AN ASSESSMENT OF VARIETAL IMPROVEMENT AND EXTENSION SERVICES IN COTTON PRODUCTION IN MAGOYE DISTRICT, ZAMBIA.
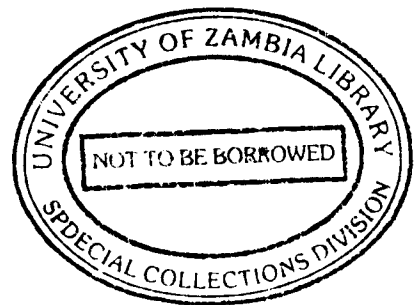
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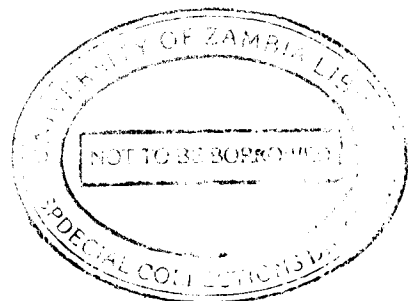
By

FREDRICK K. MULENGA

In partial fulfillment of the requirement for the degree of Bachelor of Agricultural Sciences.

ACKNOWLEDGEMENTS

I am deeply indebted to a number of people who helped me both directly and indirectly in the various stages of processing this report.

Firstly, my sincere and heart felt thanks go to my supervisor Mr. E. Kuntashula. His patience and guidance were my sources of inspiration.

I wish to thank all the members of staff of the department of Agricultural Economics, for their comments and suggestions, members of staff at various institutions and organizations for their support and cooperation during my data collection.

I would not forget to thank my family for moral, spiritual, and material support I have received throughout the course of my study at UNZA. Special thanks go to my cousin Michael Kasepa for the valuable translations.

Lastly, my warm and casual gratitude goes to Zangiwe, for the love, comfort, patience, guidance (though I was stubborn sometimes), support and tolerance. I feel particularly indebted to the following close friends: Kapapula Paul Kanyembo, Tembo Robert and Shadunka Mweemba and others too numerous to itemize.

I dedicate this work to my late father (Brig. Gen. Stanley F. Mulenga), My late mum (Joan Kanyanta Mulenga), My late sister (Yvonne Puti Mulenga), My brother (Stanley Musanda Mulenga) and my sisters (Ivy Kabwe Mulenga and Emily Mubanga Mulenga).

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS

CSO	-	Central Statistical Office
FSRP	-	Food Security Research Project
GMO	-	Genetically Modified Organism
IFAD	-	International Fund for Agricultural Development
IRCT	-	Institute de Researcher du Cotton at Textiles
LINTCO	-	Lint Company Zambia
MACO	-	Ministry of Agriculture and Cooperatives
PHS	-	Post Harvest Survey
SPSS	-	Statistical Package for Social Scientist
ZNFU	-	Zambia National Farmers Union

ABSTRACT

AN ASSESSMENT OF VARIETAL IMPROVEMENT AND EXTENSION SERVICES IN COTTON PRODUCTION IN MAGOYE DISTRICT, ZAMBIA

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Mr. E. Kuntashula

Before liberalization, the cotton industry was run by the state owned Lint Company of Zambia (LINTCO) from 1977-1994. After liberalization in the late 1994, production of cotton rose from 20,000mt to over 100,000mt in the 1998 season. The study was conducted to assess the impact of varietals development and extension services in cotton production. The specific objectives were to determine whether farmers are influenced by cotton seed companies in terms of what varieties to use, to determine the level of farmer knowledge about new varieties and to assess what extension services farmers receive about cotton production. The study was conducted in Magoye District in Southern province.

The study found out that most farmers are members of out grower schemes and as members they receive loans in form of inputs and extension services. These farmers are not allowed to grow any other variety than as given in the package. The study also revealed that farmers are aware of other varieties on the market some being CDT1 and CDT 2. It also showed that farmers receive extension services mostly form the cotton seed company (i.e. Dunavant) in the form seminars and field demonstrations. Some of the benefits received by the farmers include increased farmer income and good farm practices.

The study finally recommended that it is important to increase the number of educated farmers in the area by providing for example adult literacy classes. This would speed up the rate at which extension information is provided and applied. In order to improve on variety awareness government should fund research and development so that a number of varieties can be introduced on the market. By introducing a levy along the marketing chain can help in pooling resources needed for research and development. The types of extension methods used should be increased to include additional types of methods such as mobile training units and popular theatre. Probably the introduction of GMO seed such as Bt cotton can help increase yields and quality, reduce costs, increase profits and improve the environment.

CHAPTER ONE
INTRODUCTION

1.1 Introduction and Background

Cotton has since the 1970's been one of the most popular cash crops in Zambia. It has played an increasing important role in Zambia as a cash crop. Studies by the World Bank and a more recent development project work by the international fund for agricultural development (IFAD) established the robust comparative advantage of cotton in efficient use of Zambia's scarce domestic resources (Keyser, 1996l; IFAD, 1999). Cotton has also proved to be profitable to small-scale farmers as evidenced by the fact the cotton production in the country has been on the increase for instance from 36,536mt tones in 1990 to 110,000mt tones in 1998 (FSRP working paper No 1, 2000). This means that cotton has been profitable and providing incomes to more than 86,000 farmers who have been growing it, (PHS 1996, CSO). Cotton has relatively low input requirements of only K40, 000/lima with a gross margin of about K160, 000/lima, (ZNFU crop budgets, 2000/2001). Since the initiation of major agricultural reforms in the early 1990's, Zambian cotton production and processing has grown rapidly and now ranks as one of the most important sources of crop income among smallholder farmers and agribusiness firms in the key agricultural production regions of the country. The success of the cotton industry has been due to liberalization of the economy in 1994. Before liberalization, the cotton industry was run by the state owned Lint Company of Zambia (LINTCO) from 1977-1994. Lintco on behalf of the Zambian government purchased seed cotton from the farmers at a fixed price provided certified seed, pesticides, sprayers and bags and provided extension services to improve productivity.

Cotton production is one unquestioned success in Zambia's turn towards a market economy. After liberalization in the late 1994, production rose from 20,000mt to over 100,000mt in the 1998 harvest year. After collapsing to less than 50,000mt in 2000, it has risen steadily and may have approached 150,000mt in 2003. (Tschirley, Zulu and Shaffer, 2004). Over 1998- 2000, exports of cotton and textiles were first among all agricultural exports (Export Board of Zambia, 2001). The two closet competitors to cotton during this time, fresh flowers and sugar,

are primarily produced on large operations. While cotton is almost entirely a smallholder crop, its potential role in poverty alleviation and food security is thus very large.

Farm yields in Zambia appear to be relatively good compared to most southern and eastern Africa producers. Dunavant claims average yields in 2002 of more than 600kg/ha and 900kg/ha in eastern province. Clark cotton like wise claims yields above 900kg/ha in the same province. During the 2000/03 marketing season, international prices rose thus making it possible for ginning companies to provide a high rate of lint. Research has shown that the projected prices of the 2004/05 marketing season are yet to decrease and this might lead to decrease in production. Past patterns show long decline followed by only partial recovery over 2-3 years, resulting in a steady decline in prices.

In spite of these achievements, the cotton sector has in the past 3 years been plunged into crisis. Compared west and central Africa, yields continue to lag behind and our lint quality is substantially lower than in Zimbabwe. Since liberalization from 1994 up to date, only one new variety has been released i.e. Ngwezi in 1995 and this variety have not been taken up (Tschirley, Zulu and Shaffer 2004). Current varieties were released over 10 years ago.

Prior to and immediately after independence in 1964, Zambia relied on the Central Africa research institute based at Kadoma in Zimbabwe for its varieties. These were mainly of the Albar type. Early variety releases from the newly formed Zambia cotton research section (supported by UK cotton research cooperation) were *Ezabel* and Impala in 1975 and *Chureza* and *Chilala* in 1978. Between 1975 and 1980, lacking external support, breeding work stopped and some varieties became mixed. From 1980 to 1989 Zambia's cotton breeding program was supported by the French bilateral technical agreement through the institute de researcher du cotton at textiles (IRCT). During this period 3 commercial varieties were released, *Chureza 87*, CD 14 (*Ngwezi*) and F 135 and earlier varieties were withdrawn. Currently *Chureza* and F 135 are in commercial production, (Zambia cotton sector review, MACO, October 2000)

Technology development in Zambia cotton industry is lagging critically and threatens the ability of the industry to survive. The development of new germplasm has nearly come to a

halt. There is currently no publicly funded varietals research program in the country, and cotton varieties currently available to out growers from the ginning firms were produced in the mid 1980 (*Chureza*) or early 1990's (F135). Farmers not supported by ginners mostly grow varieties that have not been officially withdrawn by public agencies.

1.2 Statement of the Problem

Due to liberalization of the cotton industry, there has been some expansion of the industry from 1994-1998, and this has been due to improved input distribution to smallholders. The introduction of the out grower programs to provide extension services and input on loans to smallholder farmers has also been another factor to this increase. Through these out grower programs, the cost of inputs is deducted from the revenue paid to the farmers when they sale their seed cotton to the ginners or their designated assemblers. This has resulted in improved repayment rates of about 86% and cotton production increased thus. Another reason that has led to this increase is the rise in the international cotton prices that have led to ginning companies being able to pay their farmers a higher rate on their cotton lint.

Cotton has also proved to be profitable to small scale farmers as evidenced by the fact that production in the country has been on the increase e.g. from 36,536 tones in 1990 to 110,000mt tones in 1998 (FSRP working paper No 1). Also the area allocated to cotton by small-scale farmers has increased over the same period from 3% of the total area cultivated to 7% of the total area cultivated in 1998.

However, this may not continue to be so. Farm yields and ginning ratios in Zambia continue to lag well behind those of Zimbabwe and west and central African countries, and the lint quality is substantially lower than in Tanzania and Zimbabwe. Varietals development can have major impacts on farm yields and ginning ratios. The fact that no other new varieties have been released and not been taken up since liberalization does not bode well for the sectors future performance (Tschirley, Zulu and Shaffer, 2004). It's clear that farmers are missing out on yield and high lint quality that is needed to bring in the needed income to smallholder farmers. Therefore there is need to find out how the development, dissemination and maintenance of

new varieties and consistent delivery of high quality extension assistance is lacking in the cotton industry.

1.3   Study Objectives

General Objective

To determine the impact of varietal improvement and the provision of extension services to small-scale cotton framers.

Specific Objectives

1. To determine whether farmers are influenced by cotton seed companies in terms of what varieties to use.
2. To determine the level of farmer knowledge about new varieties.
3. To assess what extension services farmers receive about cotton production

1.4   Justification of the Problem

The research will help the policy makers to formulate policies which will enable the small-scale cotton farmers to have access to good seeds and extension services. This study will also help sensitize the small-scale cotton farmers on the different types of cotton seed. The study will also help the government to identify areas in they are lacking so that they can provide efficient services to the nation in terms of cotton production. The information will also help the donor community, since it has the potential to reduce poverty and contribute to the national development.

1.5   Limitations

Due to limited financial resources, the Researcher could only manage to collect data from a small sample of farmers. Only thirty (30) farmers were interviewed during the household

survey thus limiting the generalizability of the findings. A large sample of more than 30 would have been desirable to have more generalizable results.

1.6 Organization of the Thesis

This thesis is made up of five chapters. The first chapter basically outlines the introduction and the background; it also talks about the problem statement and the objectives. Chapter two brings out the different literature on cotton production and outlines what has been done with regards to the statement of problems. Chapter three talks about the methodology which was used during the analysis and brings out how the respondents were selected, the sample size and the study area, the procedure, data collection instrument, it also talks about the program used to analyze the data. Chapter four presents the results and interpretation of the research findings and this talk about the general characteristics of small-scale cotton farmers and their demographics. Chapter five brings out the conclusion and some recommendations.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature on technology development in Zambia's cotton industry, factors that influence seed quality and income of small-scale cotton farmers, issues affecting agricultural exports as well as issues on the cotton Act and Bt cotton.

2.2 Literature Reviews

Zambia lies at the centre of an important cotton growing region. The table below gives an indication of the relative importance of cotton in the countries in the region.

Estimated region cotton production -2000

Country	tons/annum
Mozambique	35,000
Tanzania	60,000
Malawi	40,000
South-Africa	29,000
Zambia	75,000
Zimbabwe	260,000

Source: Haantuba, 1997

Technology development in Zambia cotton industry is lagging critically and threatens the ability of industry to survive. The development of new germplasm has nearly come to a halt. There is currently no publicly funded varietals research program in the country, and cotton varieties currently available to out growers from the ginning firms were produced in the mid

1980 (*Chureza*) or early 1990's (F135). Farmers not supported by ginners mostly grow varieties that have not been officially withdrawn by public agencies. (Haantuba, 1997).

Mungaila (1992) evaluated factors that influence seed quality and income of small-scale cotton farmers, his major findings was that with the liberalization of the economy, the number of companies involved in production and marketing of cotton have increased. However, most of these cotton buyers were not providing inputs, credit and extension services as a way of promoting cotton production

The financial reporter (1992) went further and stated that the expansion of the agricultural exports sector would involve breaking into new markets for existing products and also developing both new products and new markets. The financial reporter observed that such activities as international product promotion should be undertaken and that this required an effective agency to facilitate exporters' access to foreign market. This could be done by way of providing knowledge about these markets, foreign market legislation and study of marketing techniques, conditioning, packing, storing, and quality control.

1997/1998 post harvest survey (PHS) data indicate that only an estimated 6,500 out of nearly 86,000 farmers cultivated more than 1ha of cotton and obtained yields of more that 1mt/ha. Installed ginning capacity in Zambia is about 150,000 tons of seed cotton, representing a major opportunity to expand. Yet total ginnings last year were about 84,000 tons, and this was probably lower in the 1999/2000 harvest season. This creates an almost irresistible incentive for firms to use whatever means at their disposal to increase output in order to reduce unit-ginning costs. As long as functioning ginning capacity remains so far above production, it seems likely that the industry will continue to suffer from a loan recovery problem and low yield potential. (Zambia Food Security Research Project, 2000).

Cotton marketing Act- Introduction of the cotton marketing Act will help regulate the industry. For instance, Zambia's annual ginning capacity stands at 120,000metric tones whereas production of seed cotton has never gone above 110, 000metric tones and continues to decline further. This situation has led to the scramble of cotton by cotton promoters and has brought in

fighting and disharmony in the marketing of cotton. (Cotton Seed Breeding, Principles of Production, Cotton Pests, Beneficial Insects and Pesticide Use, Peak Performance and Cotton Gross Margins Guide for Cotton Extension Agents, 2003). The bill will bring about harmony and enabling environment for development of the sector.

Another factor affecting the sector is that profitability is going down. The future of the 86,000 Zambian cotton growers and companies like Dunavant is further critically threatened by the introduction of genetically modified cotton, which Zambia's major importers like the Republic of South-Africa are about to start growing. The introduction of genetically modified cotton in these countries will mean that they will be producing cotton yielding up to 3 times more than Zambian cotton. This will mean that prices of cotton will further go down and that unless Zambia grows GM cotton, is cotton will be pushed out of the market for it will be relatively expensive

CHAPTER THREE
METHODOLOGY

3.1   Introduction

This chapter presents the sampling methodology that starts by discussing the study site/ area background, followed by the data collection procedure, then followed by the sample selection, survey process and/ types of data collected and data limitations that were faced during the collection process. The chapter ends by looking at the data analysis and processing procedures that were used.

3.2   Study Site/ Area of Background

The study was conducted in Magoye. Magoye is a District in the Southern Province of Zambia. The area that was sampled is called Dumba area is characterized by small-scale farmers that mainly grow cotton and other cash crops like sunflower and cowpeas. Magoye was chosen because it is centrally located and that the area is also characterized by small-scale farmers who grow sunflower, cowpeas, maize and a lot of cotton.

3.3   Data Collection Procedure

For data collection purposes, questionnaires were used. This is because they allow for a direct interaction between the respondents and the instrument in a representative sample of a population. Questionnaires were used in a face-to-face situation to solicit responses from respondents and were collected immediately after the interview. Secondary data was obtained from cotton commercial companies. The questionnaire consisted of closed and open ended questions to allow for consistent responses.

3.3.1 Sample Selection

The study population comprised of a random sample of 30 small scale cotton farmers. The sampling unit was the individual farmer. Simple probability sampling was used. The house hold head was the respondent that was interviewed.

3.3.2 Survey Process and Types of Data Collected

This was a descriptive study which used primary data that was elicited through the use of self administered structured questionnaires and this was supplemented by secondary data which was obtained from the ministry of Agriculture and Cooperatives (MACO), Food Security and Research Project (FSRP) and cotton seed companies. Several types of data was collected on demographics, on education levels, on years of growing cotton, on loan acquisition, on out grower membership, on acquisition of cotton varieties, variety awareness, on source of variety information, on provision of extension services, on types of extension methods and on benefits of extension services using a questionnaire (see appendix 1).

3.3.3 Data Limitations

A few problems were encountered during the data collection process. The first problem that was encountered was that of language which may have affected quality of the data that was collected. No register was obtained from the district MACO office on the distribution of cotton farmers.

3.4   Data Analysis and Processing

Statistical Package for Social Scientists (SPSS) was used to analyze both qualitative and quantitative data to make the study more meaningful. The questionnaires were edited and coded after collection and the information was entered in Excel and then copied to SPSS for

analysis. Percentages, graphs and frequencies were the main features of the programme that were employed in the analysis.

CHAPTER FOUR
FINDINGS AND DISCUSSSION

4.1   Introduction

This chapter presents the findings of the study. It begins with the presentation of the demographic characteristics of the study area on which the findings are based.

4.2   Demographic Characteristics

Table 1 below shows that in terms of age, 13.3% of the respondent belonged to the age group 21-30 years, 47% of the respondents belonged to the age group 31-40years and 40% were above 41years of age. This shows that more than 80% of the respondents were 31years or above.

Table 1: Distribution of Respondents by Age

Age	Frequency	Percentage (%)
21-30	4	13.0
31-40	14	47.0
Above 40	12	40.0
Total	30	100.0

Source: Own Survey Data

In terms of educational status, 20% of the respondents attended primary school and 37% had completed primary school. 24% of the respondents had attended secondary school and only about 3% attended and completed college respectively. The table also shows 13% of the respondents had no formal education (See Table 2 below). This shows that most of the farmers are illiterate. These low levels of education may have serious effects in adoption of new technology and appreciation on information.

Table 2: Distribution of Respondents by Education

Education Level	Frequency	Percentage
Attended Primary	6	20.0
Completed Primary	11	37.0
Attended Secondary	7	24.0
Attended College	1	3.0
Completed College	1	3.0
No Formal Education	4	13.0
Total	30	100.0

Source: Own Survey Data

Table 3 shows that in terms of marital status, the majority of respondents were married. The table shows that more than 70% of the respondents are married and 3% of the respondents are single, widowed, and separated respectively. It also shows that 17% of the respondents are in polygamous union. This shows that most of the respondents were married.

Table 3: Distribution of Respondents by Status

Marital Status	Frequency	Percentage
Single	1	3.0
Married	22	74.0
Widowed	1	3.0
Separated	1	3.0
Polygamous Union	5	17.0
Total	30	100.0

Source: Own Survey Data

The Table 4 below shows the number of years of growing cotton. Most of the respondents have been growing cotton for 2-4 years while 43% of the respondents have been growing cotton for over 5years. This shows that the number of farmers growing cotton has been increasing. This could be attributed to higher returns received by the farmers.

Table 4: Years of Growing Cotton

Years of growing Cotton	Frequency	Percentage (%)
Less than 2years	2	7.0
2-4years	15	50.0
5-7years	8	26.0
Above 8years	5	17.0
Total	30	100.0

Source: Own Survey Data

In terms of loan acquisition, Table 5 below shows that most of the respondents did get loans for the growing of cotton. Most of these farmers get their loans farm cotton seed Companies. This is attributed to the fact that with liberalization of the market and the coming of Company's like Dunvant, a lot of small-scale farmers joined out grower schemes in which loans are given in terms of inputs for the growing of cotton.

Table 5: Loan acquisition

Response	Frequency	Percentage (%)
Yes	21	70
No	9	30
Total	30	100.0

Source: Own Survey Data

4.3 Influence of Cotton Seed Companies on Variety Used

The table shows that 80% of the respondents belong to an out grower scheme while 20% of the respondents are not under an out grower scheme (See Table 6 below). Most of the respondents belong to the Dunavant out grower scheme and used *Chureza* cotton variety during the last season.

Table 6: Out grower Membership

Member	Frequency	Percentage (%)
Dunavant (Z) Ltd	24	80.0
Not Applicable	6	20.0
Total	30	100.0

Source: Own Survey Data

In terms of acquisition of cotton Varieties, the table below shows that more than 75% of the respondents receive their varieties from the out grower scheme by virtue of being members of the out grower scheme as can be seen in Table 7. The table also shows that most of the respondents are not permitted to grow any other varieties other than those given in the package.

Table 7: Acquisition of cotton Varieties

Response	Frequency	Percentage (%)
Buy	1	3.0
Out Grower	23	77.0
Not Applicable	6	20.0
Total	30	100.0

Source: Own Survey Data

4.4 Farmer Knowledge on Varieties and Extension Services Received about Cotton Production.

More than 70% of the respondents are aware of other varieties on the market and about 27% of the respondents are not aware of other varieties o the market (See Table8 below). This could be attributed to the fact being a member of an out grower scheme, members showed a higher percentage in awareness of varieties. Some of the varieties that were mentioned include F-135, CDT I and CDT II though these two varieties are under trials at the pre-released stage.

Table 8: Variety Awareness

Response	Frequency	Percentage (%)
Yes	22	73.0
No	8	27.0
Total	30	100.0

Source: Own Survey Data

Table 9 shows that in terms of the source of information of the varieties used by small-scale cotton farmers, most of the respondents are aware of other varieties than those they grow and get their information from the cotton Seed Company or Dunavant by virtue of being members of on out grower scheme and only 17% are able to access information on Extension Services from MACO. This might be attributed to the success of the Distributor system.

Table 9: Source of Variety Information

Response	Frequency	Percentage (%)
MACO	3	10.0
Cotton Seed Company	8	60.0
Extension Services	5	17.0
Seed Co. & Extension Services	2	7.0
MACO & Seed Company	1	3.0
Missing	1	3.0
Total	30	100..0

Source: Own Survey Data

The table below shows farmer responses to provision of Extension Services. The majority of the respondents i.e. 65% of the received extension services from the out grower scheme and 27% of the respondents receive extension services from MACO as can be seen in Table 10 below. As mentioned above, this might be attributed to the success of the distributor system. On the contrary, governments' provision of Extension Services in the area is still low.

Table 10: Provision of Extension Services

Response	Frequency	Percentage (%)
MACO	8	27.0
Cotton Seed Company	20	67.0
MACO & Cotton Seed Co.	2	6.0
Total	30	100.0

Source: Own Survey Data

In terms of types of Extension methods used by the farmers in the area, about 70% of the respondents get their Extension Services through Field Demonstrations and Seminars and 20% only receive Field Demonstrations as Extension Services (See Table 11 below). Field Demonstration are preferred to Seminars because farmers are able to relate to what's being

demonstrated by engaging all their five senses. Very few farmers receive Extension Services in the form of Seminars. This could be attributed to the low levels of education in the area.

Table 11: Type of Extension Methods

Response	Frequency	Percentage (%)
Seminars	3	10.0
Field Demonstrations	21	70.0
Seminars and Field Demonstrations	6	20.0
Total	30	100.0

Source: Own Survey Data

Table 12 below shows the different type of Extension Services that farmer's receive .The majority of the respondents i.e. about 80% experience increases in farmer income and good farm practices and 20% of the respondents experience increases in farm income.

Table 12: Benefits of Extension Services

Response	Frequency	Percentage (%)
Increased Farmer Income	6	20.0
Good Farm Practices	12	40.0
Increased farmer income and good farm practices	12	40.0
Total	30	100.0

Source: Own Survey Data
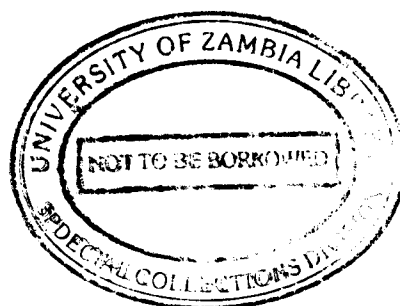
CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1   Introduction

This chapter highlights the conclusions that have drawn on the study based on the information obtained from the survey.

5.2   Conclusions

It can be concluded that most of the farmers belonged to an out grower scheme. In an out grower scheme, farmers are entitled to loans in the form of inputs and Extension Services so as to improve services. Most of the members that belong to an out grower scheme grow the *Chureza* variety. This is so because growing other varieties would bring about contamination of the cotton lint that reduces the quality of the lint and there by greatly reducing the price of cotton on the world market. The same farmers also revealed that being members of an out grower scheme, they are not permitted to grow any other varieties apart from that provided in the package. This may be act as a control mechanism on the part of the cotton seed company.

It can also be concluded that farmers are aware of other varieties on the market. The only hindrance in the use of these varieties is the fact most farmers are not able to support themselves in the growing of cotton and so need to belong to an out grower program. Belonging to this program would mean only growing the varieties given. The slow pace at which researchers are carrying out their trails of the pre-released seed i.e. CDT I and CDT II is also affecting the need and use of these varieties.

It can also be concluded that a few of the respondents received extension services provided by MACO through extension officers while most of them got them from Dunavant through the out grower scheme. Extension Services were in the form of Seminars and Field Demonstrations. A combination of Seminars and Field Demonstrations were the main forms that were received by the respondents with only a few them receiving field demonstrations. Although Extension Services are being provided, a lot needs to be done on the part of government. A few of the

respondents experienced increases in farmer income, while most of the farmers experienced increased farmer income and good farm practices as the benefits of Extension Services.

5.3   Recommendations

The first recommendation would to be to increase the number of educated farmers in the area by providing for example adult literacy classes. These will speed up the rate at which extension information is provided and applied.

In order to improve on variety awareness government should fund research and development so that a number of varieties can be introduced on the market. By introducing a levy along the marketing chain can help in pooling resources needed for research and development.

The types of extension methods used should be increased to include additional types of methods such as mobile training units and theatre.

Probably the introduction of GMO seed such as Bt cotton can help increase yields and quality, reduce costs, increase profits and improve the environment. Research shows that Bt cotton has the ability to kill certain insect pests such as boll worms without any application of any insecticides. This reduces the marketing costs of the farmer and hence produces good quality and larger outputs. This will depend on how fast government puts up a regulatory framework on the use of GMO's.

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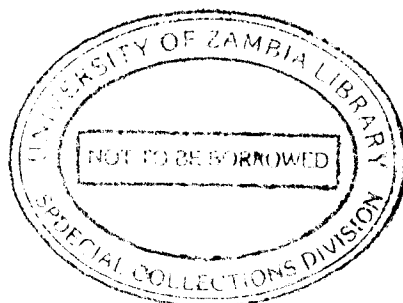
APPENDICES

APPENDIX 1: QUESTIONNAIRE FOR SMALL SCALE FARMERS

INSTRUCTIONS

In all the sections of the questionnaire please tick ( ) in only one box
unless specified and for the questions with spaces, write your responses
as clearly and as briefly as possible in the spaces provided.

For example

When did Zambia get its independence?   Official use only

(i)	1960	[ ]
(ii)	1968	[ ]
(iii)	1964	[ ]
(iv)	1970	[ ]

SECTION A:

(i)   Personal details (Background)

1.   What is your sex?
   i)   Male   [ ]
   ii)   Female   [ ]

2.   What is your age range?
   i)   21 - 30 years   [ ]
   iii)   31 – 40 years   [ ]
   iv)   above 40 years   [ ]

3.   What is your education level?
   i)   Attended primary   [ ]
   ii)   Completed primary   [ ]
   iii)   Attended secondary   [ ]
   iv)   Attended college   [ ]
   v)   Completed college   [ ]
   vi)   University   [ ]
   vii)   No formal Education [ ]

4.   What is your marital Status?
   i)   Single   [ ]
   ii)   Married   [ ]
   iii)   Widowed   [ ]
   iv)   divorced   [ ]
   v)   Separated   [ ]
   vi)   In polygamous union [ ]

5.   What is your occupation?

    i)   Framer   [ ]
    ii)   Distributor   [ ]
    iii)   Other/Specify……………………………

(ii) SPECIFIC INFORMATION

6.   For how long have you been farming?
    i)   Less than 2years   [ ]
    ii)   2 – 4 years   [ ]
    iii)   5- 7 years   [ ]
    iv)   More than 8 years [ ]

7.   What is the total farm land?
    i)   Less than 2ha   [ ]
    ii)   2-4 ha   [ ]
    iii)   8 ha and above   [ ]

8.   Which crops do you grow?
    i)   cotton   [ ]
    ii)   Tobacco   [ ]
    iii)   Maize   [ ]
    iv)   Other specify……………………………

9.   How many ha did you put under cotton last season?

    i)   Less than 2 ha   [ ]
    ii)   2-4 ha   [ ]
    iii)   5-7 ha   [ ]
    iv)   8 ha and above   [ ]

10.   How long have you been growing cotton?
    i)   Less than 2 years [ ]
    ii)   2-4 years   [ ]
    iii)   5-7 years   [ ]
    iv)   Above 8 years   [ ]

11.   Did you get any loans for the growing of cotton?
    i)   Yes   [ ]
    ii)   No   [ ]
    iii)   N/A   [ ]

12.   If yes to question 11, from whom?

i)	Bank	[ ]	
ii)	Cotton seed company	[ ]
iii)	Relatives	[ ]
iv)	Friends	[ ]

14. Are you under an out grower scheme?
    i)   Yes   [ ]
    ii) No   [ ]
    iii) N/A   [ ]

15. If yes to question 14 with whom?
    i)   Dunavant Zambia Limited   [ ]
    ii) Amaka   [ ]
    iii) Clark cotton   [ ]
    iv) China-Mulugushi Teitiles   [ ]

16. What benefits do you gain or obtain from the out grower scheme?

    i) Packaging (bags)   [ ]
    ii) Inputs   [ ]
    iii) Extension services   [ ]
    iv) Transport Services   [ ]
    v) Other/Specify...................................

17. Did you get to sign the contract because of the credit offered?

    i)   Yes   [ ]
    ii) No   [ ]
    iii) N/A   [ ]

17. Do you grow any of the following varieties?

    i)   Chureza   [ ]
    ii) F-135   [ ]
    iii) Ngwezi   [ ]
    iv) All of the above   [ ]
    v)   Other/ Specify........................

18. Where do you get these Varieties?
    i)   Buy   [ ]
    ii) Out Grower scheme [ ]
    iii) Old Stock   [ ]
    iv) Friends/ relatives [ ]
    v)   Other/ specify.................................

19.   If it's from an out grower scheme, are you permitted to grow any other variety, apart from that given in the package?
        i)   Yes   [ ]
        ii) No   [ ]
        iii) N/A   [ ]

20.   Are you aware of any other varieties on the market apart from the ones mentioned above?

        i) Yes   [ ]
        ii) No   [ ]
        ii) Other/ specify…………………………….

21.   If yes, what are these varieties?

…………………………………………………………………………………….

22.   Where did you get the information on these varieties?

        i)   MACO   [ ]
        ii) Cotton Seed Company   [ ]
        iii) Extension services   [ ]
        iv) Other/ Specify…………………………….

23.   Do you get any extension services in growing cotton?
        i) Yes   [ ]
        ii) No   [ ]
        iii) Other/ Specify ………………………….

24.   Who provides these extension services?

        i)   MACO   [ ]
        ii)   Cotton Seed Company   [ ]
        iii)   Other specify……………………………………………….

25.   What type of extension services do you get?

        i)   Seminars   [ ]
        ii)   Field demonstrations   [ ]
        iii)   Other specify…………………………………………….

26. What benefits do you gain from extension services?

    i) Increased Yields   [ ]

    ii) Increased farmer   [ ]

    iii) Good farm practices   [ ]

    iv) Other/specify...