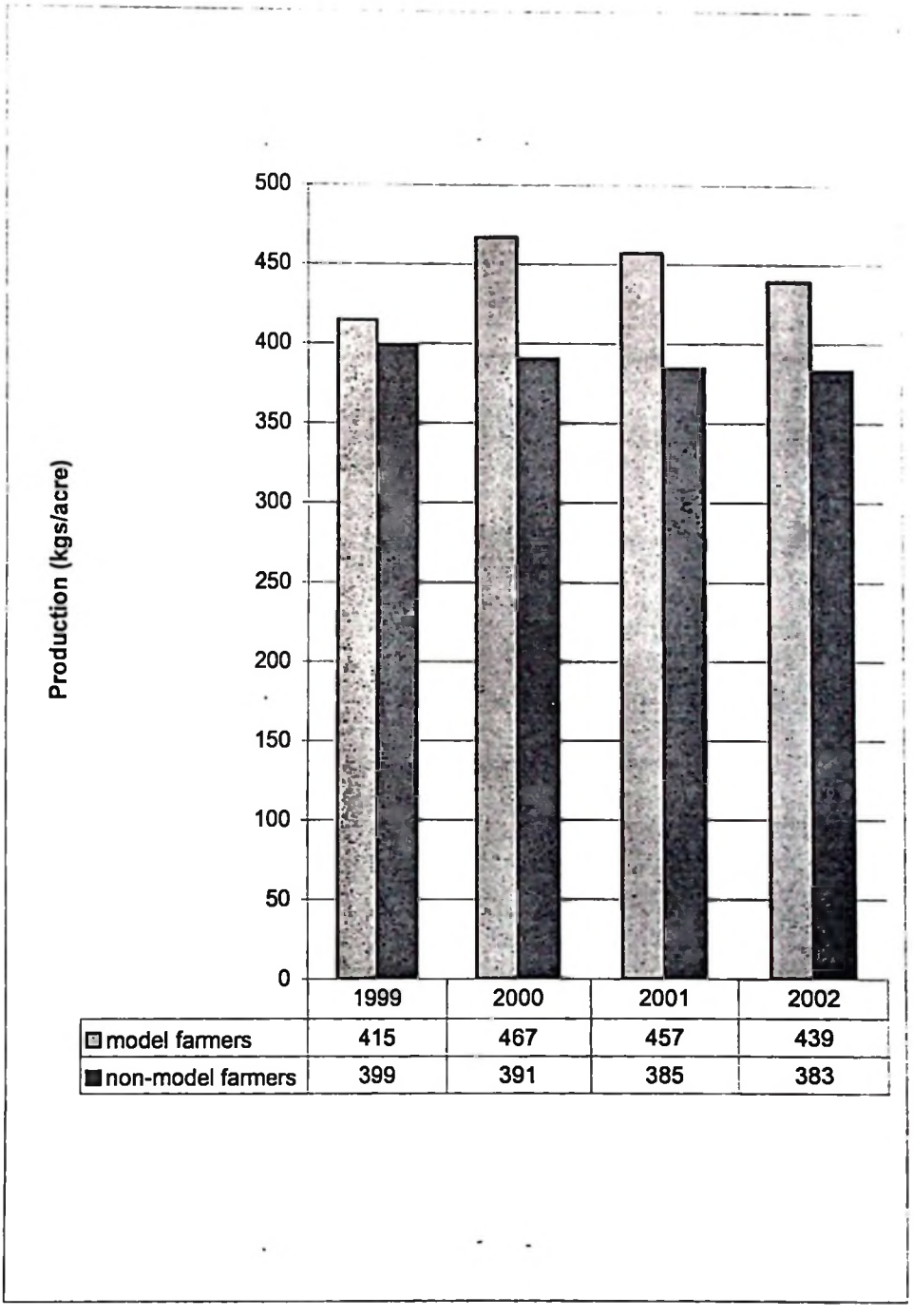

Figure 2: Average production (Kg/acre) over years

Figure 3 shows the average producer prices for model and non-model farmers from 1999 to 2002. High prices realized by farmers is an indication of good quality tobacco while low prices are for an inferior quality. Data reveal that in year 1999 the average producer price was 554Tsh./kg and 522Tsh./kg for model and non-model farmers respectively a difference of 32 TShs. In year 2000 the average producer price for model farmers was 551Tsh.kg and 586Tsh./kg for non-model farmers a difference of 35 TShs in favour of the non-model farmers. Low prices in year 2000 for model farmers compared to non-model farmers may be due to inadequate fertilizer. When fertilizer is insufficient the smaller farmers who are mostly non-model farmers are the least affected. In year 2001 the average producer price was 582Tsh./kg and 517Tsh/kg for model and non-model farmers respectively a difference of 65Tsh. In year 2002 the average producer price was 640Tsh./kg and 538Tsh./kg for model and non-model farmers respectively a difference of 102 TShs/kg. Figure 3 shows that the average quality for model farmers has been increasing while for non-model farmers it was rather stagnant. When comparing means of producer prices for model and non-model farmers from 1999 to 2002 using t-test ($p < .05$) there was significant difference in year 2001 and year 2002. These results show that extension delivery services by ATTTL are effective in improving the quality of tobacco.

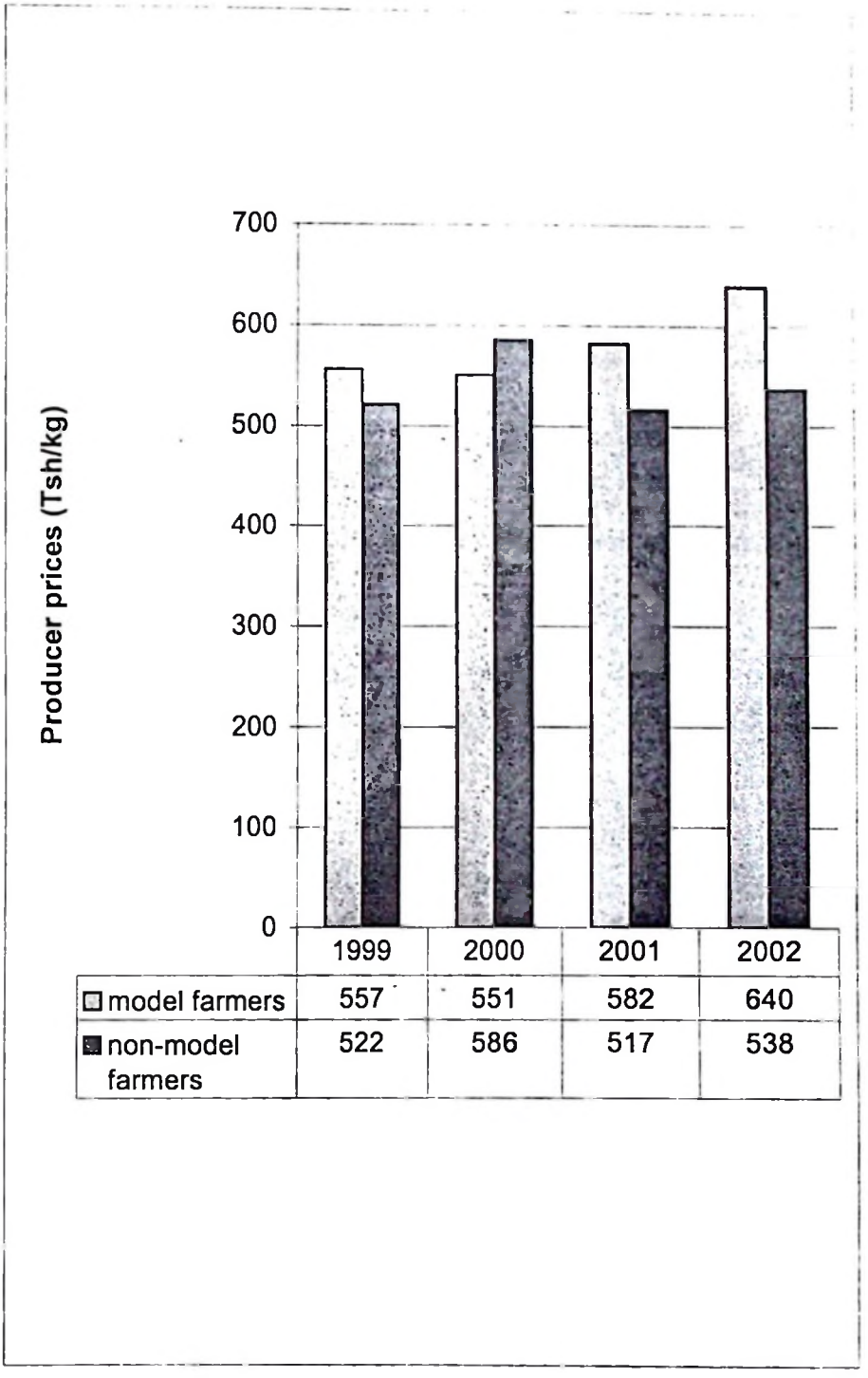

Figure 3: Average Producer Prices (Tsh/Kg) over years

A comparison of different groups for different variables namely age, level of education, total size of the farm and how long farmers have been in tobacco farming was made using

a chi-square test ($p < .05$) to see if there was an effect on production between year 1999 and 2002. Table 9 shows the statistical comparison of variables and production of kg/acre.

Table 9: Comparisons with variables and production of kg/acre

Year	Significance level
Variable: age	
1999	.230 ns
2002	.766 ns
Variable: level of education	
1999	.529 ns
2002	.421 ns
Variable: total size of the farm	
1999	.465 ns
2002	.715 ns
Variable: length of time in tobacco farming	
1999	.592 ns
2002	

NB ns = not significant at $p < 0.05$)

Statistics show that all four variables age, total size of the farm, how long farmers have been in tobacco farming and education using chi-square test ($p < .05$) had no effect on production for quantity. Table 10 shows the statistical comparison of variables of production in TShs/kg.

Table 10: Comparisons of groups with regard to variables and quality Tsh./kg

Year	Significance level
Variable: age	
1999	.137 ns
2002	.231 ns
Variable: level of education	
1999	.137 ns
2002	.231 ns
Variable: total size of the farm	
1999	.435ns
2002	.813 ns
Variable: length of time in tobacco farming	
1999	.886ns
2002	.458 ns

NB ns = not significant at $p < 0.05$)

Statistics show that all variables age, total size of the farm, how long farmers have been in tobacco farming and education using chi-square test ($p<0.5$) had no effect on the quality of tobacco produced. From the results it can concluded that increases in production in terms of quantity or quality could be as a result of advisory services being implemented by ATTTL, and not depending on variables such as age, level of education, total size of the farm and length of time in tobacco farming.

4.5 Organisational and financial sustainability ATTTL agricultural activities

The organisational sustainability of the ATTTL activities was evaluated based on the formation of farmers groups, training of both farmers and staff, meetings conducted, financial contribution of farmer groups and co-operatives and ATTTL recovery of loans. Organisational sustainability means farmers being able to be independent organisationally while financial means the ability of farmers to be financially independent with or without the organisation to run its activities. ATTTL sustainability means its ability to be able to continue with its activities.

4.5.1 Formation of farmer groups

NGOs, private firms, and farmer associations put more emphasis on working with groups because they are seen as useful mechanisms for mobilising farmers collective self-help actions which aim at improving their economic and social situations in their area. ATTTL also in its efforts to deliver extension services and knowing their importance, took the same course forming farmer groups at the same time working with co-operative societies. Formation of farmer groups has been going on in the country for sometime now. To know the success of this exercise, farmers were requested to give responses on where they got the idea of forming the groups, which are shown in Table 11.

Table 11: Where contract farmers got the idea of forming the group

From whom	No	%
ATTTL staff	49	40.0
Other extension agents	7	5.8
Village leaders	27	22.5
Opinion leaders	19	15.6
Other communities/groups	18	15.0
Total	120	100

Results reveal that farmers who gave responses that they got the idea from ATTTL constituted 40%, other extension staff 5.8%, village leaders 22.5%, opinion leaders 15.5% and other community/groups accounted for 15%. These results show that ATTTL has formed more farmer groups compared to the public extension system. This shows that the approach the company is using in its agricultural extension delivery in the formation of farmer groups is superior compared to the public. ATTTL advises tobacco farmers to join groups when contracting with them. Apart from being used for training, farmer groups are used to collect debts especially for those who tend to side sell their crop or misuse inputs because at the end it is farmers who owe themselves.

4.5.2 Training

Training of farmers and staff is important because it gives them an organisational capability. Training of farmers enhances their community leadership and management skills. ATTTL has its training programmes and liases with UDSM and TORITA for conducting courses. Farmers were asked to give responses on whether they had undergone any additional training since contracting with the company. Of the 120 farmers interviewed farmers who gave a response that they had no additional training since contracting with the company constituted 3.3% and those who had no additional training accounted for 96.7%. Under these circumstances if group leaders were not trained on management and community skills they may not know the importance of structures, roles, bylaws and rules which are important in planning, implementing and monitoring of their programs. Farmers not knowing these skills may also lead groups to disintegrate. ATITL has linkages with other institutions whereby they organise and conduct training for their staff. To know the trend ATTTL staff were requested to give opinions on their training and results are summarised in Table 12.

Table 12: On the job training for ATTTL staff

Type of training	No	%
Workshops	2	16.7
Conferences	0	0
Seminars	10	83.3
Total	**12**	**100**

Table 12 reveals that staff that had attended workshops constituted 16.7%, none had attended conferences and those who attended seminars constituted 83.3%. Based on the informal interviews with ATTTL staff it has been revealed that most of the workshops and

seminars were on agronomic practices, marketing issues and inputs not putting consideration on management and methodological skills. In addition, staff cannot make arrangements to go for further studies for example upgrading from a form four to a Certificate or a Certificate to a Diploma etc. without being replaced. In other words the company has no training program for further studies for its staff.

Unlike the private agricultural extension, the Ministry of Agriculture and Food Security plays a big role in organising, upgrading and training programs for its staff from a Certificate to PhD level without replacement. These results show that training which is important for sustainability of groups, co-operatives and ATTTL itself is not done as required by the company. Public extension may be weak in training group and co-operative leaders but they are strong in training their staff. Based on the informal interviews with the company's administrative personnel, training and production costs are some of the factors which limit such investments, however training for further studies can be an incentive and preventing workers from doing so can decrease work morale. Regular training is fundamental to an effective system. Axinn and Thorat (1972), noted that one key measure of personnel has to do with the level of training of those employed in the extension system.

4.5.3 Attending public meetings

Attending public meetings is another way of seeing the sustainability of the farmer associations and farmer groups. Most of the co-operatives and groups through their constitution arrange to meet monthly whereby needs in agricultural development are discussed. To know the trend of their attendance in meetings farmers were requested to

give a response on how many times they meet and results are summarised in Tables 13 and 14.

Table13: Attendance of public meetings for a period of one month

No. of meetings	No	%
Never attended	21	17.5
1-2 meetings	81	67.5
3-5 meetings	17	14.2
Above 5 meetings	1	0 .8
Total	**120**	**100**

Table 13 shows that contract farmers who don't attend meetings account for 17.5%, 1-2 days per month constitute 67.5%, 3-5 and above 5days per month accounted for 14.2% and 0.8% respectively. This shows that most of the farmer groups constitutionally attend meetings once or twice per month. Table 14 reveals the situation of farmer meetings for the whole year of 2002.

Table 14: Total numbers of meetings in year 2002

Number of meetings	No	%
Never attended	15	12.5
1-2 meetings	35	29.2
3-5 meetings	53	44.2
Above 5 meetings	17	14.2
Total	**120**	**100**

Table 14 shows that respondents who never attended meetings accounted for 12.5%. 1-2 meetings per year constituted 29.2%, 3-5 and above 5 meetings per year accounted for 44.2% and 14.2% respectively. Table 14 further reveals that the majority of the respondents who are 67.5% constitutionally meet 1-2 meetings per month that is equivalent to 12-24 meetings per year. Based on this criterion results show that many of

the farmers make general meetings between 3-5 days per year that is below a minimum of 12 days per year. Poor leadership and lack of community skills may contribute to this low level of meetings. This being the case, in many instances needs and roles of farmer groups, co-operatives and farmer associations in agricultural development will not be discussed. Village extension workers must learn the principles of community-organising and management skills, (Chamala and Morrtiss, 1980), in order to help the communities organise themselves for development.

4.5.4 Financial contribution of farmer groups and co-operatives

Financial sustainability of the agricultural extension activities means the ability of farmers to be independent with or without the company and also ATTTL be able to continue its activities. Among the objectives of ATTTL is to train farmers so that they can participate financially and eventually be able to deliver extension services in a sustainable manner. To this regard they need to have skilled people in financing who will enable them promote activities to generate money for their extension programs. Farmers were requested to give responses on how they felt about their financial contribution to sustain their activities and their responses are in Table 15 and 16. The term very good refers to those groups or co-operatives, which have money in their accounts and can partially operate office business. Average refers to those groups and co-operatives, which have very little money in their accounts but not enough to operate office business. Poor refer to those, which do not have money in their accounts and may owe ATTTL money in terms of credit and inputs.

Table 15: Financial status of farmer groups

Financial status	No	%
Very good	8	6.0
Average	27	22.5
Poor	85	70.8
Total	120	100

Table 15 reveals that respondents whose financial contribution is very good accounted for only 6.7%, while average and poor constituted 25.5% and 70.8% respectively. Table 16 shows the financial status of the co-operatives. Table 16 shows that respondents who's co-operative's financial contribution is very good accounted for 1.7% while for average and poor constituted 25.0% and 73.3% respectively.

Table 16: Financial status in co-operative societies

Financial status	No	%
Very good	2	1.7
Average	30	25.0
Poor	88	73.3
Total	**120**	**100**

This is an indication that the financial contributions of most farmer groups and co-operatives have a very poor base. Basing on the interviews with some co-operative leaders and farmers it has been revealed that most farmer groups or co-operatives do not contribute to a fund that they can use whenever there is an emergency or a special task. Most of them depend on the little contribution they get from ATTTL after the sale of tobacco that is too little for developing programmes. Most of the farmer groups and co-operatives cannot generate income from sales such as inputs or outputs or even from their own contributions. Though their financial situation has improved considerably since ATTTL took over the functions from the former provider, however under this situation the

co-operatives and farmer groups will have no choice except to depend on the company for its agricultural activities, for a long time to come.

4.5.5 Recovery of ATTTL financial resources

In order for ATTTL to continue their agricultural activities they need to generate money for agricultural extension programs, which has to come from sales of tobacco. Ensuring full recovery of tobacco loans extended to farmers at the time of sale of their tobacco is important for its sustainability. When Tanzania Tobacco Board (TTB) moved away from the commercial aspect of tobacco production in 1994 four companies agreed to take over this function. The practise of farmers to side-sell their tobacco crops, changing their names under different registrations during input supply and the competition among buyers made the total debt owed to companies over a period of a few years to reach an alarming 13 billion shillings. Unlike the former companies ATTTL through its farmer groups has managed to recover 95% of its credit and loans, which puts it in a good financial position to continue delivering extension services. Ensuring timely payment of levies and taxes to relevant institutions in accordance with governing procedures and registrations will also assure its existence.

4.6 Farmer's attitude towards ATTTL agricultural extension activities

According to Chapman (1994), fuelwood harvested for tobacco production exceeds the regeneration rate in Tanzania and this threatens the sustainability of the industry. It is in the context of this rising concern after deforestation that the Government and firms are undertaking campaigns on environmental conservation. ATTTL in its effort to support the programme has a Social Responsibility Programme (SRP) in which conservation of the

environment, an IPM and training program are being undertaken. On Integrated Pest Management (IPM) according to research findings it is believed that the programme is an alternative approach that helps reduce the reliance on pesticides. Based on the informal interview with ATTTL agronomist, Tanzania tobacco is not yet of very good quality. This means adequate training of farmers through a combination of extension methods is needed to make farmers increase their yields and quality. According to Kweyuh (1997), farmers in Kenya have found that returns from tobacco are not commensurate with the effort a farmer is putting in the production. Many of them feel that the inputs are grossly overpriced and usually after making deductions during marketing farmers are left with nothing. ATTTL has an input supply and marketing packages. Under this those who have contracted with servicing companies input costs are deducted through their groups and co-operatives. Unlike other packages such as barn/furnace construction, which started recently the provision of inputs, marketing, training, conservation of the environment and the IPM programme have been implemented for sometime now. This being the case, considering the Kenyan experience and the importance these packages have in the tobacco industry it is found necessary to assess the farmers attitudes to know their feelings about the above mentioned activities.

To assess farmer's attitude towards ATTTL private agricultural activities, a Lirket type interview item was used. From the items farmers were expected to indicate positive or negative attitudes, towards ATTTL private agricultural extension activities. If farmers show p ositive a ttitudes towards ATTTL agricultural development means their activities are effective in addressing farmer's problems. Farmer's negative attitude towards ATTTL agricultural extension activities implies that its services are not acceptable to farmers.

Table 17 shows results on farmers' attitudes towards ATTTL private agricultural services and their responses were summarised based on the following aspects.

a) Conservation of the environment

b) Reliability of inputs

c) Reliability of marketing

d) Compatibility of advice

e) Integrated pest management activities

Results from Table 17 show that the success of conserving the environment is below farmer's expectation. Efforts on the part of farmers to establish tree nurseries even when ATTTL provided farmers with seeds has not been successful. Negligence on tree planting on the part farmers is a factor, because many still feel that the regeneration rate of miombo woodland is high and can still sustain fuelwood. Results on the provision of inputs indicate that they give high yields and are affordable and if given at the right time are reliable for increased production. On marketing, results show that farmers are not satisfied with this arrangement of selling their produce to them and feel the marketing instrument is not fair and efficient. Lack of transparency in the marketing information contributes to this dissatisfaction.

Table 17: Farmers attitude towards ATTTL agricultural extension activities

Item	Agree		No Opinion		Disagree	
	No	%	No	%	No	%
Conservation of environment						
Initiatives to provide knowledge and seeds on tree planting will have a positive impact on environment	58	48.3	25	20.8	37	30.8
Tree planting practices trained to us by ATTTL are well known to farmers	52	43.3	20	16.7	48	40.0
Reliability of inputs						
Fertilisers given are affordable so soil improvement can be easily practised to increase yield	61	50.8	10	8.3	49	40.8
Inputs if well used on recommended basis yields and makes high profits	100	83.3	5	4.2	15	12.5
Reliability of marketing						
Marketing is efficient because there is an external classifier and the blender who grades tobacco without bias	18	15.0	6	5.0	96	80.0
We know much of the recommended practices so the ultimate grades have nothing to do with our practices	86	71.7	5	4.2	29	24.2
Compatibility of advice						
Messages given to farmers are adequate and useful and for us to adopt recommendation	90	75.0	9	7.5	21	17.5
Use of model farmers has been successful for us to learn and exchange information	92	76.7	8	6.7	20	16.7
Success of Integrated pest management						
Integrated pest management activities we follow enable us to control pests easily	100	83.3	11	9.2	9	7.5
Leaving land to fallow for more than three years has shown positive effect on pest control	12	10.0	4	104	86.7	3.0

Attitude scale: Agree = 3 No comment = 2 Disagree = 1

Findings on compatibility of the advice results show that farmers are satisfied with the way the training is being carried out. This is because messages are given in a timely

manner and address farmer's problem. Results on an Integrated Pest Management programme farmer's feel that the programme will be successful. This is because they see that the programme controls pests thereby reducing operation costs. Reducing operation costs means increasing farmers incomes. In addition, they feel pollution of the environment may be reduced.

4.7 Impact of ATTTL agriculture extension activities

The impact of the ATTTL agricultural extension activities was evaluated based on the incomes earned by farmers and the score of farmer's skills.

4.7.1. Incomes

The ultimate end of extension is to teach farmers on tobacco cultural practices so that they can increase yield and finally incomes. Table 18 shows the incomes of farmers before and after joining ATTTL.

Table 18: Incomes of farmers before and after joining ATTTL agricultural extension activities

Incomes in TShs	Before joining		After joining	
	No	%	No	%
Below 100000	31	25.8	29	24.2
100001-300000	39	32.5	53	44.2
300001-500000	27	22.5	26	21.7
500001-700000	12	10.0	8	6.7
Above 700000	11	9.2	4	3.3
Total	**120**	**100**	**120**	**100**

Table 18 shows that on the average the number of those who earn an income between Tshs100,000 - Tshs 300,000 has increased after joining ATTTL. This suggests that ATTTL activities such as increased training through demonstrations, visits, meetings and inputs coupled with credit may have contributed to this increase.

4.7.2 Farmers skills

The ultimate aim of educating farmers is to improve their skills on cultural practises so that they can increase production. ATTTL trains farmers on various cultural practices, which include nursery, field, barns and post curing practices. One way to see if they are conversant with the agricultural practices they had been trained is to test their knowledge. A high score means farmers know the recommended practices while a low score means a negative impact. During an interview 120 farmers were asked questions related to agronomic practices in tobacco production and results show that those farmers who scored below 50% constituted 42.5% and those who scored 50% and above accounted for 57.5%. Basing on informal interviews with farmers most agreed that the activities had increased their skills thereby increasing yields compared to the former providers. Though more than half of the farmers managed to score 50% and above showing a positive impact but still

there are areas which farmers showed weaknesses such as seedbed preparation, use of fertiliser, disease control, drying and processing.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Overview

The overall aim of the study was to assess private agricultural extension activities in tobacco production in Nzega District.

The study therefore sought to assess the extent to which ATTTL's agricultural extension activities are cost-effective and client oriented so as to provide suggestions and recommendations for sustainable agricultural extension services. This was accomplished by assessing the approach they used to deliver agricultural extension services, whether ATTTL agricultural extension services are more efficient and effective than the public services, whether the company is organizationally and financially sustainable, the attitudes of farmers and the impacts which have been obtained by farmers through its agricultural extension activities. This chapter provides the conclusions and recommendations derived from the study.

5.2 Conclusions

From the findings of the study the following conclusions can be made:

1. Approach used by ATTTL through the use of inputs, credit, model farmers, technical packages on a contract basis and its organisation has enabled it to provide superior extension services compared to the public though mass media has not been used effectively to support other extension methods.

2. ATTTL agricultural extension activities have proved to be organisationally and financially sustainable though for farmer groups and co-operatives sustainability has not been achieved.

3. Efficiency and effectiveness of ATTTL agricultural extension activities resulted into increased yield and quality of tobacco to model farmers who had access of the services though the situation remained constant for non-models farmers.

4. Tobacco farmers have shown positive attitude towards ATTTL agricultural extension activities except for the aspects of environmental conservation and reliability on marketing.

5. ATTTL has shown positive impact on skills and income though farmers need to get more training in tobacco cultural practices so that they can increase yields and incomes even more.

5.3 Recommendations

From the conclusions of the study the following recommendations are made:

1. Private sector involved in agricultural extension delivery should attempt to use mass media like video tape, films in combination with reading materials in the dissemination of information to back-up the other extension methods in use.

2. Private sector engaged in agricultural provision should attempt to train their staff at various levels at the same time training village, farmer group, co-

operatives leaders on management, community development skills and financial skills. Also training PRA tools and participatory learning methodology will be equally important to enhance sustainability.

3. Private sector involved in agricultural extension delivery should take active part to see that all farmers who grow tobacco on contract participate fully in their training programs so that they all benefit by increasing yield and quality.

4. The government should see to it that private providers involved in agricultural extension services create an enabling environment for farmers to participate fully in soil conservation, at the same time institute law enforcement to culprits who, otherwise through negligence, fail to comply with the set regulations. On tobacco marketing the government should see to it that there are institutional arrangements which favour transparency since contracting through cooperatives only is not enough.

5. The private sector involved in agricultural extension delivery should see to it that their extension staff devote more of their time in training farmers so that they can gain more skills and thereby increase yield and income.

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APPENDICES

APPENDIX 1

Interview Schedule for ATTTL Extension Staff at the Headquarters and at the Field Level

Instructions: The following questions are intended to provide general information about respondents such as yourself. Please CIRCLE/ FILL the appropriate to the questions.

GENERAL INFORMATION

1. Place of birth .....

2. Working station .....

3. Where does your age fall in the following groups:
    1. Less than 25 years
    2. 26 - 30 years
    3. 31 - 40 years
    4. 41 - 50 years
    5. More than 50 years
4. What is your marital status?
    1. Married
    2. Living with partner
    3. Single
    4. Divorced
    5. Separated
    6. Widowed
5. When were you first employed by ATTTL?
6. What level of formal training did you have?

1. None
2. One year course
3. Certificate course
4. Diploma course
5. First degree
6. Second degree
7. Other

7. What is you current work title?

.....

8. How long have you been in your current work title?

1. Less than five years
2. 6 - 10 years
3. 11 - 15 years
4. 16 - 20 years
5. More than 20 years

9. Where are you currently posted ?

1. Village level
2. Ward level
3. Divisional level
4. Headquarters
5 Other

10. What is your highest level of training ?

1. No formal training
2. One year course
3. Certificate course
4. Diploma

5. First degree

6. Second degree

7 Other (indicate)

11 How many farmer groups do you have?

12 Have you made any other contacts with other groups?

1. Yes 2. No

14 How many farmers do you cover in you area?

EFFICIENCY AND EFFECTIVENESS

15. Since joining ATTTL. What professional development have you undergone

	Tick	
1. Formal education	.....	Graduate degree of MSc, MA. MBA. Level
	.....	Non - degree credit courses
	.....	Sabbatic leave
	.....	Internship program
	.....	Job exchange programme
	.....	Work assignment in foreign countries

2. Non - formal education

..... Workshops

..... Conferences

..... Seminars

16. What source of technical advice on tobacco production other than reading materials do you have ?

1. Head of extension of the Association of Tanzania Tobacco Traders Ltd.

2. District Subject Matter Specialist

3. Research officers (from where)

4. Other

17. Does your extension organization offer you transport for work ?

1. Yes 2. No

18 If no, is transport allowance provided ?

1. Yes 2. No

19. If answer to question 19 is yes, what type of transport do you have ?

1. Bicycle 2. Motorcycle 3. Landrover 4. Other

20. As an extension profession how do you feel about your association ATTTL.

	Tick		
	Agree	No Comment	Disagree
(a) It is common for an extension worker to get a formal report of his/ or her work.	.....	.....	.....
(b) The goals of extension work are clear to me	.....	.....	.....
(c) I'm encouraged by my supervisors to consult them in case of problems.	.....	.....	.....
(d) Advancement of employee from one position to another is well known and followed	.....	.....	.....
(e) My supervisor's work hard to make sure that my good work is rewarded	.....	.....	.....
(f) Seminars focused on desired norms such as hard work, efficiency and effectiveness are generally conducted in my organisation	.....	.....	.....
(g) My feelings are that I can work better under private than under government			
(h) My supervisors make sure that extension workers activities are coordinated	.....	.....	.....
(i) Promotions and remuneration in agricultural extension are connected			

to performance of an extension worker	.....	.....	.....
(j) Agricultural production cannot improve without the help of the extension workers	.....	.....	.....
(k) I'm used to getting study visits outside my working station	.....	.....	.....
(l) My work allows me to solve work problems using own talents in different ways	.....	.....	.....
(m) Appointment to higher position in extension organization is based on academic qualification only	.....	.....	.....

APPENDIX 2

Interview Schedule For Tobacco Farmers

This research is intended to assess agricultural extension activities of ATTTL in Nzega District.

The findings will help to improve the extension services in the area. Your co-operation will make the findings more realistic and therefore more useful. You have been specifically chosen among the farmers of this village to give us some information, and the questions I'm just about to ask you are just to get information about agriculture. There is no passing or failing in this exercise.

The information obtained will not be told to anyone, but will only be used to find out ways to improve the agriculture situation in the village.

GENERAL INFORMATION

1. Name of the village .....
2. What is your name .....
3. What is your age
   1. Below 20 years
   2. 21 - 30 years
   3. 31 - 45 year
   4. 46 - 60 years
   5. Above 60 years
4. Marital status
   1. Married
   2. Never married
   3. Widowed
   4. Abandoned / separated /divorced
5. Number of years of schooling

6. What level of education did you attain?

7. Do you have any other type of training or education? specify.....

8. Did you have a salaried job or operated a business before joining the present farming Activity?

   1. Salaried employment
   2. Farming
   3. Other

9. For how long have you been engaged in tobacco farming ..... years

10. Total size of your farm ..... acres

11. What area of you farm are under tobacco ..... acres

APPROACH

12. State the number of times you have interacted with the extension agent during the last six months in

	Other extension worker	ATTTL. Worker
a. Home visits		
1. Once	.....	.....
2. Twice	.....	.....
3. Three times	.....	.....
4. Pour times	.....	.....
5. Five times	.....	.....
b. Meetings		

1. Once ....

2 Twice ....

3. Three times ....

4. Four times .....

5. Five times .....

c. Demonstration

1 Once ....

2 Twice ....

3. Three times ....

4. Four times ....

5. Five times and above ....

d Other (specify)

EFFECTIVENESS AND EFFICIENCY

13. What has been the production of tobacco for the last three seasons

year	acres cultivated	total kgs. Produced	Average grade	total value
1 1999	.....	....	.....	.....
2 2000	.....	....	.....	.....
3 2001	.....	....	.....	.....
4. 2002	.....	....	.....	.....

SUSTAINABILITY OF ATTTL ACTIVITIES

13 Are you one of any group member?

1 Yes 2 No

14 If yes, from whom did you get the idea of forming a group?

	Tick
1. ATTTL extension worker	.....
2 Other extension agents	.....
3. Village leadership	.....
4 Ward divisional secretariat	.....

5 Your elders .....

6 Other communities/ groups

15 How are the financial contributions in your group ?

1 Very good

2 Average

3 Poor

16. Constitutionally, how many meetings are you supposed to attend in a month?

17. How many meetings did you attend last year?

FARMERS ATTITUDES

18 What is your feeling about ATTTL activities ?

		Tick		
		Agree	No Comment	Disagree
(a)	Initiatives to provide knowledge and seeds on tree planting will have a positive impact on environment	.....	.....	.....
(b)	Messages given to farmers are adequate and useful for us to adopt recommendations	.....	.....	.....
(c)	Integrated pest management activities we follow enable us to control pests easily	.....	.....	.....
(d)	Fertilisers given are affordable so soil Improvement can be easily practised to Increase yield.	.....	.....	.....
(e)	Inputs if well used on recommended basis Increase yields and make high profits.	.....	.....	.....
(f)	Tree planting practices trained to us by ATTTL are well known to farmers to practice.	.....	.....	.....
(g)	Marketing is efficient because there is an external classifier who grades the tobacco without bias.	.....	.....	.....
(h)	We know much of the recommended practices so the ultimate grades have nothing to do with our practises	.....	.....	.....
(i)	Use of model farmers has been successful for us to learn and exchange information	.....	.....	.....
(j)	Leaving land to fallow for more than three years has shown no positive effect on	.....	.....	.....

IMPACT

19 What is the estimated income per season from tobacco before joining ATTTL.

	Tick
1 Below Tsh. 100,000	.....
2 Between Tsh. 100,000 - 300,000	.....
3 Between Tsh. 300,000 - 500,000	.....
4 Between Tsh. 500,000 - 700,000	.....
5 Above Tsh. 700,000	.....

20 What is the estimated income per season after joining ATTTL.

	Tick
1 Below Tsh. 100,000	.....
2 Between Tsh. 100,000 - 300,000	.....
3 Between Tsh. 300,000 - 500,000	.....
4 Between Tsh. 500,000 - 700,000	.....
5 Above Tsh. 700,000	

21. Do you know how the following practices related to tobacco production are carried out ?

Practise	Relation to official recommendation	Score
	Correct	Incorrect
(a) Land preparation		
1. When	.....	.....
2. How	.....	.....
(b) Seedbed preparation and sowing		
1. When	.....	.....
2. How	.....	.....
(c) Seedbed management	.....	.....
(d) Use of fertilizer		
1. Type	.....	.....
2. Rate	.....	.....
3. When	.....	.....
(e) Method of transplanting		
1 When	.....	.....
2 How	.....	.....
(f) Spacing	.....	.....
(g) Weed control		
1. Time	.....	.....
2. When	.....	.....
(h) Pest control		
1. How	.....	.....
2. Rate of chemicals	.....	.....
3. Name of three pests	.....	.....

(i) Disease control

1. How ....

2. Rate of chemicals ....

3. Name of three diseases ....

(j) Harvesting

1. When ....

2. How ....

(j) Drying.

(k) Processing. ....

(l) Transport ....