THE UNIVERSITY OF ZAMBIA

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GEOGRAPHY DEPARTMENT

GEO 474 PROJECT REPORT

TITLE: CHALLENGES OF LIVESTOCK RAISING AMONG SMALL-SCALE FARMERS IN SOUTHERN PROVINCE: THE CASE OF MBABALA AREA.

By

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DEDICATION

This work is dedicated to my Earthly Gods, (Dad and Mum).

DECLARATION

I, Muyuba Euster, declare that this project has been composed by me and that the work recorded is my own. All maps and diagrams were drawn by me and that all quotations have been distinguished by quotation marks. The sources of all materials used have been acknowledged. I also declare that this project report has not been previously presented for any academic award.

Signed:..... **Date:** 14-10-96.

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ABSTRACT

This research is a detailed study that looks at all forms of livestock kept in Mbabala area by small-scale farmers. It examines the importance and problems faced by the livestock keepers in relation to their standards of living socially and economically.

The research report shows that livestock play important roles among the Tongas of Mbabala. These include selling to raise capital for various purposes such as buying farming inputs, buying food and other household requirements and sending children to school. Other purposes are providing draught power, paying fines and slaughtering for consumption at family levels and during ceremonies.

However, small-scale livestock keepers face a lot of problems concerning their livestock such as diseases, drought, lack of food, theft, land tenure and poor management. These problems have resulted in the reduction of livestock which in turn has led to a decline in the living standards of the small scale livestock keepers in Mbabala area. Hence the farmers and the government are faced with the challenge of redeeming the livestock enterprise. So far little has been done by both the farmer and the government. Therefore, it is recommended that among other things, steps should be taken to solve the problems faced by livestock keepers. For example farmers should form groupings where they can put their resources together, constructing water reservoirs and giving loans to the farmers.

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CHAPTER ONE

INTRODUCTION

Farming in Zambia which involves growing crops and raising livestock ranks among the most important activities contributing to the Zambian economy. Zambia has a dualistic agricultural sector, with a relatively small but highly commercialised farming sector on one hand and a huge less developed small holder sector on the other. The Agricultural Sector Investment Programme (ASIP) Report of 1994 states that Zambia has about 25 million hectares suitable for both crop and livestock production and of the two (crops and livestock), this research is concerned with livestock.

Livestock raising which involves the keeping of animals such as cattle, goats, pigs, sheep, donkeys, camels, horses, and poultry, is an important component of agriculture. According to the Longman Dictionary (1984), livestock refers to animals kept or raised for use or pleasure especially farm animals kept for use and profit. Livestock is important in terms of the people's social and economic status. In other words, it is one of the major farming sectors where human beings depend upon. "Animals are an important component of most traditional upland farming systems" (Caspistrano et al 1990:110). The UN/ECA/FAO (1994) report that livestock especially cattle, are an important potential source of income in Zambia's agricultural and export earning. They further say that in many parts of the country especially in the Western province they (livestock) represent the only immediately exploitable resource available to people.

However, this important sector has got a lot of problems that have led to the reduction in livestock population. Because of its importance, the increasing loss of live:

about a considerable attention from the government, donors, non-governmental organisations (NGOs) and livestock owners themselves on the present and future of their livestock enterprise. This has been done through carrying out researches on livestock and establishment of institutions where people are trained to solve problems concerning the livestock enterprise. Others include the government trying to encourage the livestock keepers towards keeping more livestock through different measures it takes and also the intervention of non-governmental organisations and donors in the livestock industry. In case of the Zambian government, the Ministry of Agriculture Food and Fisheries through the Veterinary and Tsetse Control Department, is directly linked to the livestock raising operations.

1.0 Statement of the Problem

Livestock raising is not an easy task in that many problems like diseases, lack of water, land tenure issues and poor management are faced by farmers. Therefore, this research project attempts to give the dynamics of livestock raising in Mbabala area i.e. show the problems that are faced by livestock keepers, what they are doing to solve them and then propose suitable practical solutions for livestock husbandry. Furthermore, the study examines the wider social investments of the state and non-governmental organisations including those of donors towards livestock raising among small-scale farmers.

1.1 Hypothesis

The decline in livestock population due to diseases, lack of water, land tenure issues and poor management has led to the decline in living standards of small-scale farmers in Mbabala area.

1.2 Aims/objectives

The aims/objectives of the research were:

- to establish the current economic and social status of livestock raising among small-scale livestock keepers.
- to study the importance of keeping livestock and find out the effects of draught and diseases on livestock.
- to find out what assistance small-scale livestock keepers get from the government, non-governmental organisations and donors i.e. form and extent of the assistance.
- to examine the issues of land tenure and management in livestock raising.

1.3 Organisation of the Report

The report has got six chapters. Chapter two consists of literature review on the related work. Chapter three has the methodology, sampling procedure and the sample size, problems encountered during data collection and characteristics of the sample. Chapter four consists of location and description of the study area. Hence its climate, relief, soils, vegetation and socio-economic activities. Chapter five consists of research findings while chapter six discusses the research findings, recommendations and conclusion.

CHAPTER TWO

LITERATURE REVIEW

In Chapter one, we defined livestock according to the Longman Dictionary (1984) as animals kept for use or pleasure; especially farm animals kept for use and profit. Hence livestock raising can be defined as the keeping of animals like cattle, sheep, goats and poultry for use as well as for profit. Small-scale livestock raising is characterised by a high percentage of local breeds and traditional ways of raising, of which the main feature is that of keeping animals extensively. The traditional livestock keepers are lagging behind as far as new methods are concerned. They lack regular supply of vaccines to protect their livestock from diseases which is one of the major problems facing the small-scale livestock keepers. Livestock raising is important worldwide because of the benefits got from it. These include the provision of meat, milk, draft power and as contributors to the economy of a particular country. "Animals can efficiently recycle farm wastes and by-products into food and useful products, such as manure, wool and hide that can be used on a farm or sold for cash income" (Capistrano et al 1990:110).

Due to such general importance, it should be mentioned that many parts of the world rely partly on livestock raising as one of the sources of economic stability. Therefore, we find that almost in all parts of the world, some form of livestock keeping (either at a large or small scale) is practised. Allan (1965) says that people who obtain all or a large part of their livelihood by pastoralism still occupy an enormous region of the world stretching from the atlantic coast across North Africa, Arabia and Middle East through the heart of Asia to the boundaries of China; from the Himalayas to the Arctic and from Sudan through East Africa to the South West of the Continent.

Africa, also forms part of the worldwide distribution of livestock raising. Most of the countries in Sub-Saharan Africa have their economy based on farming where crop growing and livestock raising are the major activities. According to Pritchard (1979), the great part of Africa's people, probably seven out of every ten adults, live directly off the land either by cultivating the soil or by grazing animals. "Livestock are vital to subsistence and economic development in Sub-saharan Africa" (Hans 1982:v). He also says that they (livestock) provide a flow of essential food products throughout the year and that they sustain the employment and income of millions of people in rural areas, contribute draught energy and manure for crop production and that they are the only food and cash security available to many Africans. "The sale of livestock and their products often constitute the only source of cash income in rural areas and hence the only way in which subsistence farmers can buy consumer goods and procure the improved seeds, fertilizers and pesticides needed to increase crop yields" (Hans 1982:v).

As we have seen, traditional livestock raising is playing a very important role to the traditional livestock keepers in rural areas of many African nations. Scoones (1994) found out that in all the African countries studied such as Zimbabwe, Botswana, Mozambique, South Africa, Tanzania, Uganda, Ethiopia and Mali, they have a value of traditional cattle production which far exceeds returns from ranching. "if actual stocking rates are used, communal returns are 10 times higher per hectare" (Scoones 1994:12). However, Hans (1982) found out that many of the traditional livestock systems of Sub-saharan Africa are declining.

Zambia, just like any other Sub-saharan country also has its economy partly dependent on livestock. Cattle and chicken are the widely kept forms of livestock. Others include goats, sheep, pigs, horses and donkeys. The largest number of livestock in Zambia, just like in other countries is raised traditionally. "About 80% of the cattle are held by small-scale farmers, the rest are on large-scale ranches" (Tiffen and Mulele 1994:46). Herkema (1971) also gives an example of the cattle situation. He says that in 1968, Zambia had approximately 20 000 dairy cattle and 160 000 cattle owned by individual commercial farmers while 13 000 herds of cattle were held in state ranches. This means that 193 000 herds of cattle were held under commercial farmers while more than 1.35 million herds of cattle were found to be in the traditional sector. All in all the number of cattle in Zambia in 1968 was above 1.5 million but less than 2 million. However, there was an increase in livestock population. For example Tiffen an Mulele (1994), report that in 1988 there were 2 700 000 cattle with a slight increasing trend from 1984, together with 560 000 sheep and goats and 206 5000 pigs.

According to the Central Statistics Office of choma (1970) cattle had increased to 5,181,014 herds. About half of the national cattle herd is in Southern province. "The largest number of cattle was in southern province with 1,797,697 herds, Central province with 1,287,759 herds and Western province with 848,747 herds" (CSO 1990:44). According to Harkema (1971) Central and Southern provinces had 719,928 herd of cattle, Western province with 349,271 and Eastern province with 186,729. These areas accounted for 93% of the 1,357,333 herds of cattle in the traditional sector in 1968. The remaining percentages are divided over other provinces. The areas prominent in cattle are also having other forms of livestock. The three areas given by Harkema have the Ngoni people in Eastern province, the Lozi in Western

province and the Tonga-Ila groups of the Southern province respectively as the livestock keepers.

The Ngoni of Eastern province are prominent livestock keepers in Zambia. As seen above they had 196,729 herd of cattle by 1968 ranking third from the Lozis and the Tonga-Ila groups of Western and Southern provinces respectively. Just like in other parts of Africa, cattle among the Ngoni play a vital role in agricultural economies as draught animals. They are also sold and slaughtered for consumption in villages. "for many years cattle had been sold to butchers who supplied the local markets and others were slaughtered and consumed in villages" (Kay 1965:87). However, other form of livestock are raised as well.

The Lozis in Western province by 1968 had 349,271 herd of cattle ranking second from the Tonga-Ila groups of Southern province. Peters (1960) identified other animals kept among the Lozi and these include goats, sheep, pigs, donkeys and poultry like chicken, ducks and guinea fowls.

In Southern province, a large scale of traditional cattle keeping is among the Ila and the Plateau Tongas. Other forms of livestock are minor but do exist. In all, Southern province by 1968 accounted for 719,928 herds of cattle.

The Ila are prominently pastoralists and value their animals highly for their social life. They look at their animals more as a matter of pride than an asset. They sell their livestock only when necessity presses. Cattle constitute the major and indispensable part of bride wealth (Chiko) and are used to pay fines and damages. They are also prominent in funeral feasts.

"Cattle are of great significant among the Ila, for they represent wealth, they supply milk, meat, dung for manure and also used for fuel" (Muyangana 1973:52).

Apart from the Ila in Southern province, the plateau Tongas are also livestock keepers and depend much on them Colson (1962) says that the plateau Tonga are one of the few cattle keeping people in Northern Rhodesia and they have had cattle for generations. Cattle plays a very important role in the economy of the African maize farms of the Tonga area. Rees (1958) identifies a number of cattle uses among the plateau Tongas. He says that cattle provide a source of power on and off the farm they make a direct maintenance contribution of the fertility of the cropped land as suppliers of Kraal manure and that they act as a source of income, they constitute a source of food supply and they add to the social prestige of their owner and enhance his standing in the community.

However, other types of livestock apart from cattle do exist though with little significance. These include goats, sheep, pigs and poultry just like in other areas. "The plateau Tongas have long owned large herds of cattle which they used as plough and draft animals and value them as wealth but they only have small numbers of sheep and goats" (Allan , 1965:291). In other words they do not play any role in ritual observances except where they are used as sacrificial animals. Jaspan (1953) also identifies the importance of livestock among the plateau Tongas. He says that the Tongas attach considerate and natural value of their cattle and cattle are regarded as links in a system of social interaction in that they are slaughtered at funerals and at girls' puberty ceremonies. He further says that in economic exchange, cattle play a significant role in that they are the chief medium of payment of bride wealth, court fines and damages, they are used to buy food and they are now indispensable as draught

animals. During the rain season the milk they provide constitute an important part of the Tonga diet. Progressive Tongas make increasing use of kraal manure for their fields.

Cattle are also sold to traders on the line of rail especially in times of famine. While some farmers are said to turn cattle into cash to finance business ventures, goats, sheep and poultry provide meat for honouring or regaling distinguished guests or visitors. The sale of chickens and eggs to traders along the line of rail has become an important means of local cash earnings and has stimulated the rearing of improved poultry stock.

However, despite livestock's importance to small scale keeper, there are a number of problems which small-scale livestock keepers face. These include lack of water (drought) where water for livestock becomes a problem as most traditional pastoral systems have great reliance on base flows in rivers, seasonal water holes and shallow groundwater and accessible dug wells. This means that if this type of water finishes, there will be a problem. "Limitations of water can place major constraints on pastoral viability. Abundant grazing can not be utilised elsewhere due to lack of water" (Foster 1986:30). In many parts of southern province including where the plateau Tonga are found, there has been a problem of drought for many years now. "Since 1980, rainfall has been on downward trend that may be due for reversal" (Tiffen & Mulele 1994:1). According to the two researchers they say that the direct effect for example of the 1991/92 drought on the domesticated livestock meant trekking the livestock further. Together with the decline in the quality of grazing in some areas, this caused stress, and left livestock more susceptible to diseases.

Apart from lack of water, small scale livestock owners face a problem of diseases. These diseases are caused by parasites like ticks causing tick borne diseases and tsetseflies causing trypanosomiasis. "Unfortunately southern province was affected by an endemic of virulent East coast fever or Theileriosis, and tickborne disease usually called corridor disease in Zambia" (Tiffen & Mulele, 1994:46). According to them, this started in the plateau area in the late 1980s and that it appears many farmers neglected dipping which slows the spread of the disease. This led to the dying of many animals either before or during the early stages of the drought.

Lack of knowledge by livestock keeper is another problem. This problem can be attributed to either the government in that, maybe, it does not provide knowledgeable, efficient, competent or hard working veterinary officers, or to the farmers themselves for not making efforts of seeking knowledge or rather to organise themselves and solve certain problems like buying dipping chemicals as a community. This problem is generally what leads to poor management. The UN/ECA/FAO (1964) report that cattle management in African areas is grossly inefficient and that the rate of reproduction is low: On average, a cow in an african herd produces 3 calves in eight years.

Grazing land is communally owned and cattle is communally managed and any one can have any number of livestock. "Since there are no restrictions on cattle numbers, the pastures are over grazed and bush encroachment and pasture deterioration follow inevitably" (UN/ECA/FAO 1964:60). The organisations also report that most of the defects in management arise from a total lack of fencing; this precludes the control of mating and grazing and the maintenance of a proper balance between stock needs, pasture regeneration

and bush control. Protein supplies are virtually non-existent during six months of the year and animals barely survive on a diet of sunbaked roughage and scrub vegetation. "fodder or any form of supplementary feed during the dry season is hardly ever provided and management consists merely of herding during the cropping season and disease control practices by Africans are non-existent and no attempt is made to control the breeding season" (UN/ECA/FAO 1964:62).

Another problem could be that of land tenure. How is the grazing land used? Is it communal where it is open to all members regardless of the herd each farmer has? This aspect of land tenure may lead to other problems such as the spread of diseases, overstocking on the grazing land which will lead to overgrazing and finally to land degradation through soil erosion. It appears to be true that African pastoralists or most of them do not recognise specific grazing rights of any sort in that all the land of the tribe is in theory at least, open grazing for animals of all members. "Every one of the Masai informants, both in Kenya and Tanzania, told me that there never had been any recognition among them of exclusive rights to pasture held by any individual group" (Allan 1965:294). The Somali people are of the same idea in that ownership of the products of unenclosed land is tribal while among the Tongas in Zambia grazing is restricted on an area belonging to that chief. According to Allan (1965), any member of that particular chief has the right to graze what ever number of cattle or other stock he pleases anywhere within the area, but no cattle of one area may graze within boundaries of another.

In Mbabala area, just like in other parts of Africa, the importance and problems of livestock are also present. Therefore, having identified the importance and problems of livestock

raising, the question remains, what should be done and who should do it? This challenge can be addressed by different parties which include the government, the livestock owners themselves, non-governmental Organisation (NGOs) and the donors.

CHAPTER THREE

METHODOLOGY

The methods used to collect data include those that led to the collection of both primary and secondary data. For primary data questionnaires were used and these include those for livestock keepers and one for the veterinary officers. These were in form of interviews based on the questionnaire conducted by the researcher. Observation was also used to collect primary data. Apart from primary data, secondary data was also collected from readings mainly from the University of Zambia (UNZA) main library and the Central Statistics Office (CSO) of Choma.

1.0 Sampling Procedure and Sample Size

A total sample of 40 respondents was interviewed. The area itself has got 18 villages of which 6 were sampled on the basis of access by the researcher. Hence 5 villages sharing borders with the researcher's village were picked. In getting the respondents, a register provided by the veterinary officer was used where numbers were given to the people per village and randomly pick some numbers to represent the sample. The sample size from each village was determined by its population size. Hence villages with big population had larger samples than villages with smaller population.

1.1 Problems encountered

A lot of problems were encountered during the data collection exercise and they include the following:

(i) It was difficult to find men both in the mornings and afternoons since in the mornings they went into the fields and in the afternoons they went out looking

for food or went to work for food (food for work programme) as 1995 was characterised by food shortages.

(ii) As this was a year of hunger, some people said they would prefer answering someone with issues concerning food to any other issue. Hence I had to persuade them diplomatically.

(iii) Many farmers do not keep records of the number of the livestock they have.

(iv) Many farmers pay much attention only to cattle making it difficult to get reliable data on other forms of livestock.

(v) Some farmers did not want to disclose much information concerning livestock figures.

(vi) Some farmers showed signs of being fed up with researchers as they could not hide saying "researchers come year after year but what is done after each research is not seen". Hence there is fear that in the near future, researchers will be thrown out of respondents' homes.

(vii) There was also fear among some respondents that the forms I was filling in (despite being made clear) could be from other agents e.g. lending institutions such that even though one explained, the farmers could not believe me resulting in some not giving true information.

(viii) In homes where I found women only, they refered me to their husbands, hence I had to wait for their husbands or come the following day.

1.2 Characteristics of the Sample

The sample was characterised by a high percentage of males as we have seen above that females never wanted to answer the questions since they claimed not to know

anything concerning livestock. It was also characterised by having a largest group of respondents between the ages of 51-75 years followed by that of between 26-50 years and above 75 years respectively.

CHAPTER FOUR

DESCRIPTION AND LOCATION OF THE STUDY AREA

Mbabala area is in Southern province situated 26 Km North-West of Choma town along Choma-Namwala Road. It is located 26° 55'E and 17° 35'S. See map I.

1.0 Relief

Mbabala is located in an area which is a plateau at about 1170m above sea level. However, there are a few isolated stony hills. It also has got a few low lying areas (rivulets) that save as water passages leading to streams.

1.1 Climate

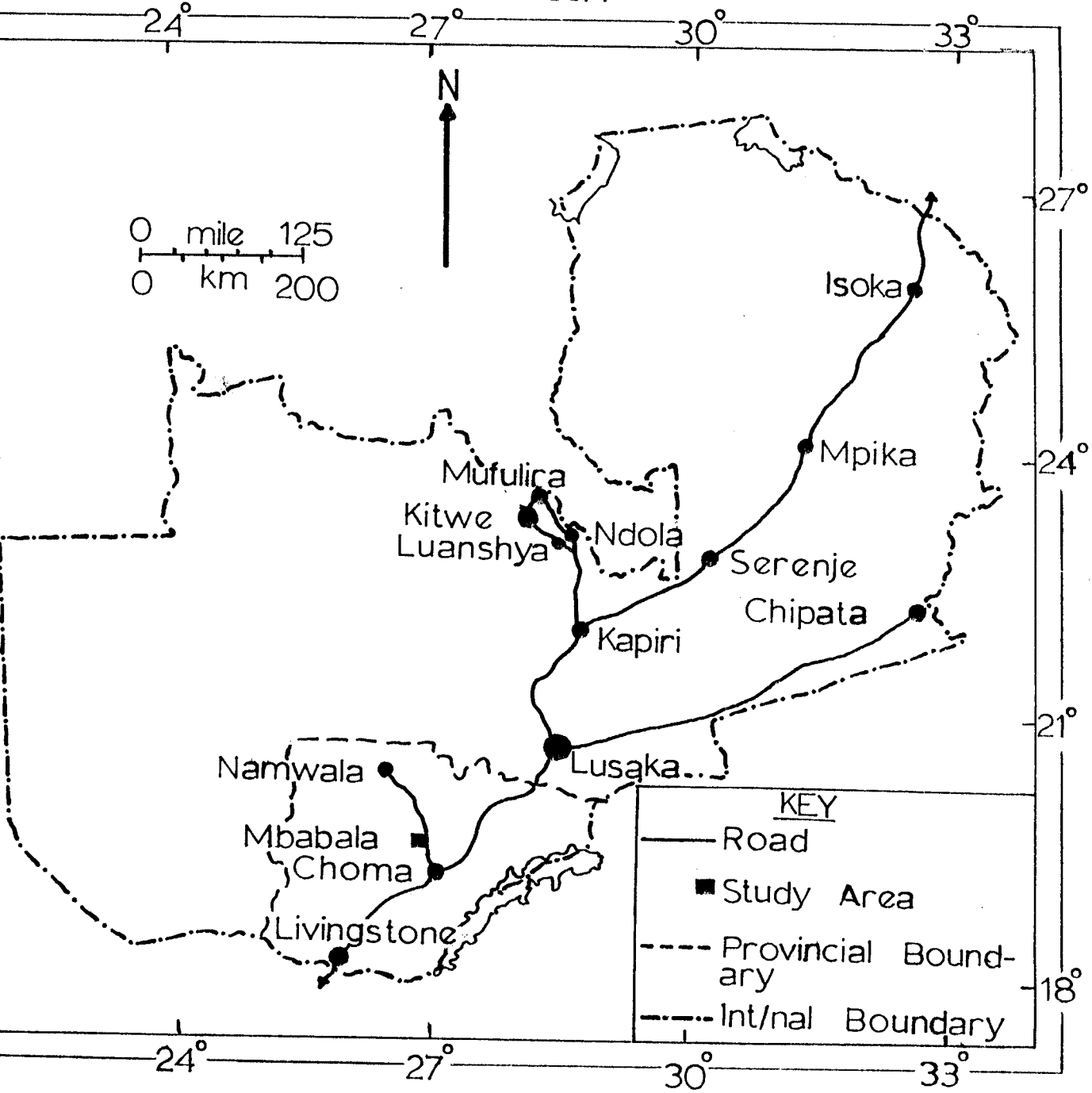
Rainfall is normally below 1000 mm annually. Being in Southern province, there is a short rain season compared to the Northern parts of the Country. "The rains gradually die out by the end of March in the south but linger on through April in the North" (Archer 1971:22). Rainfall in the area is unreliable making the area susceptible to droughts from time to time. As far as temperature is concerned, the area has got minimum temperatures of between 7° C - 10° C with maximum temperatures between 31° C - 34° C while the average temperatures range from 18° C - 24° C.

1.2 Soils

Mbabala area lies in an area that has ferrallitic soils. Mackel (1971) identified two types of ferrallitic soils as Northern and Southern ferrallitic soils of which the later is what is present in the study area.

MAP I

LOCATION OF MBABALA IN THE SOUTHERN PROVINCE OF ZAMBIA



Source: Siddle (1971: 51)

The southern ferrallitic soils vary from sandy loams to loamy sands. These soils are good to support pasture growth and crops largely if supplemented with chemical fertilizers or animal manure. However, Brammer (1976) says that the problem effecting the soil mostly are droughts if the rains are late or finish early.

1.3 Vegetation

The type of vegetation found in the area is the Miombo woodland characterised with Brachy stegia, Jubelnardia and isobelinia. This Miombo woodland is open allowing pastures to grow supporting livestock.

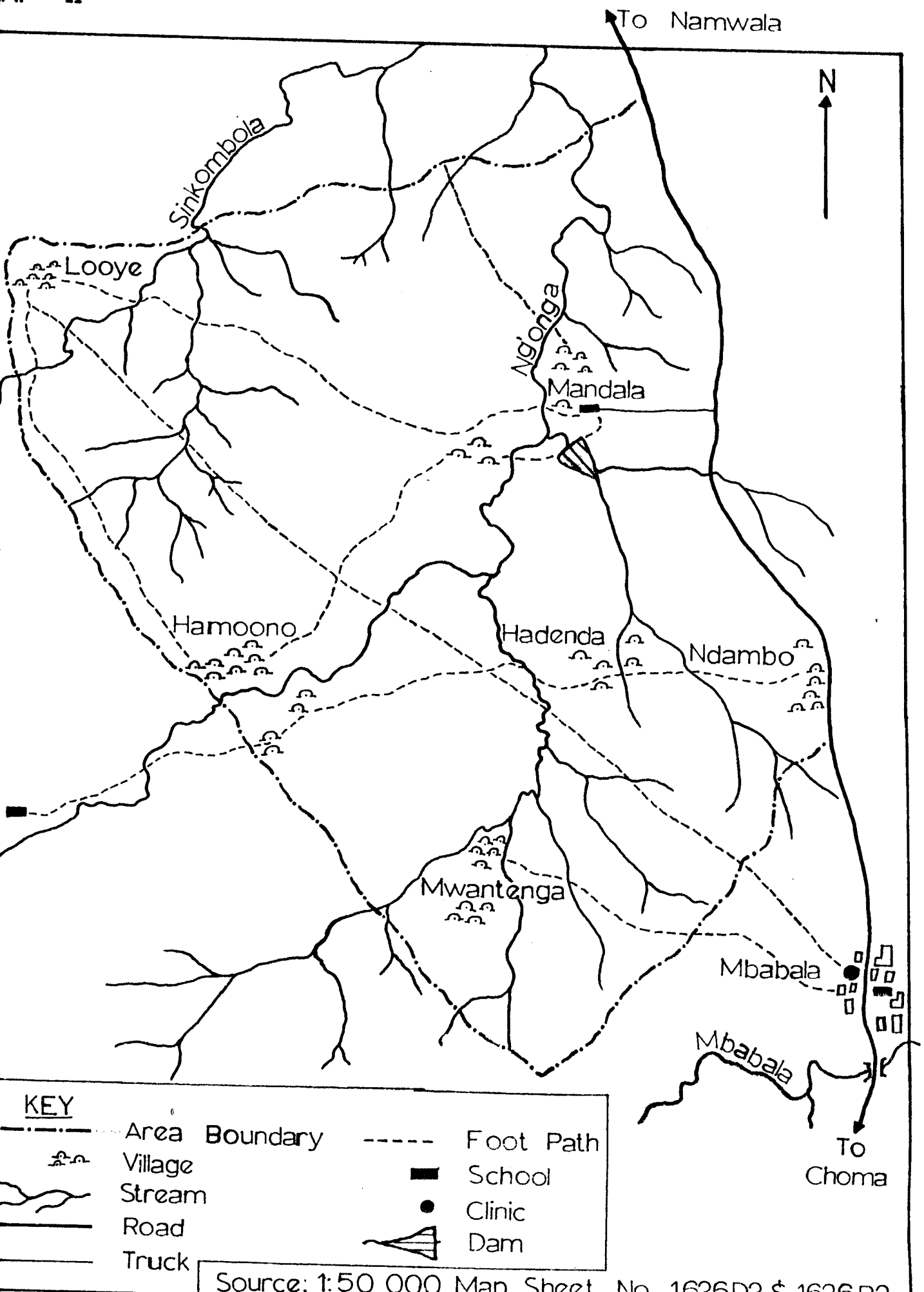
1.4 Drainage

The study area is drained by a lot of small seasonal streams which flow into other big seasonal streams like Mbabala, Ng'onga and Sinkombola. See map II. These streams being seasonal do not have water throughout the year apart from the three big ones Mbabala, Ng'onga and Sinkombola. The three do not, however, flow throughout the year and many parts of these streams dry up leaving only a few patches used by people and their livestock. This results in water problems as many people are forced to walk long distances in search of water for domestic use as well as for livestock use.

1.5 Economic activities

The people of Mbabala area are predominantly cultivators as well as livestock keepers. However there are other activities that are non-agricultural such as carpentry and part time work. For livestock raising and cultivation, there is largely a direct dependency on rainfall. Hence the amount received is very important.

HE STUDY AREA (MBABALA) WITH ITS DRAINAGE SYSTEM.
AP II



Source: 1:50 000 Map Sheet No. 1626D2 & 1626D3

CHAPTER FIVE

DATA ANALYSIS AND PRESENTATION

INTRODUCTION

This chapter deals with the data collected from the field. The data is dealt in two parts: (A) Socio-economic status data and (B) livestock data of the respondents. The analysis and presentation is done with the help of pie-charts, tables, line and bar graphs.

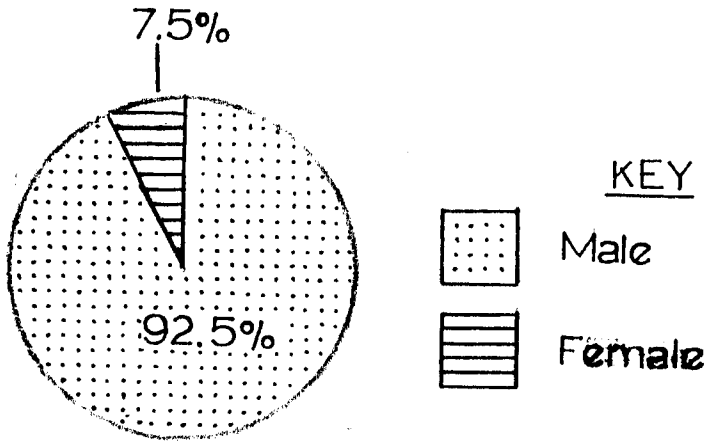
A. SOCIO-ECONOMIC DATA

1.0 Sex

Forty heads of households were interviewed. The largest percentage interviewed is that of men. This is due to the fact that most women denied responsibility to livestock as they referred me to their husbands. As a result, out of forty respondents, thirty seven were men representing 92.5% with only three women interviewed representing 7.8%.

PIE CHART SHOWING THE PROPORTION BETWEEN MALE AND FEMALE RESPONDENTS

FIG.1



1.1 Age Distribution

The ages of respondents are concentrated mainly on two categories (between 26 years and 50 years as well as between 51 years and 75 years) with only two respondents in the category of above 75 years. Fourteen respondents were between ages 26 years and 50 years while twenty four respondents were in range 51-75 years of age.

AGE DISTRIBUTION OF RESPONDENTS AND LIVESTOCK HELD PER AGE GROUP

TABLE 1

Age	No. of Respondents	No. of Livestock	%
<25	-	-	-
26 - 50	14	900	35
51 - 75	24	1199	60
>75	2	134	5
Total	40	2233	100

The number of livestock owned by each age group reflects the size of respondents. Hence the larger the size of respondents, the larger the number of livestock kept and vice-versa. For example, there are 134 livestock in the age group of respondents above 75 years old, 900 livestock in the age group of respondents between 26 and 50 years and 1999 livestock in the age group of respondents between 51 and 75 years of age.

1.2 Marital Status

All the 37 male respondents were married - some were married to more than one wife while others were married to one wife only. For the 3 women, one was married, another one was divorced while the third was a widow. All the respondents including the two women who were not married had some form of livestock. The widow in terms of livestock numbers had more than the other unmarried woman. The widow had 100 livestock while the divorced woman had only 18 livestock.

1.3 Family size

Family sizes differed from one home to the other. Some families are bigger than others and one of the reasons leading to some having big families could be the fact that some are polygamists. All the forty respondents had children. Thirteen respondents had less than 5 children, fourteen respondents had between 6 - 10 children, nine respondents had between 11-15 children while four respondents had above 16 children each.

FAMILY SIZE OF RESPONDENTS

TABLE 2

No. of children	No. of Respondents	%
None	-	-
<5	13	32.5
6 - 10	14	35
11 - 15	9	22.5
>16	4	10
Total	40	100

I also observed that apart from the respondents' own children, all homes had other children as dependents. The Tongas like having many wives so that they can have large families to provide labour in the fields as well as looking after livestock.

1.4 Residence

Among the small-scale farmers of Mbabala, I discovered three types of shifting. The first one is where one shifts within the boundaries of his or her land and still uses his or her land. The second one is where one is from one village to the other and this means even changing the land for farming. The third one is where one is from town and goes home due to retirement. In the first two types of shifting, as the farmers shift they also go with their livestock. As a researcher, I was interested in the second type of shifting. Out of 40 respondents, 19 of them (47.5%) admitted having stayed somewhere else before, thus either in town or another village with the remaining 21 respondents (52.5%) having not stayed anywhere else.

Out of the 19 respondents ten of them (56.6%) were staying in towns and went home upon retirement while 9 of them (47.4%) are those who fall in the second type of shifting and all of the 9 respondents representing 100% shifted in search of good land for growing crops as well as for grazing their livestock i.e. goats and cattle. This was the main answer given by the nine respondents.

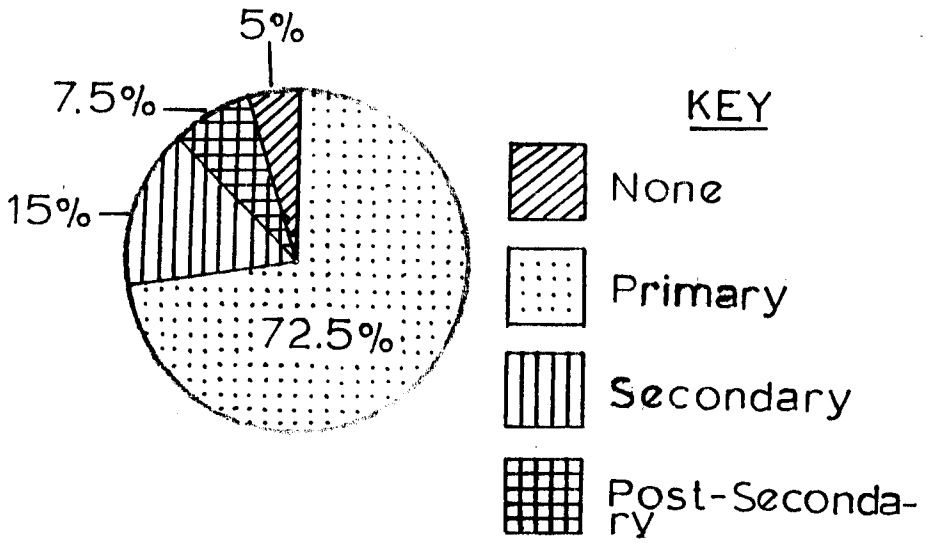
1.5 Education

In this area (Mbabala) the majority of the people only had access to primary education with a few going to secondary and post secondary, respectively. Two respondents

(5%) did not have formal education completely with twenty nine (72.5%) having primary education only. Those with secondary education (junior or senior) are only six accounting for 15% with only three representing 7.5% with post secondary education.

RESPONDENTS' LEVEL OF EDUCATION

FIG. 2



However, I discovered that whether with education or without education, there was no difference in terms of methods of livestock raising. I also discovered that some of the people with secondary or post-secondary education had less livestock compared to some with only primary education or without at all. This could be due to some of the problems identified earlier to be discussed later such as lack of capital, poor extension services, diseases, drought and the land tenure issue.

1.6 Occupation and forms of livelihood

The farmers in the study area are carrying out a lot of farming activities. These include crop growing (gardening and field crops) and livestock raising. Other activities include carpentry, part-time work with the company rehabilitating the Choma - Namwala road while others take different types of livestock for sale either in Choma, Lusaka or to the Copperbelt towns. The small scale farmers are practising mixed farming as no one was doing only one activity. The minimum number of activities was two per farmer with a maximum of four activities for some farmers.

The livelihood activities are put into four categories:

(i) cultivation of field crops (ii) gardening (iii) livestock raising (iv) others (carpentry, part time work, taking livestock for sale in urban areas). It was found that all 40 respondents (100%) were growing at least one or more field crops, 16 respondents (40%) were doing gardening, again all the 40 respondents (100%) were keeping at least one or more forms of livestock and 7 respondents doing other activities apart from the first three representing 17.5%.

FIG.3 BAR GRAPH SHOWING LIVELIHOOD ACTIVITIES IN THE AREA

As some farmers were doing more than one activity. It was found that 22 respondents (55%) were carrying out two livelihood activities, 16 respondents (40%) had three activities while only 2 respondents (5%) carried out four activities.

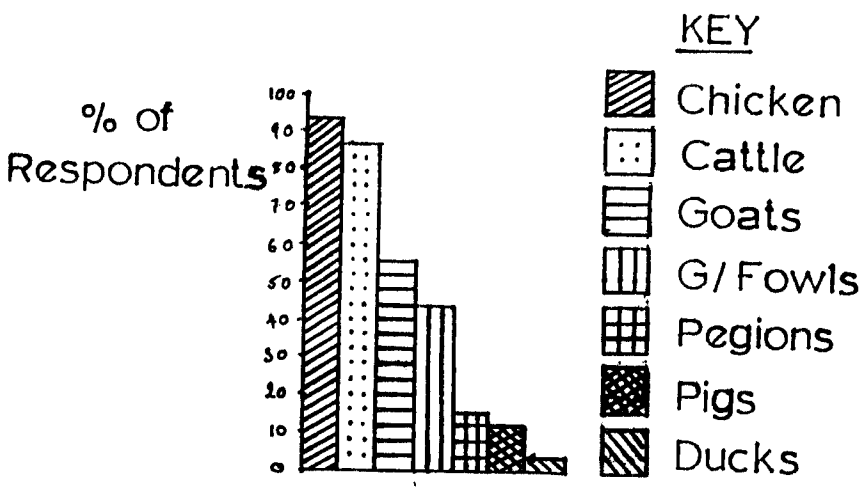
B. LIVESTOCK DATA

1.7 Livestock raising

In Mbabala area, it was found that all the sampled farmers had at least one form of livestock accounting for 100%. See appendix 1. The domesticated forms of livestock identified include chicken, cattle, goats, pigs guinea fowls, pigeons and ducks. It was, however, found that amongst all the livestock forms there are those that are dominant over others. For instance thirty seven respondents 92.5% were found to have chicken, thirty five respondents (87.5%) had cattle, twenty two respondents (55%) had goats, eighteen respondents (45%) had guinea fowls, six respondents (15%) had pigeons while five and two respondents (12.5% and 5%) had pigs as well as ducks respectively. The livestock officer also identified cattle, chicken, goats, guinea fowls and pigs as the livestock kept in the area. However, he also pointed out that the area is suitable for other forms of livestock such as sheep, donkeys and turkeys.

NO. OF FARMERS KEEPING EACH FORM OF LIVESTOCK

FIG. 4



It was also found that most farmers are not restricted to keeping only one form of livestock. Research findings show that only two farmers kept one form of livestock, eleven farmers kept two forms of livestock, fourteen farmers kept three forms while six farmers kept four forms and seven farmers kept five forms of livestock respectively.

Research findings also show that all the 40 respondents kept their livestock extensively. Because of this extensive system of keeping livestock, the livestock of different individuals especially cattle and goats just mix. Therefore animals from one village can mix with animals from another village. There are no rules governing village boundaries. The land is used communally as far as grazing is concerned. The three headmen I interviewed told me that they don't follow village boundaries for grazing their livestock. I also observed that even pigs which are not supposed to be

kept extensively were not restricted. Commenting on this type of rearing livestock, the veterinary officer said that this type is disadvantageous as diseases and pests can easily be spread from one animal to the other.

1.8 Problems faced by livestock keepers

There are a number of problems that livestock keepers face. Those that were identified by the farmers include lack of vaccines, diseases, lack of fodder/food, lack of water and others which include prey, poor transportation to markets and theft. The livestock officer also concurred with the farmers on identifying diseases, drought and lack of food as the most important problems faced by livestock keepers. The three headmen (Mandala, Hadenda and Mwantenga) that I interviewed also pointed out to diseases, drought and lack of food as the most important problems.

The problems of fodder/food and water are significant during the dry season. As I went round collecting data, I observed the seriousness of these problems. The ground in many parts of the villages I visited was bare not because of bush fires but by dryness. Many streams including Mbabala, Ng'onga and Sinkombola were completely dry in many parts. People at all the villages depended on only one dam (Mandala) with a few people of one village (Mwantenga) depending on a few water patches remaining in Mbabala stream. Trees and shrubs which normally spring up during the months of August to November still had not yet started having new leaves. I also observed that some trees and shrubs had died completely.

Animals especially cattle and pigs were thin. When the grass started shooting up, the few farmers who had pigs were just letting them outside to graze despite them being non-ruminants. All the observations above show the seriousness of lack of natural food (pastures) for cattle and food suitable to feed pigs such as human food left overs or feeds brought specifically for pigs.

Thirty five respondents (87.5%) were of the view that diseases have been existing for sometime while only five respondents (12.5%) were the one who said they were seeing the problems for the first time. In case of diseases, farmers complained of diseases to all forms of livestock. The veterinary officer said that the common diseases include tickborne diseases such as blackleg, corridor and haemorrhagic septicaemia. However, the livestock officer did not mention diseases for other forms of livestock such as mange and orf for goats. These problems up to now are largely not yet solved and 36 respondents (90%) pointed out to this. Farmers are however trying to solve these problems by using vaccines despite the fact that very few farmers can afford them.

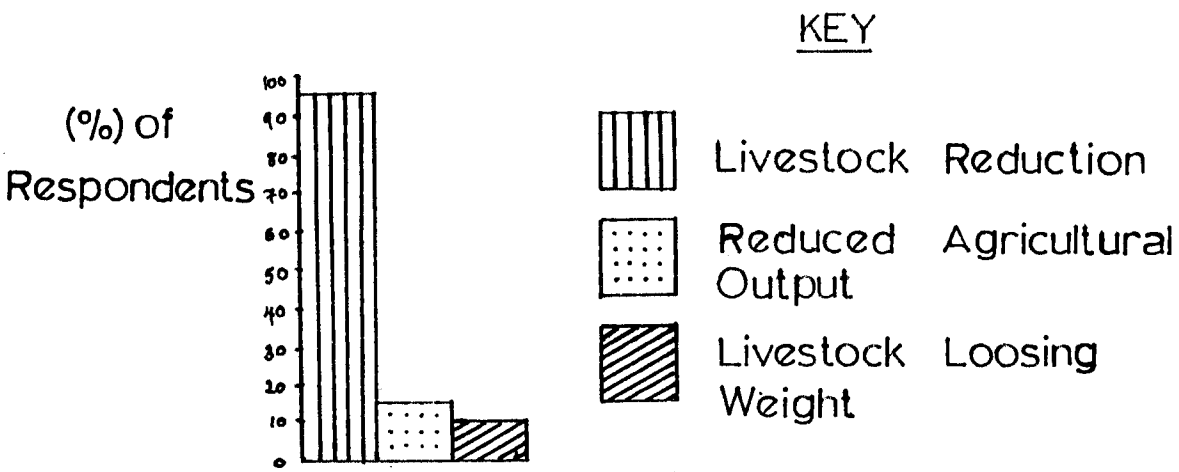
1.9 Effects of the problems on livestock

It was found that due to the above mentioned problems, there was a reduction in livestock numbers generally. Apart from livestock reduction, the veterinary officer said that there was also reduction in crop production due to lack of draught power resulting in hunger, malnutrition and failure of parents to send children to schools. For example, out of forty respondents thirty nine accounting for 97.5% indicated that the effect of these problems was a reduction in livestock population, four respondents

(10%) said that the effect was also loss of weight of livestock while the other seven respondents representing 17.5% could not forget to mention the reduction of agricultural output.

BAR GRAPH SHOWING EFFECTS OF PROBLEMS ON LIVESTOCK

FIG.5

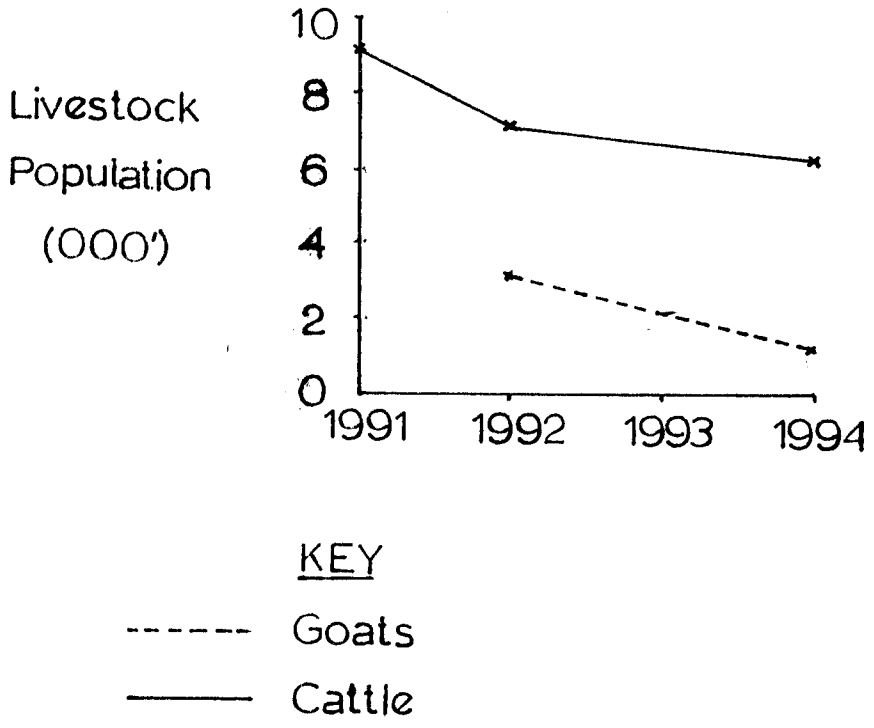


The latest census figures given by the livestock officer show this trend. For example the whole area in 1991 had 9156 cattle but decreased to 7348 in 1992 and 6426 in 1994 respectively. In case of goats there were 3196 in 1992 and decreased to 1478 in 1994.

LINE GRAPH SHOWING THE DECREASING TREND OF CATTLE AND GOATS

1991-94)

FIG.6



The decrease of livestock can also be seen from the data farmers gave more especially on attle, pigs and goats. For example in the study area, livestock figures decreased from 1990 o 1995 as shown in the table below.

IVESTOCK FIGURES 1990 AND 1995

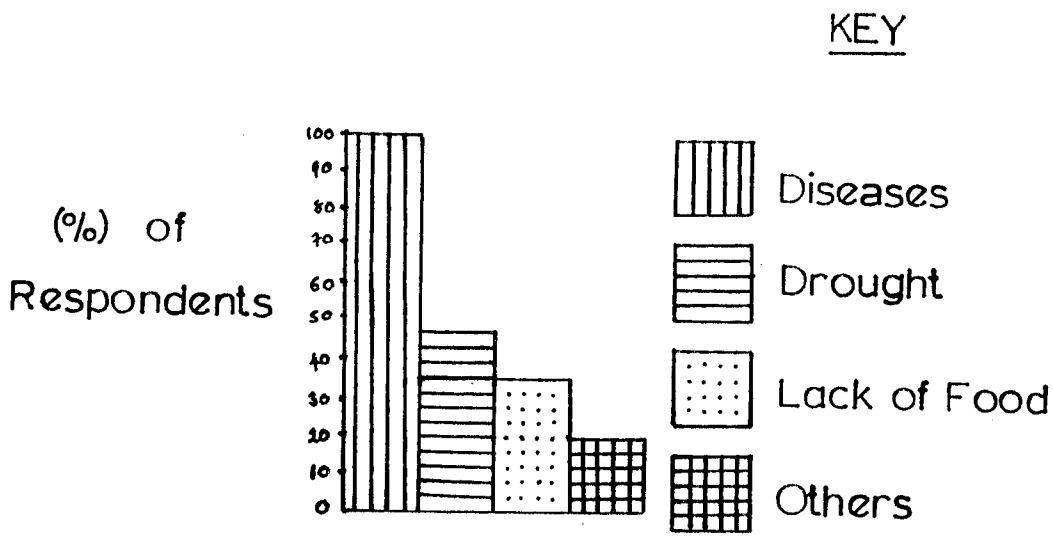
ABLE 3

	1990	1995
Cattle	1188	829
Goats	337	317
Pigs	62	45

According to the respondents, the decrease was due to problems like drought, diseases, lack of food while some animals were sold and others stolen as well as lack of knowledge for better management. For example out of 40 respondents, all of them (100%) identified diseases as the main cause, nineteen respondents (47.5%) also identified drought as the cause of such a trend, with fourteen respondents (35%) saying food for livestock was a problem while eight respondent (20%) identified other factors such as theft, selling, prey and lack of knowledge leading to poor management.

CAUSES OF LIVESTOCK DECREASE

FIG.7



As far as selling is concerned, farmers sold all forms of livestock, more especially cattle, goats, pigs, chicken and guinea fowls. According to the livestock officer, the farmers sold a lot of their animals to buy food and he also identified animals like cattle, poultry and pigs as commonly sold. I also observed that the management by farmers of their livestock was very poor. Animals during the dry season could not be collected from the bush for some days

by some farmers. This becomes difficult to see if any one of the animals is diseased. I further observed that during the rain season, you find that there is a lot of mud in the kraals such that some animals spend all nights standing and are forced to sleep during the day instead of grazing while others just lie deep in the mud. The breeding of animals is also poor. At the time when the research was carried out (late November 1995), there were some calves that appeared to have been born between August and September. This is a bad time for calving as there is not enough pastures for cattle.

2.0 Extension work

The area has two veterinary officers who said that they offer extension services to all types of livestock. However, according to all the respondents, the officers only visit when called and farmers have to pay for the services offered. It was also found that there is no other extension services from any other organisation apart from the government veterinary officers.

2.1 Availability of vaccines and dipping chemicals

As far as vaccines and dipping chemicals are concerned, farmers have a lot of problems to obtain the commodities. It was found that all the forty respondents had no vaccines for animal vaccination or protection. In terms of dipping chemicals, nine of the respondents (22.5%) said that they had the dipping chemical and were dipping their animals (cattle only) by spraying while the rest (thirty one respondents), accounting for 77.5% did not have dipping chemicals. In the study area, there are two dip tanks and both are not working. I toured both of them and one was in good

condition while the other one was completely finished as almost all poles have fallen down and the iron sheets covering the tank were all stolen.

Of the nine respondents who dip their cattle, three of them (33.3%) spray their animals weekly, one farmer (11.1%) sprays his cattle monthly while the remaining five (55.5%) said that they spray their cattle only when ticks are seen. Of the nine farmers, only one farmer (11.1%) said that the chemical was effective while the remaining eight farmers four of them (44.4%) and the other four (44.4%) said that the chemical was fairly effective and effective respectively.

Another problem is that spraying of dip chemicals was only done to cattle. Farmers have no knowledge that even other animals like goats can be sprayed to protect them from diseases such as mange (losing of hairs) and Orf (loss of sight) which was the main complaint farmers had about goats. There are also pests that attack other forms of livestock that can be prevented by spraying with certain chemicals which farmers have no knowledge of. Out of the thirty one who did not dip their animals, twenty five respondents representing 80.7% said that they had no dipping chemical because of lack of resources to buy the chemical while five of them (16.1%) are those who did not have animals like cattle which they regard as the animals that need dipping with only 1 respondent representing 3.2% not having any answer.

2.2 Water and pasture availability

Water was found to be a problem to half of the people during the dry season only. For example 20 of the respondents (50%) indicated that they have no problem with

water throughout the year while the other 20 respondents (50%) said that they have a lot of problems with water during the dry season. Those who had no problem with water are those that stay near Mbabala stream and Mandala dam. To solve the water problem, all the twenty respondents had to drive their livestock (cattle and goats) to the only dam (Mandala) and to certain parts of Mbabala stream that still had water. For the other animals (poultry and pigs), farmers had to draw water for them. As far as pasture is concerned all farmers said that pastures become a problem during the dry season and that nothing is done until the rains come.

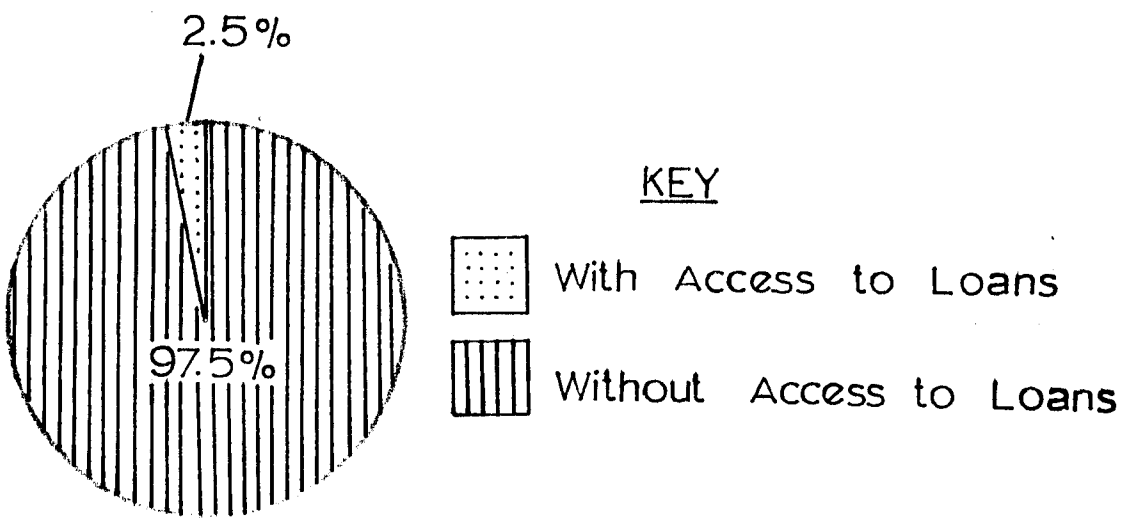
.3 Access to loans and existence of communal grouping

In case of loans, it was found that generally farmers do not have access to loans as thirty nine respondents representing 97.5% said that they do not have access to loans with only one respondent (2.5%) saying that he had access to loans. However, there was no proof because he had never had a livestock loan despite saying that he had access to livestock loans.

IE CHART SHOWING THE NO. OF FARMERS WITH AND WITHOUT ACCESS

O LOANS

IG.8



When asked if there was a grouping per village looking at the plight of livestock, only two respondents (5%) said that there were groupings although at the time of data collection, the groupings were not working. However, thirty eight of the respondents (95%) said that there were no groupings existing. Of the three headmen I interviewed, two of them said that there were no groupings in their villages as they had been disbanded while one said that there was a grouping in his village which took the complaints of the farmers to him who in turn took the complaints to the ward councillor.

2.4 Standards of living, farming inputs and education costs

Out of the forty respondents, thirty seven of them representing 92.5% pointed out that standards of living were declining with only three saying standards of living were improving accounting for (7.5%). However, I discovered that those with improving standards of living are among those with increasing livestock numbers. The livestock officer also said that generally living standards of the farmers were declining. All those who said their standards of living were declining attributed part of this decline to livestock loss. Asked why they attributed declining living standards to livestock loss, the majority (thirty two out of thirty seven 86.5%) said that because they no longer produce more crops to sell and to consume since they no longer have adequate draught power, capital to buy farm inputs and the drought problem. They further said that other livestock products like milk and meat for selling and consumption are now inadequate. Five of the remaining respondents representing 13.5% are those who had no answers.

As we have seen above, livestock is an important source of income for many purposes. These include getting capital for farming inputs and sending children to school. Thirty five respondents (87.5%) said that money for buying farming inputs and sending pupils to school was a problem due to the fact that many farmers depend on selling livestock to get money to buy inputs like seeds and fertilizers as well as money for paying school fees. The remaining five respondents (12.5%) said that money was available. The veterinary officer also said that one of the problems faced by farmers due to loss of livestock was among others, failure to send children to school in the sense that the farmers depend on livestock as source of income. All those who said that they were unable to either buy farming inputs or send their children to school attributed this problem partly to livestock loss.

2.5 Crop growing

For crop growing, all farmers depend on oxen in the study area. Therefore due to livestock loss, I discovered that there was an effect as most farmers (thirty nine) when asked if they grow crops as before said 'NO' with only one saying 'YES'.

LIVESTOCK LOSS AND CROP GROWING

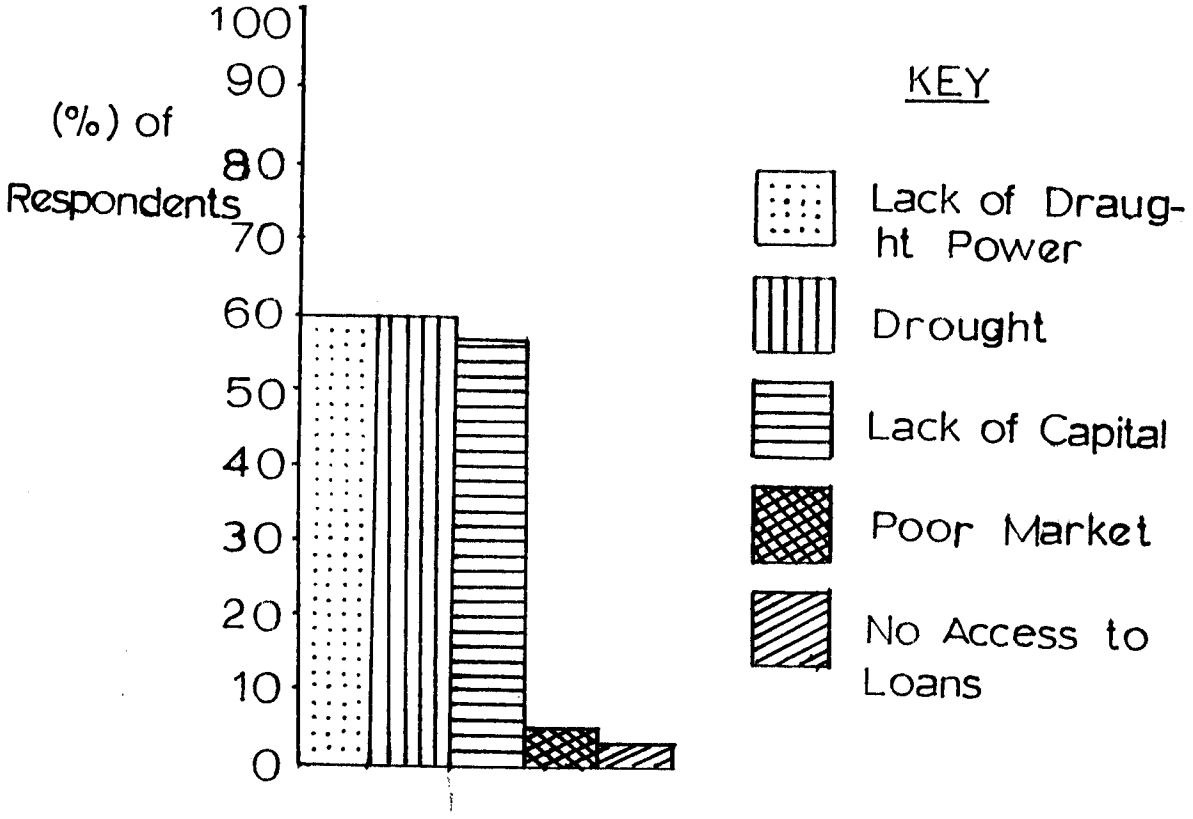
TABLE 4

	No. of Respondents	%
Growing crops as before	1	2.5
No longer growing crops as before	39	97.5
Total	40	100

A number of factors were discovered to be the cause of the scenario above of which livestock loss was amongst the major ones as it resulted in lack of draught power. Others include less/no capital to buy inputs, drought, poor markets (in case of good years such that farmers are discouraged to grow too much the following year), lack of access to loans (for those who succeed inputs are sometimes delivered very late) and lack of good technology. Out of forty respondents, twenty four, representing 60% identified lack of draught power or the reason for not growing crops as before, twenty three (57%) pointed out to lack of income to buy fertilizers and seeds. At the same time twenty four (60%) also pointed out to drought while the other three identified poor markets and lack of good technology with two respondents accounting for 5% for the former and one respondent (2.5%) for the later respectively.

CAUSES OF REDUCED CROP GROWING ACTIVITIES

FIG.9



The livestock officer also said loss of livestock led to reduction in crop production. I also observed that at the time when they finished ploughing many parts of their fields remained unploughed. On mere discussions with farmers, they said they did not finish ploughing all their fields because of lack of enough draught power. "I use only one plough as compared to four ploughs two years ago such that planting time finishes while many parts of my fields are not yet planted as you can see for yourself," said one farmer. I also observed some farmers using hand hoes but previously used ox-drawn ploughs while some farmers were using cows for ploughing.

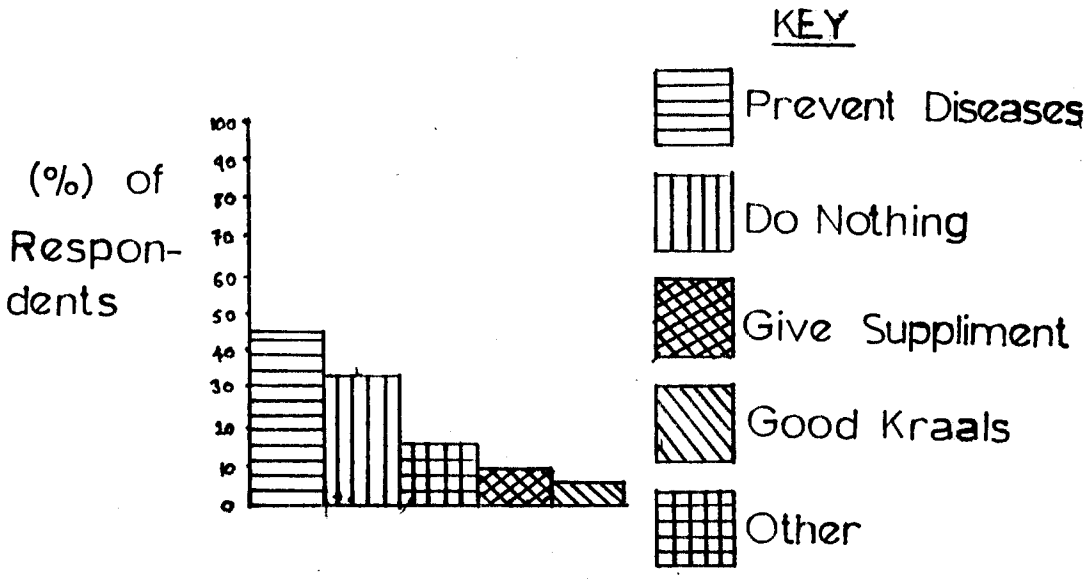
2.6 The challenge to Livestock keepers (solution)

The farmers, however, were to a large extent aware that to solve these problems, it needs their effort as well as government efforts. But some thought that it is the responsibility of the government alone. For example thirteen respondents representing 32.5% said that they could do nothing while eighteen of them (45%) said that as farmers, they should work out some strategies towards disease prevention. For instance, one farmer said that they should group themselves after which they can select good places and days where and when the veterinary officer could be meeting them instead of him going from home to home. He further said that it is during such meetings that farmers should be putting their complaints and views across. The other four respondents (10%) suggested a way of giving supplementary feeds to livestock. One of the four said that maize stalks can be stored after harvesting and be given to livestock during the dry season. Three other respondents (7.5%) suggested that animals should have good kraals rather than those where they always stand or sleep in mud while the other seven respondents representing 17.5% identified others such

as buying food supplements for livestock, limiting livestock numbers, diversification of livestock and seeking advice from veterinary officers.

SOLUTIONS TO LIVESTOCK PROBLEMS AS VIEWED BY FARMERS

FIG.10



The veterinary officer said that farmers should be able to sell part of their livestock to improve the rest. By so doing, the farmers will be able to buy dipping chemicals and vaccines to be used on other animals. Farmers can also work together by forming livestock groups where they will be trying to make decisions to fight their problems collectively.

On part of the government, the farmers said that the government should provide vaccines and dipping chemicals. Farmers suggested that loans should be more accessible and easy to obtain. Further, they said that extension workers should be many instead of only two in the area and that they should be efficient. Farmers also requested for the introduction of drought and disease tolerant livestock breeds. Finally, farmers gave a number of comments which include the need for farmers and the government to work together to improve the livestock

enterprise. Others said that if the trend does not change or rather not checked, then, the loss of livestock will worsen.

2.7 Work of the veterinary officer

The veterinary officer said that they are inconvenienced in their work by problems such as lack of transport, lack of drugs and inadequate equipment. Therefore, the government should see to it that such facilities are provided to enable the officers offer the services efficiently. He further said that there is need for staff seminars and that the government should not leave farmers on their own and that if the government can not manage to help farmers fully it should encourage non-governmental organization as well as donors to help farmers.

Asked whether since he came to the area he has achieved anything, the officer said "partly". He gave reasons such as the changing of farmers on the way of livestock keeping. "Farmers understand what to do and that in many cases farmers are ready to pay for the services such as treatment," he said. In his final remarks, he said that generally livestock population has reduced. He also said that farmers' education needs to be intensified to improve general management and production. "And unless current policy of management changes, the enterprise is a non-starter," he said.

CHAPTER SIX

DISCUSSION OF THE RESULTS

One of the aims of the research was to establish the current importance of livestock among the small-scale livestock keepers in Mbabala area. Hence finding out the role livestock plays among the farmers socially and economically. In this regard, livestock was found to be one of the most important farming activities among the small scale farmers in Mbabala area. All farmers said that they could not do without having any form of livestock. There are a lot of purposes that livestock is used for and these include the following:

(i) draught power

(ii) selling livestock and their products (milk, meat, eggs).

(iii) providing meat, milk, eggs for consumption

(iv) their droppings are used for manure in field and gardens.

(v) for bride price (lobola)

(vi) exchanging with other goods and

(v) for prestige

Expressing the importance of livestock, many farmers had this to say in their local languages (Tonga).

* "Bulemu bwa mutonga nzivubwa," meaning that a Tonga will have respect in the community due to what he possesses as far as livestock is concerned.
* "Buumi bwa Mutonga buli muzivubwa," meaning that life for the Tongas is vested in livestock.
* "Zivubwa Kapati ng'ombe nciyobwedo Camutonga," meaning that domesticated animals more especially cattle serve as banks for the Tongas.

As far as draught power is concerned animals like cattle, oxen in particular are used for draught power in ploughing as well as other forms of work such as taking agricultural products to markets, hauling fire wood and building materials from the bush and even drawing water in cases where water is drawn from far away places. Farmers also sold their livestock and their products to raise capital for various purposes such as buying food during times of food shortages (as was 1995 at the time of data collection), buying farm inputs as well as capital to send their children to schools.

The respondents also pointed out that as far as consumption is concerned, they slaughter something e.g. chicken, for visitors while goats and pigs in addition to slaughtering for visitors can also be slaughtered for feasts. Respondents also said that a cow or oxen can be slaughtered during feasts like weddings, when a girl is entering puberty stage or during funerals. Eggs from chicken and guinea fowls are also consumed though to a less extent. In terms of payments, livestock serve a great purpose such as bride price (lobola) for marriages. At the time of data collection, lobola was ranging between 4-6 herds of cattle. Apart from lobola, damages like impregnating a girl would lead to fines using cattle. Livestock also provides manure with their droppings, hence can replace inorganic fertilizers. Some of the farmers said that livestock manure when applied onto the field can work for at least two years without wasting money to buy inorganic fertilizers.

Apart from selling livestock for cash, some farmers first exchange their livestock for food. For example in the 1994/95 drought season that left many farmers hunger stricken, I witnessed farmers exchanging two (90kg) bags of maize for one big oxen while a goat or pig could go for one bucket of maize.

However, livestock keepers in Mbabala area face a lot of problems as far as their livestock is concerned. These are diseases, lack of adequate water and fodder as identified by the respondents in chapter five. On the issue of land tenure highlighted in the aims, it was found that this is another problem though farmers do not look at it as a serious problem. The grazing land is used communally and animals from one home or village mix with others from different homes or villages. Hence there is a danger of disease transmission from those that do not dip to those that dip.

Another aim was on wanting to see how lack of water effects livestock raising. Water in the area was seen to be a big problem as many people depended mostly on the only dam in the area (Mandala dam). Animals are supposed to drink water at least three times a day, that is in the mornings, afternoon (midday) and late afternoon. However, during the time of data collection, animals more especially cattle and goats only had water once per day. As far as fodder is concerned, farmers depend on natural fodder for cattle and goats and this fodder during the day season dries up completely. However, animals still graze on dried grass but during the 1994/95 season as it was a drought year, even dry grass was a problem. This led to animals to depend on few areas that had some fodder especially near streams where they fed on reeds.

In terms of assistance by the government to the farmers, it was found that the government is not doing much in that vaccines, are according to the veterinary officer, not available in most cases hindering his operations. The officer has no transport to go round visiting the farmers and furthermore, there are no seminars that can be used to equip the officer with new knowledge on livestock.

The above problems faced by livestock keepers have resulted in livestock reduction, reduced agricultural output as well as loss of weight of livestock. Fig.5 and 6 and Table 5. However, there are also some minor causes of livestock reduction apart from diseases, drought and lack of food and these include, selling, theft, prey and poor management. Fig.7. The problem of poor management by livestock keepers could also be linked to the inefficiency of veterinary officers to carry out their duties such as calling for meetings where they could teach the farmers better methods of raising livestock.

Therefore because of the reduction in livestock numbers (for some farmers even to an extent of loosing all of some of the livestock forms), it resulted in a decline in living standards of the farmers. For example more than 90% of the respondents said that their living standards were declining while more than 80% attributed the decline of living standards to livestock loss. As livestock is one of the major sources of income, its reduction has also resulted in a reduction in the income of farmers. This means that farmers have less or no capital to buy farming inputs like fertilizers and seeds. There is also a reduction in draught power, thus affecting farming activities. Furthermore, money to send children to school is a problem too. Because of reduced or no draught power and lack of capital to buy fertilizers and hybrid seeds, it has resulted in food shortages. The failure to send children to school has resulted in many early marriages among the youths and this has led to rapid population growth among the small scale farmers while food production is declining. The general and final result is a decline in living standards.

The many problems that farmers face have therefore stood out as a challenge to them and the government. As we have seen in chapter five, farmers have done little to solve these

problems due to lack of funds. The dip tanks are no longer working and the groupings that once existed are no longer existing. Farmers can face these challenges in a number of ways. For example reviving the groupings so as to solve the problems as a group. As a group they can put their resources together so that they can buy dipping chemicals and make sure that the dip tanks start to work again. They can also afford to buy vaccines communally. As individuals farmers should be ready to withdraw from their traditional banks instead of looking at their animals as a form of prestige. The sale of two or three herds can save the rest of the animals. However, the government should also play a very important role in assisting farmers to solve these problems. For example making vaccines available to the veterinary officer so that he operates efficiently. The government can also organise seminars for veterinary officers and also improve transport facilities for them to effect their operations. It should also offer loans to the farmers in terms of cash, animals and vaccines or chemicals.

CONCLUSION

Livestock raising among other activities is one of the most important activities in Mbabala area where animals like cattle, goats, pigs, pigeons, chicken, guinea fowls and ducks are kept. This activity is associated with males mostly. In other words females have no concern in livestock raising. The education and the age of the respondents have no effect on livestock numbers held by each respondent in that some of the young respondents and those with no or low education had more livestock compared to some older or educated respondents. Farmers faced a lot of problems which include diseases, drought, lack of fodder/food, prey, theft, lack of vaccines and dipping chemicals and poor extension services. All these have led to a reduction in livestock which has in turn affected living standards negatively. Therefore,

unless more effort is put to redeem the livestock enterprise, the problems will not end, instead they will continue and living standards will also continue to decline.

RECOMMENDATIONS

Having seen the problems and their effect on livestock and the owners, with a little that is done by a few farmers, there are a lot more challenges that need to be done by both parties (farmers and government). Hence the following have been recommended:

(i) farmers need to come together and form groups so that they can work together to protect their livestock from diseases, drought and lack of fodder/food. Through groups farmers will be able to contribute money to buy vaccines and dipping chemicals.

(ii) individual farmers should be able to sell some of their livestock to get capital to improve the rest.

(iii) the government should give loans to farmers in any way (cash, livestock, chemicals, barbed wire etc)

(iv) there is need to improve farmers' knowledge of water cycles, water and soil conservation and investment in addition to medium scale reservoirs and small dams for storing water for human and livestock.

(v) there is need for improved and efficient services offered to the livestock keepers by veterinary officers. This can be done if the government increases the number of officers, organise seminars for livestock officers to nourish their knowledge and teaching them new discoveries.

(vi) Government should improve the conditions of service of veterinary officers in terms of housing, transportation and salaries. This will boost the morale of the officers to work.

(vii) Government should consider methods of improving budgeting and the funding of operations and maintenance. This will help or rather see to it that vaccines and chemicals are always available.

(viii) there is need for large-scale livestock diversification which will even involve keeping of disease and drought tolerant animals such as donkeys.

(ix) As it is clearly seen that the government is not doing well in the livestock sector, it is therefore advisable that the government should request non-governmental organisations (NGOs) and donors to alleviate the problems livestock owners face.

(x) there is need to encourage farmers to treat all forms of livestock equally instead of paying much attention to cattle.

(xi) farmers can also be storing maize stalks and remains of other crops such as sunflower and groundnuts after harvesting to feed their animals during the dry season.

(xii) it is also advisable to the government to begin the development of water harvesting techniques to enable farmers harvest the rain water so that it is used during the periods of water deficit. This could be in form of sinking boreholes and constructing dams where animals could be drinking from.

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APPENDIX

APPENDIX 1

TABLE 5: NO. OF EACH FORM OF LIVESTOCK PER FARMER (1995)

Respondent	Chicken	Cattle	Goats	Pigs	G/fowls	Pegion	Ducks
1	21	15	-	-	-	-	-
2	17	40	23	11	9	-	-
3	4	-	-	-	14	-	-
4	6	21	-	-	-	-	-
5	14	60	-	-	-	-	-
6	25	15	18	-	12	-	10
7	7	17	8	-	2	15	-
8	21	60	50	-	35	200	-
9	20	50	25	-	9	-	-
10	3	17	-	-	-	-	-
11	8	-	-	-	-	-	-
12	10	7	12	-	7	6	-
13	-	8	4	-	-	-	-
14	3	7	-	-	-	-	-
15	4	-	4	-	8	-	-
16	15	30	6	3	-	60	-
17	2	4	8	-	-	-	-
18	8	64	11	-	-	-	-
19	4	4	-	-	-	-	-
20	3	-	-	-	-	-	-
21	4	8	-	-	-	-	-
22	10	3	13	-	-	-	-
23	10	50	-	-	2	-	-
24	15	9	10	-	-	-	-
25	15	32	-	-	4	-	-
26	9	36	16	-	12	-	-
27	12	15	25	-	3	-	-
28	3	5	3	-	-	-	-
29	-	7	10	-	2	-	-
30	10	5	-	8	-	-	-
31	12	8	-	-	-	-	-
32	4	5	8	-	-	-	-
33	-	31	23	-	-	-	-

34	6	28	18	-	-	-	-
35	15	50	-	12	10	-	-
36	100	25	24	-	6	-	-
37	4	9	19	-	11	-	-
38	23	65	-	11	-	15	-
39	22	-	-	-	13	32	-
40	7	12	-	-	1	-	-

THE UNIVERSITY OF ZAMBIA
DEPARTMENT OF GEOGRAPHY

PROJECT TITLE: CHALLENGES OF LIVESTOCK RAISING AMONG SMALL SCALE FARMERS IN SOUTHERN PROVINCE: THE CASE OF MBABALA AREA

QUESTIONNAIRE FOR LIVESTOCK KEEPERS

Ticking _/ the Answer of choice and filling in where applicable.

SECTION A

1. Sex?

   (a) Male
   (b) Female

2. Age?

   (a) <25
   (b) 26-50
   (c) 51-75
   (d) >75

3. Marital status?

   (a) Single
   (b) Married
   (c) Divorced
   (d) Separated
   (e) Widowed

4. How many children do you have?

   (a) Non
   (b) <5
   (c) 6-10
   (d) 11-15
   (e) >16

5. Educational Status?

   (a) Non
   (b) Primary
   (c) Secondary
   (d) Post secondary

6. Have you ever stayed anywhere before?

(a) Yes
(b) No

7. If 'yes' to question '6' where, for how long and what are the reasons for leaving the place?

Where? (place)	For how long?	Reason for leaving
_____	_____	_____
_____	_____	_____
_____	_____	_____

8. What do you do for a leaving?

_____

_____

_____

_____

SECTION B

9. Do you keep any form of livestock?

(a) Yes
(b) No

10. If 'yes' to question '9' what are they, how many are they and what method of rearing do you practice?

Livestock	Number	Method of rearing
_____	_____	_____
_____	_____	_____
_____	_____	_____

11. Do you have any problems concerning livestock raising?

(a) Yes
(b) No

12. If 'yes' to question '11' what are they?

(i) _____

(ii) _____

(iii) _____

(iv) _____

13. If 'yes' to question '11' are the problem the first ever or existed before?

(a) First ever
(b) Existed before

14. If the answer to question '13' is that they existed before, when and how were they solved?

When did they exist (Years)	**How were they solved?**
_____	_____
_____	_____
_____	_____

15. If diseases and drought are some of the problems mentioned in question '12' what are their effects

_____

_____

_____

16. Generally, is your livestock increasing or decreasing

(a) Increasing
(b) Decreasing

17. Give reasons for any of the answer chosen in '16'

_____

_____

_____

18. Can you give the appropriate figures of your livestock for the following years

Livestock	1980	1985	1990	1995

SECTION C

19. Do you have veterinary officers in the area?

(a) Yes
(b) No

20. If 'yes' to question '19' how often do they visit you?

(a) Weekly
(b) Monthly
(c) After 3 months
(d) Yearly
(e) Others specify _____

_____

21. Are there any other personel apart from the veterinary officers?

(a) Yes
(b) No

22. Do you have vaccines to protect your livestock against diseases?

(a) Yes
(b) No

23. Do you dip your animals?

(a) Yes
(b) No

24. If yes to question '23' how often?

(a) Weekly
(b) Every two weeks
(c) Monthly
(d) Any other specify _____

_____

25. If 'yes' to question '23' how effective is the chemical?

(a) Not effective
(b) Fairly effective
(c) Effective
(d) Very effective

26. If no to question '23', why?

_____

_____

27. Is there enough water through out the year?

(a) Yes
(b) No

28. If 'no' to question 27 how do you solve this problem?

_____

_____

29. Do you have enough pastures throughout the year?

(a) Yes
(b) No

30. If 'no' to question '29' how do you solve the problem?

_____

_____

_____

SECTION D

31. Do you think you can do without livestock?

(a) Yes
(b) No

32. If 'no' to question '31' of what importance is livestock keeping to you or rather what are the uses of livestock?

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(vi) _____

33. Do you have access to loans from either the government or any other organisations?

(a) Yes
(b) No

34. Do you have communal staff working towards solving livestock problems?

(a) Yes
(b) No

35. If 'yes' to question '34' what is being done and in what ways?

_____

_____

_____

SECTION E

36. Is your standard of living improving or declining?

(a) Improving
(b) Declining

37. If your answer to question '36' is 'declining', would you say that the loss of livestock contributes to this scenario?

(a) Yes
(b) No

38. If yes to question '37', why?

_____

_____

_____

39. Generally, how has your economic and social status in society been affected by the loss of livestock?

_____

_____

_____

40. Do you have enough money to send you children to school and to buy farming inputs?

(a) Yes
(b) No

41. If 'no' to question '40', can you attribute this situation to loss of livestock?

(a) Yes
(b) No

42. Do you grow crops today as much as you used to previously?

(a) Yes
(b) No

43. If 'no' to question 42 why?

_____

_____

_____

44. What do you think should be done towards improving livestock

(i) On you part as a farmer?

_____

_____

_____

(ii) On the part of the government?

_____

_____

_____

(iii) On the part of other organisations if any?

_____

_____

_____

45. What are your general comments towards livestock raising?

THANK YOU

THE UNIVERSITY OF ZAMBIA
DEPARTMENT OF GEOGRAPHY

PROJECT TITLE: CHALLENGES OF LIVESTOCK RAISING AMONG SMALL SCALE FARMERS IN SOUTHERN PROVINCE: THE CASE OF MBABALA AREA

QUESTIONNAIRE FOR THE VETERINARY OFFICER

Tick _/ the answer of your choice, fill in where necessary.

SECTION A

1. Sex

   (a) Male
   (b) Female

2. Age

   (a) < 25 years
   (b) 26-35 years
   (c) 36-45 years
   (d) >46 years

3. Level of education

   (a) Primary
   (b) Secondary
   (c) Post secondary

4. Have you ever worked anywhere before coming to this area?

   (a) Yes
   (b) No

5. If 'yes' to question 4 where and for how long?

Place	**No. of months/years**
_____	_____
_____	_____
_____	_____

6. If 'no' to question 4 where did you come from?

   (a) School
   (b) College

7. If your answer in question '6' is 'College' name it.

   _____

8. When did you come to this area? _____

SECTION B

9. What type of livestock exist in the area?

   (i) _____

   (ii) _____

   (iii) _____

   (iv) _____

   (v) _____

10. Are there any other types of livestock that can still be kept in the area?

    (a) Yes
    (b) No

11. If 'yes' to question '10' what are they?

    (i) _____

    (ii) _____

    (iii) _____

    (iv) _____

12. Have you been conducting census of all forms of livestock since you came to the area?

    (a) Yes
    (b) No

13. If 'yes' to question '12' how often?

(a) Monthly
(b) Every 6 months
(c) Yearly
(d) Others specify _____

14. If 'yes' to question '12' what are the figures?

Livestock	**Number**	**Year**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

15. If 'no' to question '12' why?

_____

_____

16. Do you offer extension services to all types of livestock?

(a) Yes
(b) No
(c) Others specify _____

17. If 'no' to question '16' why?

_____

18. Are there records of farmers selling their livestock?

(a) Yes
(b) No

19. If 'yes' to question '18' what are the common animals sold in their order?

(i) _____

(ii) _____

(iii) _____

(iv) _____

20. If 'yes' to question '18' are the sales figures increasing or decreasing?

(a) Increasing
(b) Decreasing

21. If the answer to question '20' is 'increasing' why do you think it is so?

_____

SECTION C

22. Are the livestock keepers facing any problems?

(a) Yes
(b) No

23. If 'yes' to '22' what are they?

(i) _____

(ii) _____

(iii) _____

(iv) _____

24. If disease and drought are some of the problems mentioned above, what are their impacts?

_____

_____

25. What are the common pests and diseases attacking livestock

Livestock	**Disease**	**Pest**
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____ _____ _____

_____ _____ _____

26. Are you carrying out any measures to solve the problems identified in question '23'?

(a) Yes
(b) No

27. If 'yes' to question '26' are there some improvements?

(a) Yes
(b) No

28. What system of livestock keeping is practiced in the area?

(a) extensive
(b) intensive

29. For any system chosen in 28, is it advantageous or disadvantageous

(a) advantageous
(b) disadvantageous

30. For any answer chosen in question 29 give reasons

_____

_____

31. Do you have enough vaccines for all types of livestock?

(a) Yes
(b) No
(c) Others specify _____

32. If 'no' to question '31', how has this affected your operations?

_____

_____

33. Do you have dipping tanks in the area?

(a) Yes
(b) NO

34. If 'yes' to question '33' how many are they?

_____

35. Are they enough?

(a) Yes
(b) No

36. Are they all working?

(a) Yes
(b) No
(c) Some
(d) Others specify _____

37. If 'no' to question '36' why?

_____

_____

38. If the answer to question 36 is 'yes' or 'some', do all farmers dip their animals?

(a) Yes
(b) No

39. If 'no' to question '38' why and what measure do you take to those who do not dip their animals?

(i) Reason

_____

_____

(ii) Measures

_____

_____

40. Apart from the government, are there any other organisations like Non-governmental organisations or Donors that are helping in livestock activities in the area?

(a) Yes
(b) No

41. If 'yes' to question '40' how are they helping?

_____

_____

SECTION D

42. According to your observation are living standards for the livestock farmers declining, improving or stagnant?

(a) Declining
(b) Improving
(c) Stagnant

43. Do you sometimes hold meetings for all farmers in the area?

(a) Yes
(b) No

44. If 'no' to question '43' why?

_____

_____

45. What advice do you give to farmers regarding improving their livestock?

_____

_____

46. What problems are you facing in your operations?

(i) _____

(ii) _____

(iii) _____

47. What could be you advice to the livestock keepers regarding the problems you have identified above?

_____

_____

_____

_____

48. With all that has been done and what is being done now, what do you think should further be done to improve livestock raising?

_____

_____

_____

49. Have you achieved anything since you came to the area?

(a) Yes
(b) No
(c) Partly

50. Explain further for the answer you have chosen in question 49.

_____

_____

_____

51. What are your general comments on the trend of livestock population since you came to Mbabala area and on the future of livestock enterprise in the area?

_____

_____

_____

_____

_____

THANK YOU