

**BASELINE SURVEY ON INTERVENTIONS IN  
UPGRADING ANIMAL HEALTH AND PRODUCTION  
INTHROUGH TRAINING AND CAPACITY BUILDING  
IN THE ASALS OF MARSABIT**



**REPORT BY MOUNT KENYA UNIVERSITY TEAM**

**(Dr. Kennedy K. Mutundu, Prof. John H. Nderitu, Dr. Dominic Mureithi, Dr.  
HamisiWainaina, Mr. Brian Ayugi)**

**P. O. 342 – 01000 Thika, Telephone +254 020 2338143/6/8 Fax + 254 020 2050315**

**Email: [info@mku.ac.ke](mailto:info@mku.ac.ke) Web: [www.mku.ac.ke](http://www.mku.ac.ke)**

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## **Abbreviations and Acronyms**

AHA – Animal Health Assistants.

ASAL-Arid and Semi-Arid Lands

CAHW – Community Based Animal Health Workers.

CBO- Community Based Organization

CDE-County Director of Education

CDF- Constituency Development Fund

DLPO – District Livestock Production Officer

DVO – District Veterinary Officer

ECD-Early Childhood Education

FGD-Focused Group Discussion

GoK-Government of Kenya

ILRI-International Livestock Research Institute

KARI- Kenya Agriculture Research Institute

KLMC – Kenya Livestock Marketing Council

KVB-Kenya Veterinary Board

LO – Livestock Officers

MCA- Member of County Assembly

MKU- Mount Kenya University

NGO- Non Governmental Organization

PACIDA – Pastoral Community Initiative Development and Assistance

RAE – Rehabilitation of Arid Environments.

REGAL-AG – Resilience and Economic Growth in Arid Lands Accelerated Growth.

REGAL –IR – Resilience and Economic Growth in Arid Lands Accelerated Growth

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## **Executive Summary**

Instrumental to accelerating economic growth through livestock value chain is the upgrading of inputs markets. High quality market and market based solutions are key drivers to accelerating economic growth. Key to input markets and producer-market linkages is animal health services. In the ASAL context, the skilled human resource to provide the desired animal health service has been non-existent and hence the mushrooming of the training of Animal Health Workers(CAHWs) whose work in disease prevention, surveillance and treatment is invaluable. However, theGoK, recently passed a bill reaffirming that government does not recognize CAHWs and that they cannot operate unless they are under the supervision of district veterinary officer. In reality, there are small number of professionally trained CAHWs and a small number of Veterinary Officers to expand their outreach to pastoral communities.

To exploit the above opportunities, a baseline survey was undertaken through the partnership and consultative project between Mount Kenya University and Resilience and Economic growth in the Arid Lands-Accelerated Growth (REGAL-AG) to devise a strategy that targets improving animal health as an input market that would enable pastoralist access to high quality services and inputs through animal health services providers outreach programs, upgrading the services providers and establishing both horizontal and vertical relationships. Therefore, the main objective of carrying out this study was to collect baseline information on opportunities and for interventions in upgrading animal health services and production in Marsabit County.

The data collection exercise was managed by consulting team of Mount Kenya University (MKU) and REGAL-AG played a support role especially in areas of logistics and capacity development amongst partners in the areas of Animal Health production and value chain. On the basis of terms of references, a number of data collection tools were used. A data collection team was assembled from both local students of the region and staff from MKU. The instruments used were In-depth interviews, focus group discussions and transect surveys within the area. Workshop was also conducted among the stakeholders and data collection was undertaken from the September 1 to September 10, 2013

As part of data collection as well as cost-cutting measures, field work tasks were divided between MKU and REGAL-AG partners and staff. MKU teams were responsible for conducting Key

informant interviews among the identified stakeholders at local area, focused group discussions and transect surveys.

The main natural resources identified in Marsabit County are forests, rangelands, winds, and wildlife. Water is a key resource that is limiting and scarce in the area. The community livelihood activities include livestock, farming, fishing and business. The key challenges identified in livestock production include drought, inaccessible veterinary services, limited livestock extension services, emerging diseases and inadequate labor to take care of animals.

The main issues surrounding education in the County are unavailability of education institutions, education infrastructure, enrolment and retention. Retention from standard one to form four is about 50%. The enrolment has been increasing in time as a result of campaign that has been going on for the last two years by UNICEF. The ratio of boys and girls who complete high school is about 1:2 (girls' vs boys). The reason why enrolment for girls is low is because girls put less effort in academic work, early marriages and lack of role models for the girls. Challenges for school enrollment in the County were identified. The transition rate from secondary school to University or tertiary learning institutions is low due to the above mentioned issues. The percentage of students qualifying for University requirements in the County are 20% out of total group. The study identified measures to increase transition to University.

The study established that the County has some training institutions operating within the region, which include Kenyatta University with satellite campus, University of Nairobi, Catholic church tertiary colleges among others but of interest was the fact that courses offered in this institutions do not meet the needs and requirements of the livelihoods and resources of the community. They offer courses such as Arts, carpentry and Education. This is a gap and opportunity for Intervention to offer tailor made courses which includes; Animal Husbandry, Veterinary medicine, Community Development and livestock field extension. This would upgrade Animal health production and service delivery.

The County has vast opportunities for upgrading animal health and livestock and livelihoods of majority at large resulting from the challenges that the community has gone through over the past years.

Identified in the study were various service providers in the Animal health industry and with each playing their roles towards upgrading the livestock industry. Financial institutions, Non-Governmental Organization, Training Institutions, Government and County Government when interlinked would mostly raise the living standard of the community.

There is training needs for capacity building in the County for Animal health and production. The Study identified key topics desired for training and further empowerment.

Lack of information was highlighted as one of the hindrance to information on training and capacity building opportunities. The participants therefore proposed the need to use more strategies to reach to the locals such as marketing in the community training opportunities, visit to locations and interactions with community opinion leaders, visit to schools for career talks and attending price giving ceremonies. To offer training, service providers would need to know the available infrastructural state and needs of the community. The study identified possible venues and spaces where training/classes can be carried out. The team also identified avenues through which the trainees will raise fees to enroll for training . The community in the event of trainings and scholarship will benefit in a number of ways that will improve their livelihoods. Participants also made proposals on how the training programmes can be made sustainable

There exists some opportunities for job creation for the graduates in the region. Having attained the necessary training the graduates can benefit from county employment, NGO employment or get self-employment though opening of private agro vets and private practice.

Key recommendations and way forward that the study established are also presented.

## CHAPTER ONE. INTRODUCTION

### 1.0 Background information

The delivery of the veterinary services has been in the decline and in many pastoral areas where professional veterinary service has been non-existent. The lack of professional veterinary service in ASALs has not only had a negative impact in livestock production and productivity, but has also led to the emergency of unethical veterinary drug supply and use. The latter has enormous potential for drug misuse and abuse. The provision of animal health services in ASAL areas has been hampered by several factors including vast distance, poor infrastructure, nomadic nature of the pastoralist, high level of insecurity and inadequate technical personnel willing to work in the general hostile pastoral environment.

The Marsabit County executive for agriculture and livestock development, quoted words from Dr. Willy Mutunga on the status of animal health services provision in Marsabit County and said, “Animal health services provision is from an institution so frail in its structures, so socially uprooted in its mannerisms and culture, so thin on resources, so low on its self-confidence, so segmented in its human resource formation, so unprofessionalised in its administrative cadre”.

He went on to stress the importance of urgent reform in order to reverse the trend.

Instrumental to accelerating economic growth through livestock value chain is the upgrading of inputs markets. High quality market and market based solutions are key drivers to accelerating economic growth. Key to input markets and producer-market linkages is animal health services. In the ASAL context, the skilled human resource to provide the desired animal health service has been non-existent and hence the mushrooming of the training of Animal Health Workers (CAHWs) whose work in disease prevention, surveillance and treatment is invaluable. However, the GoK recently passed a bill reaffirming that government does not recognize CAHWs and that they cannot operate unless they are under the supervision of district veterinary officer. In reality, there are small number of professionally trained CAHWs and a small number of Veterinary Officers to expand their outreach to pastoral communities.

This Baseline Report is a product of work by the Resilience and Economic Growth in the Arid Lands-Accelerated Growth (REGAL-AG) programme in Marsabit County. As a means of

increasing economic growth in Marsabit and other ASAL areas through inclusive and competitive livestock value chain, Regal-Ag has demonstrated the need for University interventions to respond to the gap in expertise in animal health services and production. This need is particularly acute in the ASAL regions, which has a history of low levels of tertiary education and training in livestock and related fields.

Sustainable University interventions required baseline data to inform decisions of establishing and exploiting training opportunities in the study areas. These data included acquaintance with the study area and an understanding of livestock owning community, their resource base, problems and opportunities in animal health services and production, as well as knowledge of training needs and capacity building strategies.

This report therefore outlines the objectives, protocols and instruments of the baseline study. The latter includes participatory/focused group discussions; key informant interviews, and a transect survey of the livestock keeping communities in Marsabit. The study was conducted in three locales of Marsabit County, namely Marsabit Town, North Horr and Loiyangalani. It was conducted over a period of nine days involving staff of Mount Kenya University with observers from Regal-Ag.

## **1.1. Study Objectives**

### **1.1.1 Broad Objective**

To collect baseline information on opportunities and for interventions in upgrading animal health services and production in Marsabit County

### **1.2.2. Specific Objectives**

- To obtain good understanding of the livestock owning community, their resource base, their way of life, tactics for survival, community opinions on issues of quality animal health service provision and livestock production
- Identify the opportunities, priorities and challenges in animal health and production in the area
- To gather information concerning existing conventional and indigenous veterinary knowledge and the nature and extent of the animal health problems

- Identify the existing animal health service providers, other stakeholders and their responsibilities and linkages in addressing the constraints of quality animal health service provision
- To do a need analysis on infrastructural availability, personnel and weak links in animal health service provision and resources for training
- To obtain good understanding of high school education and qualifications for University/College training

**1.2. Expected outputs/outcomes:**

- i. An inventory of animal health service providers, their roles, interlinkages, strengths and weaknesses established
- ii. An informed inventory of opportunities and priorities for commercial animal production training delivery
- iii. An inventory of infrastructural resources, personnel and weak links in animal health service provision training
- iv. High school profiles and levels of education and qualification for University/College training established and analysis of how universities could handle such training to ensure that university standards are maintained in the form of quality certificates
- v. Analysis of training needs, preferred community mode of delivery of training to different categories of service providers, various actors' roles in the training program, and understanding of how the training program will impact on the county economy
- vi. Action plans and recommendations on how training institutions would move the agenda forward.

## **CHAPTER 2.0 SURVEY METHODOLOGY**

### **2.1. Introduction**

The data collection exercise was managed by consulting team of Mount Kenya University (MKU) and REGAL-AG played a support role especially in areas of logistics and capacity development amongst partners in the areas of Animal Health production and value chain. On the basis of terms of references, a number of data collection tools were used. A data collection team assembled from both local Students of the region and staff from MKU. The instruments used were In-depth interviews, focus group discussions and transect surveys within the area. Workshop was also conducted among the stakeholders and data collection was undertaken from the September 1 to September 10, 2013

As part of data collection as well as well cost-cutting measure, field work task were divided between MKU and REGAL-AG partners and staff. MKU teams were responsible for conducting Key informant interviews among the identified stakeholders at local area, focused group discussions and transect surveys. REGAL staffs were responsible for organizing meetings and helping in interviewing the NGOs that they work with a stakeholder in their project implementation. Due to some administrative mishaps and logistical problems, MKU partners could not manage to conduct in-depth interviews with some county administrative officers and government officials. They were unable to administer all interviews earlier scheduled, conduct interviews and transect in the areas identified initially. The team leaders eventually ended up administering interviews to representatives of the office identified initially at the cost of thorough checking the right office holders. Table 1 represents the planned and actual interviews' that was conducted in the field

**Table 1: Planned and actual interviews**

	<b>Planned</b>	<b>Actual</b>
<b>NeedsAssessment Workshop</b>	22 participants of fair gender representation	20 participants; 18 male and 2 female
<b>In-depth Interviews</b>		
County Minister for Agriculture and Livestock	1	VET officer
County Minister for Education	1	County Director of Education
NGO Stakeholders in Animal Health(Financial Institution, NGOs and CBOs)	6	5
Head Teachers	3	2
Local Administrative Officers	3	2
<b>Transect Surveys</b>		
Marsabit Town	2	1
North Horr	2	2
Laisamis	2	0
Loyangalani	2	1
<b>Focused Group Discussion</b>		
Marsabit Central	1	1
Loyangalani	1	1

The administration of tools and protocols required sampling in order to produce results that would assist in estimating a number of indicators for the Entire County or project area. On the basis of sampling techniques adopted and outturn of the interviews conducted, the collected data weighted in order to estimate the key indicators. Below is the discussion of the sampling and weighting procedures.

## **2.2. Sampling**

### **2.2.1. Needs assessment workshop**

This was necessary so as to collect information about unexpressed/IMPLIED organized need that could only be met by conducting training. The workshop mobilized a composition represented by few members who were instrumental to the study. They included high school student representative, high school teachers, School management; community based animal health workers, representative from ministries of education and agriculture, local opinion leaders and pastoralists, NGOs and County Government. This composition had fair representation by gender and age.

### **2.2.3. In-depth Interviews**

Key informant interview was administered to representative from the livestock and also education since they were instrumental to the objective of the study. Also interviewed were sample NGO with specific example PACIDA; a Local Nongovernmental Organization working closely with pastoralists in the area and also existing financial institution. Sampled was also the head of secondary schools and local administrative officer.

### **2.2.4. Transect Surveys**

Transect line walks was done and to in areas of North Horr, Loyangalani and partly Marsabit Central. The sample areas were to give a clear picture of livestock owning community and infrastructure available and the community way of life. Along the survey, community members would be interviewed randomly.

### **2.2.5. Focused Group Discussion**

A plenary group consisting of wide representative from the community had focused group discussion focusing on community resource mapping and also livelihood analysis conducted in two locales of Marsabit central and Lloyangalani area. The group consisted of upto 12 persons with fair representation of both gender.

### **2.2.6. Sampled Area**

This baseline survey was meant to collect benchmark data for which evaluative surveys could be compared to so as part value chain analysis and viability of University Interventions. In particular, data would be required to asses MKU and REGAL-AG 'objectives of Upgrading Animal Health and Production Services by establishing the opportunities, Training needs and

challenges in establishing University in the County. Given the sample size of whole County Location and population of 291,166 (52% Male and 48% Female) and with 4 people per km<sup>2</sup> (Census 2009 GOK) and with four Constituencies namely; Moyale, North Horr, Saku and Laisamis. The area land coverage is approximate 70,961.3 km<sup>2</sup>. The team decision to sample areas of North Horr, Marsabit central and Longalayani, based on human density and Livestock Population since the areas above has high livestock concentration compared to other regions. Hence they were sampled and survey conducted in them.

### **2.3 Weighting the data for estimations**

As already alluded to, all the transect surveys in North Horr, Loingalani, Marsabit Central were covered. However, in Laisamis and Moyale and other areas. there were substitutions. Most of these substitutions happened after initial plans had been made. To avoid distorting the original picture the new survey areas maintained the original allocation of transects numbers of the substituted ones though population was different. However, the weight of Town central and North Horr was adjusted for the fact that one of the identified areas had been removed as well as the fact that areas covered, for some reasons, were not always the same as given. This justified the selection of the three areas that overall gave the picture and snapshot of the whole County in regard to the stipulated objectives.

### **2.4 Limitations of the study**

Given the high level of insecurity among the conflicting tribes who form the majority, failure to cover Moyale and other key areas which we had initially intended to do meant that the study had been denied a chance to comprehensively cover issues and opportunities in those other areas. It is likely that the study therefore relied on secondary data obtained from the offices to make deductions and conclusion

Time constraint was also an issue coupled with limited resources and study area to be covered in order to have transect survey and meet all the target persons for in-depth interviews. Hence the study did not have the benefit of all the data it required. The failure to get information from the County Minister of Education, Livestock and Agriculture, failure to conduct in-depth interviews with also ear marked persons, among others meant that there is gap in qualitative data especially on Agriculture and Livestock and also Education sector. However, we believe that the loss is

minimal because the persons that represented that office were interviewed and in-depth interviews with state veterinary officer and county director of education were conducted.

## **CHAPTER 3. SURVEY FINDINGS AND DISCUSSION**

### **3.1 Introduction**

This section deals with the core of the baseline survey and responds to the overall objective. It presents the extent of Training needs assessment for University Interventions in upgrading Animal health and Production from perspectives, presenting the research findings from data collection instruments(both quantitative and qualitative) and descriptive analysis sometimes supported by figures and graphs. It however starts by providing discussions on the workshop focused group discussions giving snapshot on the community resource mapping, livelihood analysis and training needs assessment; opportunities and challenges of Marsabit County.

### **3.2. COMMUNITY RESOURCE MAPPING**

The main objective of this exercise was to develop area profile by mapping the natural resources, infrastructures, social services and land use system within the area. Tools used in carrying out this exercise were area resource map and focus group discussion. The group members carried out an activity of mapping out their area and its key natural resources, infrastructure, social services and land use system. Using a checklist, the resources were identified using various categories to be discussed below. Further, the community members shared ways in which they resolve their resource use conflicts.

The participants identified the following resources found in the county. Some of the resources were classified as plentiful and the others as scarce in relation to their availability and accessibility. The plentiful resources identified were;( mixture of present tense and past tense)

- Forests
- Rangelands
- Wind
- Land for constructions
- Wildlife; elephants, buffaloes
- Sunshine
- Schools

Whereas the resources considered as scarce are, Water, Tertiary institutions, Vet services and Market for animals. The resources which are used particularly in terms of raising and caring for livestock are Pasture- grass, rangelands and water. The most problematic issue in relation to raising livestock among them being identified as water. These resources are mainly used by men and young boys. This is because some cultural ideologies deny women access to some of these resources. However there were resources that were identified as unused mainly as a result of lack of market or technology. These are animal products like hides and skin.

As mentioned above men and women have different access rights to resources for livestock and related agricultural production. Women have no right to own any of the resources especially married women as long as the husband is alive. In case a man dies, women can be allowed to inherit their husbands' property. Otherwise in case of death, a brother to the deceased assumes ownership and responsibility of the resources. Other activities women are involved in; Charcoal burning, Fetching firewood, Selling miraa, Fetching water and small businesses

The community participants were further asked of the challenges they face in livestock keeping. The following challenges were highlighted as the main challenges in livestock rearing faced by the community:-

- Drought
- Inaccessible vet services
- Lack of extension officers
- Tribal clashes
- Coming up of new diseases that community is unaware of
- Inadequate labour to take care of animals; educated young people leaving the old to take care of the animals.

At the community and household level, decision making on the use of resources are made by men mainly as the heads of the family. The local administration and elders are usually engaged in consultations before any major decisions are made affecting the community. In the recent past women have been allowed to take part in decision making. This inclusion of women is perceived to be bringing a positive change in the livelihoods of the families.

There are conflicts when it comes to resource usage. The conflicts mainly revolve on water, grazing land, animals and human-wildlife conflicts. The solutions and strategies used to resolve the conflicts employed by the locals are peace meetings, cultural festivals, intermarriages, workshops and seminars.

### 3.3. COMMUNITY LIVELIHOODS

The community livelihood analysis activity sought to identify important livelihood activities and income sources. The tools used in the discussion were Livelihoods matrix, supplemented by focused group discussion. It desired to deduce the resources available and those utilized in order of importance in respect to community perception. The table below shows how the resources mentioned in the discussion was ranked;

**Table 2: Livelihood Analysis Prepared by Participant during FGD in Marsabit**

	1	2	3	4	5	6	7	8	9	Ranking
<b>Livestock</b>	X	1	1	1	1	1	1	1	1	8
<b>Farming</b>	X	X	2	4	5	2	2	2	2	5
<b>Fishing</b>	X	X	X	4	5	6	7	8	1	3
<b>Business</b>	X	X	X	X	4	4	4	4	4	5
<b>Employment</b>	X	X	X	X	X	5	5	5	5	4
<b>Charcoal</b>	X	X	X	X	X	X	7	6	6	2
<b>Firewood</b>	X	X	X	X	X	X	X	7	7	2
<b>Query</b>	X	X	X	X	X	X	X	X	8	1
<b>Minerals(Moyale)</b>	X	X	X	X	X	X	X	X	X	Negligence

The following are the main sources of livelihoods and cash income in the area as put forward by the participants;

- Livestock
- Crop farming-miraa, maize, beans
- Fish farming especially in Lonyagalani
- Business(retail shops)

- Employment
- Charcoal burning
- Quarrying
- Minerals

Of the sources of livelihoods identified above, the locals pointed out that Business is more important in cash income. This is because; opinion that has been acquired over time is that farming is not consistent. Further farming is not done in Marsabit Central but it is only done in the mountain region where farming could be considered more important. Among the El molo community in Loiyangalani fishing is more important to the Elmolo. Charcoal burning is also widespread except among the Elmolo so it is also considered important.

The community has observed in surge of some new activities and changes in livelihoods that have affected their way of living and income generation. The activities identified are; Mineral, Quarrying, Charcoal burning and Business

Changes the above has brought to the community include,

- ✓ Community constructing permanent homes
- ✓ Charcoal is affecting the forest cover
- ✓ Alternative sources of livelihoods and income

In the community some activities are carried out more by a particular gender. This is influenced by culture and access to some resources such as financial resources and land. Men mainly carry out livestock farming, farming, fishing, quarrying and business whereas women carry out charcoal burning, farming, small scale business

### **3.4 AGRICULTURAL AND LIVESTOCK DEVELOPMENT**

The state of agricultural and livestock development in the county was deduced from a key informant interview administered to the County Director of Veterinary services, Dr. Mutahi- who is also State Vet. The purpose of the interview was to identify the state of livestock keeping as a means of livelihood in the county, the existence of other forms of agriculture and the opportunities in agriculture in the region.

State VET informed that in terms of the community opinions on issues of quality animal health service provision and livestock production, the community prefers technical staff that are properly trained to CABHWS because they are aware of difference between the two as CABHWS are chosen amongst the community which is largely illiterate. CABHWS are also pastoralists and treat their animals as well as of the community at a fee. County has at least 100 CABHWS

The opportunities in pastoralism exist in the increasing demand for animal health services. There are few staff in government and NGOs are trying to fill the gaps. This has also created opportunities for private sector and practice.

The government identifies the challenges affecting pastoral communities in the county to include,

- ✓ Care of animals during delivery is poor-CABHWS are not well trained and are few in number
- ✓ Transport is inadequate- county has only 3 vehicles and also fuelling and maintenance of vehicles is a challenge
- ✓ Reluctance by pastoralists to spend money in case of animals due to dependence created by NGOs e.g., Pastoralists are required to pay for some vaccines, dewormers, but are not willing to pay.
- ✓ Ignorance on animal health

There are a number of animal health service providers in the county. These service providers can be classified into three categories/groups namely,

1. Government-District VET officer  
-animal health technicians (about 15 in the county)
2. NGOs-seasonal(support rapid/emergency programmes)
3. CABHWS

Indigenous veterinary knowledge has been part of the pastoral community for ages. However, today this knowledge is found only in traces. The knowledge is evident in patterns of diseases in animals. The locals are also aware of animal diseases and have local names for them. Despite this knowledge most people do not use herbs, they appreciate use of modern methods. However, it can be appreciated that the community has some indigenous knowledge that can be harnessed and packaged well in animal health

There are various stakeholders involved in the livestock industry in the county. These stakeholders are involved in the various levels of livestock production and bear different responsibilities from time to time. The stakeholders are;

- ✓ NGOS are the main stakeholders. They provide inputs and logistics
- ✓ Research institutions-KARI, KETRI for research and training
- ✓ Financial institutions e.g., banks
- ✓ Humanitarian organizations e.g., Red cross
- ✓ Universities

For livestock production to thrive the county survives on critical infrastructure. Some of the infrastructures are minimal and need improvement and increase in number so as to meet the needs of the community. The infrastructure available is,

- ✓ Slaughter houses in major towns- Marsabit, Moyale, and another coming up in Laisamis
- ✓ Offices-in old districts(Marsabit and Moyale)
- ✓ Vehicles-3
- ✓ Motorbikes-6
- ✓ Laboratories-2(Marsabit and Moyale) with basic equipments

As mentioned above some infrastructural needs are recorded in the county. However some weak links in animal health services provision in the county can be identified further as limited resources for veterinary department, lack of private services to compliment what government provides and of adequate support from the government. Further, the technical personnel need to be improved

### **3.5. EDUCATION DEVELOPMENT IN THE COUNTY**

The survey also explored the Education development in the County stipulating the chronology of education institution in the region, the enrolment rate, and infrastructure available and the challenges and opportunities for the upgrading Animal Health and Production in service delivery. Information was gathered using key informant interview with the county minister of education as well as existing data from the ministry over the past five years. In average from the data given below and further discussion with the county minister of education, the main issues surrounding education are enrollment, retention, challenges and opportunities.

Percentage of school retention from standard one to form four in the county is not constant and approximated at half i.e 50% however in some areas this figure is much lower. The number has however been increasing over time as a result of enrollment drive campaign that has been going on for the last two years spearheaded by UNICEF.

The ratio of boys and girls who complete high school is placed 1:2(Girls Vs Boys). The reasons for this ration is,

- ✓ Girls put less effort in academic work
- ✓ Early marriages
- ✓ Lack of role models for the girl child

The challenges for school enrollment in the county were identified as;

- ✓ Lack of and poor infrastructure such as Classrooms
- ✓ Lack of boarding facilities
- ✓ Shortage of teachers-100 children per class
- ✓ Pastoralism lifestyle
- ✓ Food shortage
- ✓ Very few colleges

Generally, the percentage of students who qualify for University entry through the Joint Admissions Board and those who meet the minimum qualifications are:-

- ✓ 10% of those who sit for K.C.S.E meet the minimum JAB requirement (B+) to join public universities.
- ✓ Another 10% C+
- 80% fall in the other grades

There exists the need in the county to improve the performance so as to increase the number of students transiting to the various levels of education and in particular the higher level. The following are some of the measures as suggested;

- ✓ Employ more teachers
- ✓ Assessment and supervision in schools
- ✓ Motivation of teachers
- ✓ Providing teaching and learning materials, lab equipments and text books
- ✓ Exposure visits-field trips
- ✓ Parent awareness- carry out education days sensitizing the parents on importance of education around the community. (80% of parents are illiterate)
- ✓ Hold stakeholder workshops
- ✓ Adult education
- ✓ Tertiary institutions

The status and access to tertiary education facilities and resources in the county vary from place to place. This is influenced by infrastructural development and levels of school enrollments. Some institutions of higher learning and other tertiary institutions have moved to the areas setting up some facilities. Examples of such institutions are;

1. Recently- Maasai Mara university college offering training on ECD and Arts
2. Kenyatta university campus- mainly target teachers
3. University of Nairobi
4. Technical schools like Catholic technical school- hands on training on carpentry, masonry,
5. Isacko Polytechnic- Chalbi, technical courses

As mentioned alongside the institutions few of them offer courses that could be considered as priority in the largely pastoral community. Such courses as animal husbandry, animal health, veterinary medicine and community development and extension services are not offered. The lack of these courses targeting community livelihoods has thus created a gap and consequently an opportunity in training.

There also exists a need to increase enrollment into tertiary institutions. To do this the following measures were suggested;

- ✓ Create awareness as concerned the tertiary colleges and the courses they offer
- ✓ Institutions to be set up in the county
- ✓ Man power and technical personnel
- ✓ Supply learning materials and equip libraries
- ✓ Seek financial support to reduce cost

Data was collected from the ministry of education as shown below detailing the teacher establishment per school, enrollment, retention and transition from primary to secondary and secondary to university across the five districts as tabulated in tables 3-7. The data found out in deduction of tabulation the enrolment rate per regions over the few years and how they are likely to transform the livestock industry. The secondary data given was able to establish information based on the following areas;

- ✓ County Enrolment per gender in every district
- ✓ Teacher’s establishment for Primary schools per district vis-a-vis enrolment rate
- ✓ Transitions Rate and Percentage from Primary to Secondary
- ✓ Challenges affecting enrolment in schools

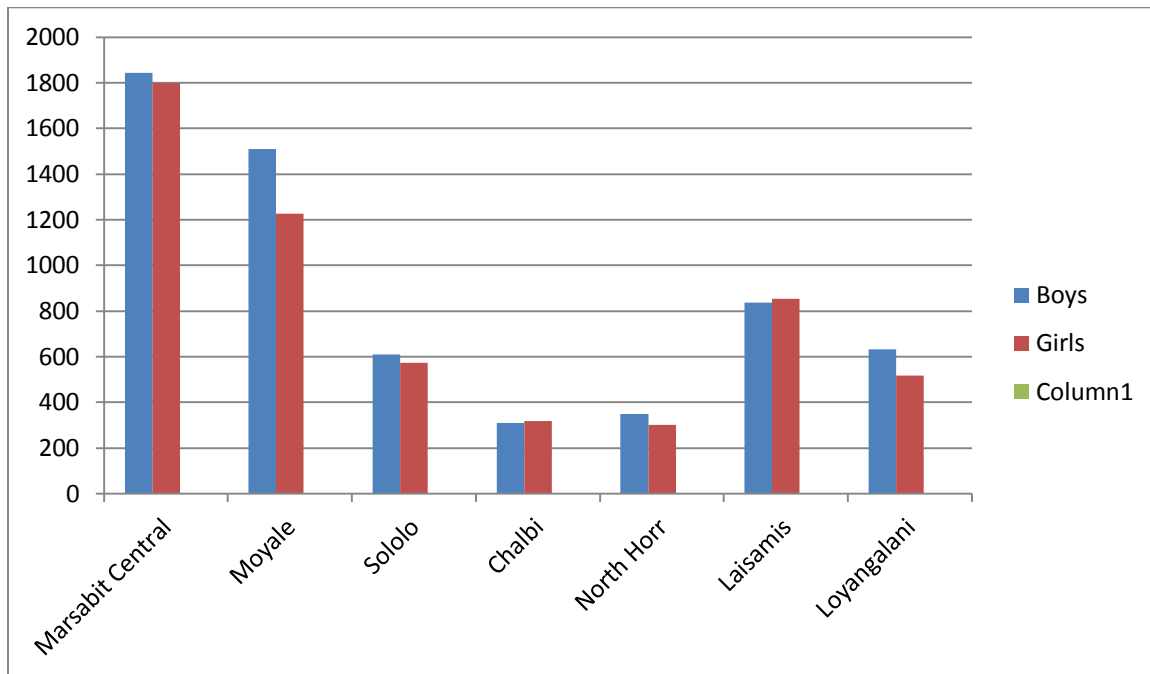
Below is the data as obtained.

**Table 3: Marsabit County Enrolment per (gender) District: Primary Schools**

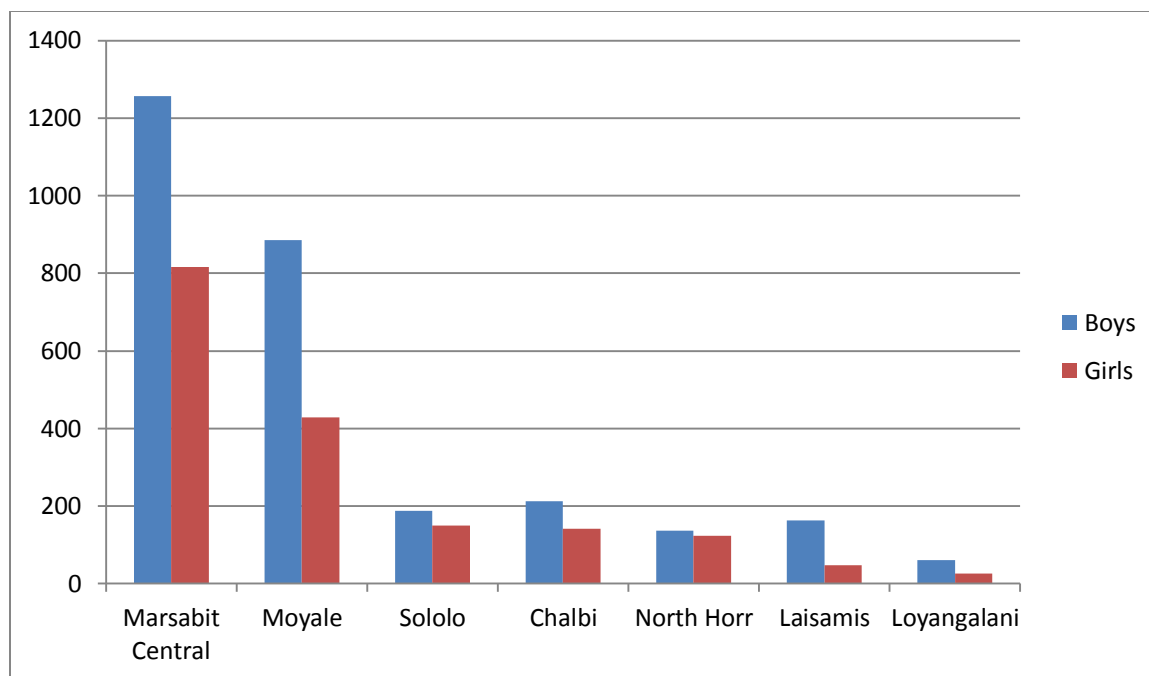
<b>District</b>	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
<b>Marsabit central</b>	1845	1798	3343
<b>Moyale</b>	1509	1228	2737
<b>Sololo</b>	609	574	1183
<b>Chalbi</b>	310	320	630
<b>North Horr</b>	350	302	651
<b>Laisamis</b>	836	854	1682
<b>Loyangalani</b>	634	518	1152

**Table 4: Marsabit County Enrollment;Secondary Schools**

District	Boys	Girls	Total
Marsabit central	1257	817	2054
Moyale	885	429	1315
Sololo	187	150	347
Chalbi	213	141	354
North Horr	136	123	259
Laisamis	163	48	211
Loyangalani	60	26	86



**Fig 1: Primary school per district enrollment in the year 2013**



**Fig 2: Secondary school per district enrollment in the year 2013**

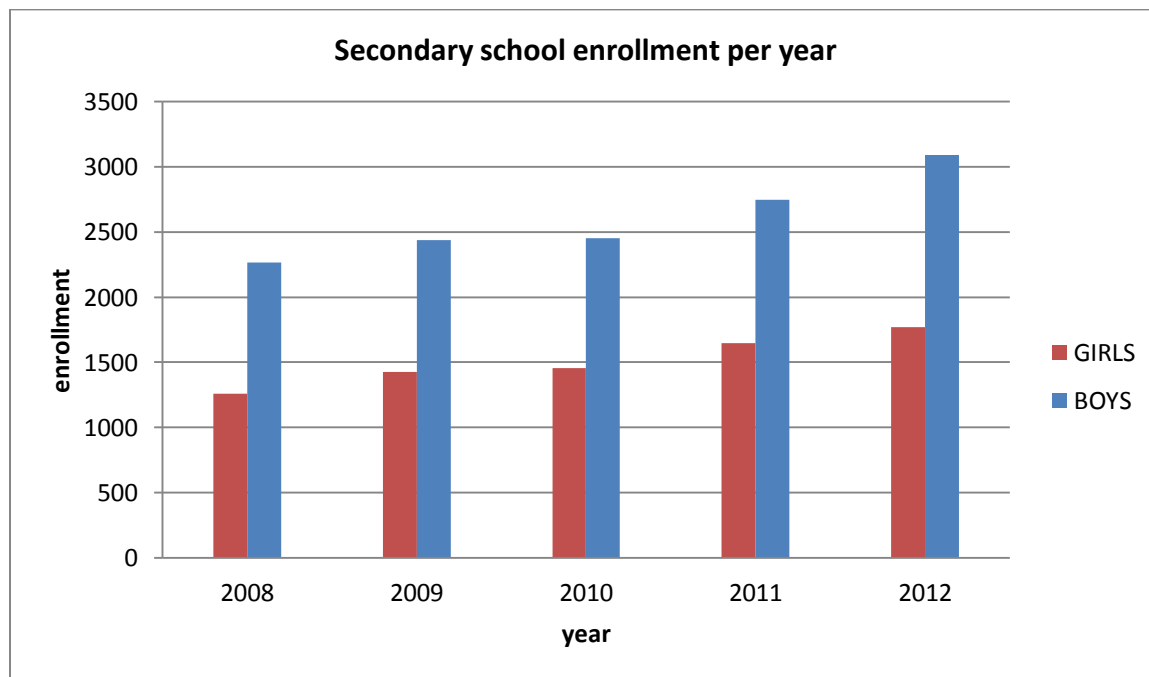
Generally as can be compared with the data below, enrollment in the year 2013 both in Primary and secondary levels is the highest. Education is slowly picking up in the county across all the districts. Needless to say though, some districts have dismally low numbers. Glaringly, Loyangalani, Laisamis and Sololo are the victims. Enrollments in these areas are still very low and call on all stakeholders to pull resources and efforts together to improve the scenario. It is however worth pointing out that in case of setting up higher institutions of learning and other tertiary institutions, Marsabit Central and Moyale districts offer the most opportunity and interests. This is because of the number of students enrolled and retained in secondary schools which goes to say more than any other districts; these districts could offer more students willing to enroll in the institutions.

**Table 5: Enrollment in secondary schools-Marsabit County 2008-2012**

<b>YEAR</b>	<b>DISTRICT</b>	<b>BOYS</b>	<b>GIRLS</b>	<b>TOTAL</b>
2008	MARSABIT CENTRAL	746	586	<b>1,332</b>
	MARSABIT SOUTH	124	40	<b>164</b>
	MARSABIT NORTH / CHALBI	86	78	<b>164</b>
	LOYANGALANI	39	14	<b>53</b>
	NORTH HERR	76		<b>76</b>
	LAISAMIS	242	121	<b>363</b>
	MOYALE	953	422	<b>1,375</b>
	<b>TOTAL</b>	<b>2266</b>	<b>1261</b>	<b>3527</b>
2009	MARSABIT CENTRAL	789	690	<b>1,479</b>
	MARSABIT SOUTH	163	42	<b>205</b>
	MARSABIT NORTH	113	75	<b>188</b>
	LOYANGALANI	56	15	<b>71</b>
	NORTH HERR	89		<b>89</b>
	LAISAMIS	239	150	<b>389</b>
	MOYALE	987	455	<b>1,442</b>
	<b>TOTAL</b>	<b>2436</b>	<b>1427</b>	<b>3863</b>
2010	MARSABIT CENTRAL	849	846	<b>1,695</b>
	MARSABIT SOUTH	191	59	<b>250</b>
	MARSABIT NORTH	162	86	<b>248</b>
	LOYANGALANI	53	15	<b>68</b>
	NORTH HERR	113		<b>113</b>
	LAISAMIS	242	129	<b>371</b>
	MOYALE	842	321	<b>1,163</b>
	<b>TOTAL</b>	<b>2,452</b>	<b>1,456</b>	<b>3,908</b>
2011	MARSABIT CENTRAL	966	886	<b>1,852</b>
	MARSABIT SOUTH	224	68	<b>292</b>
	MARSABIT NORTH	196	135	<b>331</b>
	LOYANGALANI	77	25	<b>102</b>
	NORTH HERR	119	29	<b>141</b>
		210	132	<b>342</b>
	MOYALE	953	374	<b>1,327</b>
	<b>TOTAL</b>	<b>2,745</b>	<b>1,649</b>	<b>4,394</b>

2012	MARSABIT CENTRAL	1,237	990	<b>2,227</b>
	MARSABIT SOUTH	235	81	<b>401</b>
	MARSABIT NORTH	213	141	<b>354</b>
	LOYANGALANI	60	26	<b>86</b>
	NORTH HERR	141	74	<b>215</b>
		197	150	<b>347</b>
	MOYALE	1,009	309	<b>1,318</b>
	<b>TOTAL</b>	<b>3,092</b>	<b>1,771</b>	<b>4,863</b>

Source; County Director of Education Secondary data collected over past years

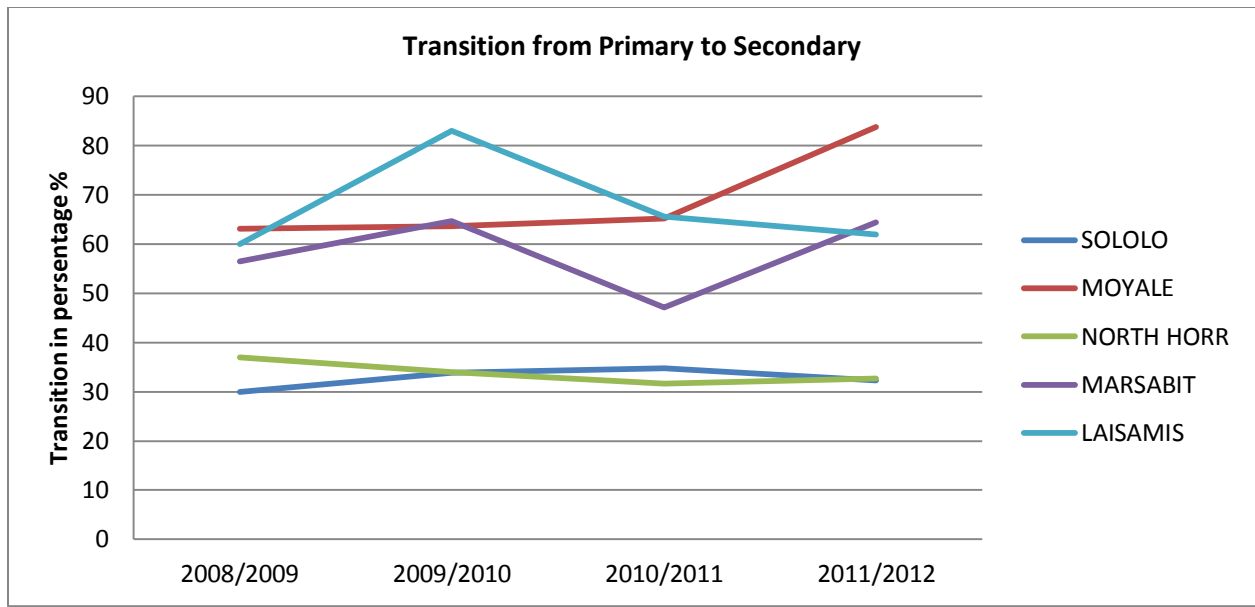


**Fig 3: Enrollment per year (2008-2012)**

As it can be deduced above secondary school enrollment has been increasing per year in the county. This can be attributed to the ongoing efforts by the civil society such as NGOs that have been carrying out enrollment drives within the county. There has also been significant increase in interest in education in some counties such as Marsabit Central District. As can be noticed however, girls enrollment is still low compared to the boys. This has been largely blamed on early marriages, low interest in school and household chores allocated to them.

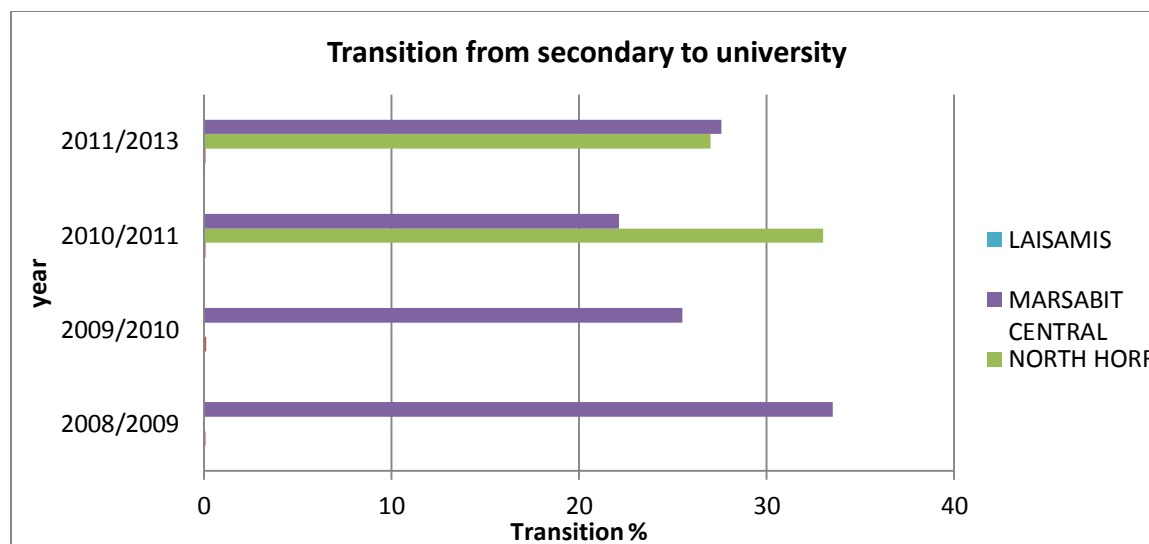
**Table6. Transitions rate from primary to secondary and to university per district**

<b>District</b>	<b>year</b>	<b>Transition rate primary to secondary</b>	<b>Transition Rate Secondary to University</b>
<b>SOLOLO</b>	2009/2010	33.84%	0%
	2010/2011	34.83%	0%
	2011/2012	32.31%	0.039%0.04
<b>MOYALE</b>	2008/2009	63.05%	0.08%
	2009/2010	63.59%	0.11%
	2010/2011	65.16%	0.07%
	2011/2012	83.83%	0.07%
<b>NORTH HERR</b>	2008/2009	37.0%	0%
	2009/2010	34%	0%
	2010/2011	31.6%	33%
	2011/2012	32.75%	27%
<b>MARSABIT CENTRAL</b>	2008/2009	56.43%	33.51%
	2009/2010	64.64%	25.51%
	2010/2011	47.15%	22.12%
	2011/2012	64.35%	27.59%
<b>LAISAMIS</b>	2008/2009	60%	0%
	2009/2010	83%	0%
	2010/2011	65.6%	0%
	2011/2012	62.0%	0%



**Fig 4: Transition from Primary to Secondary**

Transition from Primary School to secondary school is affected by issues such as means of livelihoods, and pastoralism . As the nomads move from one place to another some primary schools pupils never get to enroll for their form one. Distance from home to most secondary schools is also a challenge to some students considering the fact that road network is still a challenge in the area. Other hindrances are, early marriages for the girls and cattle herding for the boys. Having noted that however, the number of pupils joining form one has been increasing due to the establishment of more day schools in the area.



**Fig 5: Transition from Secondary to University**

Like transition from primary to secondary school, transition to university from secondary schools is also affected by pastoralism. However other factors affecting this include resources and lack of infrastructure. There are few universities in the area and the resource base of the community does not allow them to enroll in universities out of the county. On the other hand students cannot enroll for university education due to poor grades. This is to say the other greatest challenge is that most students finishing their form four do not attain the necessary grades to enable them to register for a course in the university.

Of interest however, is the fact some districts with high enrollment in secondary schools have a low transition to the university. Case in point Moyale district, whose transition is barely 1%. Compared to North Horr whose enrollment in secondary school is quite low but the transition to university is comparably higher. This can be attributed to presence of higher learning institutions in the area or awareness of such?



**Plate 1. In-depth Interview with County Director of Education Mr.Didey Isandap**

### **3.6ANIMAL HEALTH SERVICE PROVIDERS,- THEIR ROLES, INTER-LINKAGES, STRENGTHS AND WEAKNESSES**

#### **3.6.1. Partners and their role in animal health and production in Marsabit county**

The partners in animal health service delivery identified include;

- County Government
- Non-Governmental Organization
- Private Vets/Agrovets owners
- Financial Institutions
- Community Pastoralist
- Training Institutions like Universities and Tertiary Colleges
- Research Institution

The following are the output of discussions.

## **A. Financial institutions**

The role of financial institution is paramount in entrepreneurial development of pastoral communities such as the one in Marsabit County. During the baseline survey when the team had in-depth interview with branch manager of one of the financial institution in the area; Equity Bank, it was established that the financial institutions can offer the services listed below to pastoral farmers to achieve accelerated growth in commercialization and economic development of the communities themselves and the county in general through livestock industry;

### ✓ Offer credit Facilities;

Equity bank representative in the study noted that the financial institution can offer credit facilities to farmers using livestock as collateral to their loans if professional and improved management structures are put in place as suggested by manager

Financial institutions can also finance the franchise model championed by Sidai Africa to enable the communities of Marsabit access to quality drugs and animal health and production services. Through partnership with Sidai Africa limited, financial institution can provide grants to professional that are not employed to be able to finance the franchise model of business.

### ✓ Sponsor training in the field of animal health and production

During the discussions, Mr. Mwangi suggested that the financial institutions also will have a role of financing technical training to the youth in the field of animal health and production. These trainees will thereafter offer animal health and production services to farmers in Marsabit County.

### ✓ Facilitate Approach in Marketing

Marketing of livestock product and by-product was listed as one of the major constraints that the farmers face and hence lose a lot of their investment through cartels and middle men. He reiterated the importance of financial institutions in assisting farmers in marketing their products and financing industries that will enhance value addition to the products thereby increasing the value of the product on the ground hence fetching the farmers' adequate returns.

✓ Provision of Financial literacy service and training to the community

It was established in all presentations that many pastoral communities have inadequate knowledge on economics and finance. This has led to the communities not accepting banking and other forms of financial services. The farmers in the county keep animals not as business provision but as a cultural practice. It was suggested that financial institutions will have a major role in educating and sensitizing the communities on the importance and benefits of financial services such as banking and transforming their mindset to commercialization of livestock industry vis-à-vis cultural satisfaction and practice.

✓ Livestock Insurance

The opinion leader emphasized the need for the financial institution to engage and develop a reliable livestock insurance policy that will cushion the farmers from unprecedented and unforeseen natural disasters like drought and flooding that often affect the county leaving the farmers with barely all animals dying. This plan will see the farmers being compensated on their losses and therefore able to restock.

## **B. Non-Governmental Organisations (NGOs)**

### **PACIDA**

PACIDA is National Non Governmental Organization working in larger Marsabit County and Ethiopia with its core program as based on livestock as livelihood support for pastoral communities of ASALs areas. The organization works to build synergy in commercialization of livestock industry between pastoral farmers and marketers of livestock products. Pacida also facilitated training of low cadre livestock technician referred to as CAHBAW with an aim of provision of animal care services to the pastoral communities with the new regulations fronted by KVB. Pacida also aims at facilitating training of livestock technician through the Regal-ag program in partnership with MKU to ensure that graduates will be recognized by law and also provide professional services to the livestock owners.

## **USAID/Resilience and Economic Growth in the Arid Lands – Accelerated Growth (REGAL-AG)**

The main goal of REGAL-AG is to stimulate increased economic growth by means of a more inclusive and competitive livestock value chain. REGAL-AG seeks to ensure pastoral and agro-pastoral communities have secure access to natural resources with pastoralists participating more profitably in livestock value chain to enhance livestock productivity and to stimulate new and viable economic activities within the communities.

### **REGAL-AG Components**

- ❖ Improving the enabling Environment
- ❖ Improving market Linkages
- ❖ Improving Livestock productivity
- ❖ Expand existing & develop new input and service markets
- ❖ Expand livestock-related economic opportunities

The approach of REGAL-AG is facilitative and inclusive Value Chain Development

By inclusiveness REGAL-AG seeks interventions targeting four situational groups-moving away, branching out, hanging in and stepping up from pastoralism. Gender integration focused on female empowerment and Putting community institutions as drivers of change. The program also targets Active inclusion and integration of government.

It further puts focus on learning platform that engages multiple stakeholders to improve on the human resource capacity.

REGAL-AG seeks to engage Facilitative value chain development to widen the market for products and by-products within the livestock industry. This also stimulates changes in a market system without taking a direct role in the system.

Other roles of REGAL-AG include

- ✓ Funding-financial resources

- ✓ Capacity Building
- ✓ Agent of change as shown by the Facilitative Approach
- ✓ Employment for technical Staff
- ✓ Support in capacity building
- ✓ Policy development and advocacy
- ✓ To play a catalytic role in facilitating of various sectors

### **C. Community/farmers**

The communities or pastoralist in Marsabit County are the owners of livestock and therefore they are in the driving sit for any constructive improvement in their livelihoods. The study pointed out that the communities must be ready to learn and give up on negative cultural activities that hinder economic growth in livestock sector and the county in general.

During the transect walk and meeting with local communities in different regions and areas ; it was pointed out clearly that negative cultural practices such as stealing animals for marriage that really pulls the industry downwards.

The community should play a role in enhancing security by curbing cattle rustling. They should also embrace an attitude change and perception hence adopting livestock pastoralism as an economic venture and not a social status.

The community should also embrace youth and women empowerment as a tool for indiscriminative economic and social growth within the county.



**Plate 2. Community Members participating in interactive session during one of the visits to Loyangalani**



**Plate 3. Dr. Mureithi responding to questions posed by one of Community members in the discussions**

## **D. Training institutions**

The main role of tertiary institutions as established during the study is human resource capacity building (Man power development) that will provide technical support to livestock industry in Marsabit County.

Other roles include;

- i. Training Institution can develop tailor made training model in ASALs areas; like animal health and animal Production. The training programs should be developed specifically to cater for form leavers and class eight drop out.
- ii. Short courses in Business and Entrepreneur courses to community members
- iii. Mobilization of Student from ASAL areas to form Clubs and Association to spearhead advocacy and voluntarism on issues of livestock and pastoralism; NGO and Training Institutions can spearhead the process.
- iv. University to support outreach program focusing towards ASAL areas so as to enhance commercialization.
- v. Set up training Centre in the local area as opposed to towns to ensure the human resource capacity built benefit the communities within the locality
- vi. Development of new technologies through research (Skill development)

## **3.7 ANIMAL HEALTH SERVICE DELIVERY AND PRODUCTION**

### **3.7.1. Opportunities and priorities for Health Service Delivery and production**

- ✓ Devolution; Policies, Land and Resources
- ✓ Financial Institutions to offer credit facilities
- ✓ Set up of training institutions
- ✓ Utilizations of Solar Energy; establish solar fridges
- ✓ Devolve System of Government
- ✓ Willingness and Commitment of Actors
- ✓ Existence of unexploited market like locals and bordering state
- ✓ Existence of Manpower and Human Labor
- ✓ Availability of Livestock

- ✓ Vast land to support extensive production
- ✓ Many value chains
- ✓ Rich cultural practice
- ✓ Improving and preservation of genetic

### 3.7.2. Challenges and Proposed solutions to opportunities of Animal Health Service delivery and Production

CHALLENGES	SOLUTIONS
Staffing; Few technical staff	County Government to recruit more Vet
Technical staff are not Practicing	Investment more in Private Vet sector
Kenya Vet nary Board not recognizing Community Based Animal Health Workers(CBAHWs)	Upgrade CBAHWs/AHA'S Through Training and Advancement of courses which is the source of opportunities for the establishment of University in Marsabit
Lack of Business skills for unemployed AHAs	-Establish Local Enterprise for Business Training skills for the youths and locals -Increase human resources capital
Infrastructure challenges/Mobility; poor road network and no network coverage	-Maintain Roads and on aspect of network coverage; Governor to lobby for setting up of the network provider since he has a direct contact with the relevant authority concerned
Illiteracy; Resistance to change	Create awareness by providing information
Creation of dependency by NGOs/free Vet services	-Unified donor funding strategies -Coordination/priorities of county
Insecurity	-Security surveillance in monitoring; increase security personnel -Animal identification
Harsh Weather conditions	Pasture management; ranching for dry grazing season and development of water point to keep drought resistance animals

High dropout from livestock production	-
Insufficient proper delivery services in animal production	Embracing new technologies
Limiting cultural practices	-Awareness Creation through Outreach Programmes Organized by Training Institutions like Mount Kenya University
Marketing livestock product	-Commercialize in farming in animal production -Value addition
Exploitation by middle-men	Market coordination
Poor policy guideline	Formulation of farmer friendly policy
Lack of technical knowledge in Animal Health and Production	



**Plate 4. Dr. Mutundu having one on one session on the challenges that community is facing**

### **3.8 TRAINING NEEDS AND CAPACITY BUILDING IN ANIMAL HEALTH SERVICES AND PRODUCTION**

An activity to analyze the training needs and capacity building in animal health services and production was done. The main objective of the activity was to identify opportunities for training and capacity building in animal health services and production. Questions were asked in a focused group discussion and the responses recorded that were further analyzed to address the needs, opportunities and gaps in training.

From the discussion, the participants highlighted the necessity of training to increase or fill the gap of lack of skilled personnel in animal health services. They informed that the area has only 5 veterinary officers serving 7 districts, 4 constituencies, and largest in Kenya, worsen by poor infrastructure. The need for trainings and capacity building is for the desire and need to increase the level of literacy in livestock production which is the main economic/livelihood activity.

The topics highlighted as desired for training and further empowerment are;

- Animal health, with focus on diseases which affect specific species in the area; camel, donkey and other cattle
- Range management; to manage range resources; water and grazing areas
- In-breeding; genetics and knowledge in local breeds
- Marketing, livestock production and extension services
- Behavioral change
- Community development
- Entrepreneurship
- Conflict management/resource use conflict resolution
- Service devolution

Lack of information was highlighted as one of the hindrance to information on training and capacity building opportunities. The participants therefore proposed the need to use more strategies to reach to the locals such as marketing in the community training opportunities, Visit to locations and interactions with community opinion leaders, Visit to schools for career talks and Attending price giving ceremonies. Other strategies proposed are,

- Offer support to local based students to attend some training programs

- KESHA association
- Form association of community animal health workers

The participants felt that given opportunity, trainings and enrollment and enrollment drives can be done so that a critical mass of over 50 students can register to start their classes in January 2014. They felt that due to the level of education in the areas the focus of institutions seeking to offer university education should first focus on certificate and diploma levels of training. The classes were proposed to be offered I evening, weekend and institutional based based/school based modes so as to attain higher popularity and registration. The choice of time is mainly influenced by means of livelihoods, distances from institutions and availability of training spaces.

To offer training, service providers would need to know the available infrastructural state and needs of the community. The participants identified the following as possible venues and spaces where training/classes can be carried out.

- Use available schools like secondary schools during school holidays
- Upcoming buildings
- Existing laboratories in the District Vet, boost in tools at county level

On how the trainees will raise fees to enroll for trainings and admission to higher places of learning, the community members managed to identify a number of sources of funds for scholarships and bursaries. These are,

- Sale of animals
- Harambees
- CDF/Bursaries
- Scholarships from private institutions and NGOs
- Scholarships to best performing students
- Equity scholarships
- Loans form financial institutions

The community in the event of trainings and scholarship will benefit in a number of ways that will improve their livelihoods. The areas highlighted in the discussions are as follows,

- ✓ Reduction in Mortality of Animals

- ✓ Increased knowledge in Animal Husbandry and therefore increased production
- ✓ Diversification in Animal Production therefore security
- ✓ Bring Services closer to the community leading to cutting of cost
- ✓ Knowledge in quality products e.g. drugs
- ✓ Self-employment for the graduates
- ✓ Improvement in other sectors of the economy e.g. Infrastructure, human health, education
- ✓ Healthy Herds
- ✓ Improved record keeping in Animal health
- ✓ Attract other types of training e.g. Education, Medicine, Law, Business Administration

To ensure that the programs are sustainable for and in the community, the participants proposed the following;

- ✓ Training should be affordable
- ✓ Training of more trainers
- ✓ Partnerships e.g. Between Training, Finance and Government Institutions
- ✓ Training Institutions should have a campus in Marsabit County
- ✓ Mobile outreach and training to reach more remote areas
- ✓ Involve Established institutions in Animal Health e.g. ILRI, KARI
- ✓ Continued/sustained Political goodwill and support from County Government
- ✓ Policy Framework development and direction on Training and Employment opportunities
- ✓ Development of support infrastructure e.g. Abattoirs which will enhance market

There exists some opportunities for job creation for the graduates in the region. Having attained the necessary training the graduates can benefit from county employment, NGO employment or get self-employment through opening of private agro vets and private practice

## **CHAPTER 4. SUMMARY, RECOMMENDATIONS AND WAY FORWARD**

### **4.1SUMMARY**

Our main objective of carrying out this study was to collect baseline information on opportunities and for interventions in upgrading animal health services and production in Marsabit County. Specific objectives were to obtain good understanding of the livestock owning community, their resource base, their way of life, tactics for survival, community opinions on issues of quality animal health service provision and livestock production, Identify the opportunities, priorities and challenges in animal health and production in the area, gather information concerning existing conventional and indigenous veterinary knowledge and the nature and extent of the animal health problems, identify the existing animal health service providers, other stakeholders and their responsibilities and linkages in addressing the constraints of quality animal health service provision, do a need analysis on infrastructural availability, personnel and weak links in animal health service provision and resources for training and obtain good understanding of high school education and qualifications for University/College training. This is the summary highlighted in line with the set objectives that the study set forth to achieve;

The main natural resources identified in Marsabit County are forests, rangelands, winds, and wildlife. Water is a key resource that is limiting in the area. The community livelihood activities include livestock, farming, fishing and business. The key challenges identified in livestock production include drought, inaccessible veterinary services, limited of livestock extension services, emerging diseases and inadequate labor to take care of animals.

The main issues surrounding education in the County are unavailability of education institutions, education infrastructure, enrolment and retention. Retention from standard one to form four is about 50%. The enrolment has been increasing in time as a result of campaign that has been going on for the last two years by UNICEF. The ratio of boys and girls who complete high school is about 1:2 (girls' vs boys). The reason why enrolment for girls is low is because Girls put less effort in academic work, early marriages and lack of role models for the girls. Overall the challenges for school enrolment in the county were identified to include poor or lack of infrastructure like boarding facilities and classroom, shortage of teachers, pastoralism lifestyle and food shortages.

Observed interestingly is the transition rate from secondary school to University or tertiary learning institutions. The percentage of students qualifying for University requirements in the County are 20% out of total group. Employing more teachers, assessment and supervision in schools, teacher motivation, exposure visits such as field trips, holding of stakeholder and guardians workshops, establishment of adult education and tertiary institutions were suggested as some of the remedies to these challenges.

The study established that the County has some training institutions that operate within with examples of; Kenyatta University with satellite campus, University of Nairobi, Catholic church tertiary colleges among others but of interest was the fact that courses offered in these institutions do not meet the needs and requirements of the livelihoods and resources of the community. They offer courses such as Arts, carpentry and Education. This is a gap and opportunity for intervention to offer tailor made courses which includes; Animal Husbandry, Veterinary medicine, Community Development and field extension. This would upgrade Animal health production and service delivery.

The County has vast opportunities for upgrading animal health and livestock and livelihoods of majority at large and this is out of challenges that the community has gone through over the past years. The opportunities exist in areas of; Devolution, policy formulation, Land and Resources, Credit facilities, cultural development, livestock husbandry, alternative energy such as solar energy, unexploited resources such as coal and value chain involvement.

Identified in the study were various service providers in the Animal health industry and with their roles each playing towards upgrading the livestock industry. Financial institutions, Non Governmental Organization, Training Institutions, Community at a large and County Government when interlinked would together mostly raise the living standard of the community.

There is training needs for capacity building in the County for Animal health and production. The topics highlighted as desired for training and further empowerment are in areas of animal health, with focus on diseases which affect specific species in the area; camel, donkey and other cattle, range management; to manage range resources; water and grazing areas, In-breeding; genetics and knowledge in local breeds, marketing, livestock production and extension services.

Other focus areas could be behavioral change, community development, entrepreneurship, and conflict management/resource use conflict resolution and service devolution.

Lack of information was highlighted as one of the hindrance to information on training and capacity building opportunities. The participants therefore proposed the need to use more strategies to reach to the locals such as marketing in the community training opportunities, Visit to locations and interactions with community opinion leaders, Visit to schools for career talks and Attending price giving ceremonies. Other strategies would include offering support to local based students to attend some training programs, KESHA association and a communing based association of community animal health workers.

To offer training, service providers would need to know the available infrastructural state and needs of the community. Available schools like secondary schools, available during school holidays, upcoming buildings and existing laboratories in the District Vet are possible options for these providers.

On how the trainees will raise fees to enroll for trainings and admission to higher places of learning, the community members managed to identify a number of sources of funds for scholarships and bursaries. The means range from sale of animals, harambees, CDF/Bursaries, scholarships from private institutions and NGOs, scholarships to best performing students, Equity scholarships to loans from financial institutions

In the event of training and further capacity building, the community will benefit in increased knowledge in Animal Husbandry and therefore increased production, diversification in Animal Production therefore security, accessible services leading to lowering of cost and higher knowledge in quality products e.g. drugs hence reduction in animal mortality.

Further the community will witness creation of jobs through self-employment for the graduates, there will also be improvement in other sectors of the economy e.g. Infrastructure, human health, education and attraction of other types of training e.g. Education, Medicine, Law, Business Administration

To ensure that the programs are not only accessible to the community but also sustainable , training should be made affordable through partnerships e.g. Between Training, Finance and Government Institutions and involvement of established institutions in Animal Health e.g. ILRI, KARI. There should also be development of support infrastructure e.g. Abattoirs which will enhance market and positive and continued/sustained Political goodwill and support from County Government to ensure continued policy framework development and direction on Training and employment opportunities. Further, training institutions should be encouraged to have campuses in Marsabit County and organization of mobile outreach and training to reach more remote areas with the help of the multiple stakeholders.

There exists some opportunities for job creation for the graduates in the region. Having attained the necessary training the graduates can benefit from county employment, NGO employment or get self-employment trough opening of private agro vets and private practice.

#### **4.2. RECOMMENDATIONS AND WAY FORWARD**

The recommendations and way forward in this section have been informed by the activities carried out in Marsabit County that include stakeholders' consultative workshop and baseline survey. This also is in line with broad objectives and deliverables that were to be obtained by the end of the exercise. Below would be way forward that the team would suggest.

1. Tailor made curricular and training programme, as well as facilitative structures in Animal health and production, business and development studies be prepared and implemented to suit the needs of the County and community
2. Awareness campaign to be carried out through various modes and means to enable students or increase transition rate and percentage of student population from secondary to University and also community to embrace commercialization of livestock
3. University to identify one of the existing learning institutions in the County to start training based on the mode of study identified from the study
4. Pilot project of recruiting selected students to undertake courses; diploma or degree who are sponsored to be carried out soon. This will enable community to see the benefits of training and capacity building in animal health production upgrading.

### 4.3 ACTION PLANS

ACTION ITEM	DATES	ACTION BY
Development of a Proposal for establishment of a training program in Marsabit for consideration by Mount Kenya University Management	December 2014	HoD, Animal Health and Production (Mount Kenya University Team Leader and Dean, School of Social Sciences (MKU)
Consideration and Approval of Proposed training by Mount Kenya University	January 2014	Mount Kenya University Management
Meeting with stakeholders (e.g., Regal-Ag, County Governments of Marsabit/Isiolo, NGOs, Tullow) to explore opportunities for funding of Scholarships	February 2014	ALL
Career Fare and Trainee Drives in Marsabit and Isiolo	March 2014	Ministry of Education, County Government, Regal-Ag, MKU
Recruitment and Admission of first trainees	March 2014	MKU
First Semester training	May 2014	MKU

## APPENDICES

### APPENDIX1.WORKSHOP PARTICIPANTS DURING FOCUSED GROUP DISCUSSIONS

S/N	NAME	TITLE	CONTACT ADDRESS
1	Adano Huqa	Deputy head teacher, Isako memorial sec	0202585181
2	Salesa Abdunba	PTA chair, Marsabit Boya	0729476755
3	Roba Goyo	Chief Shura	0710971216
4	Francis Kirinyal	AH Technitian	0727257614
5	Joba Konchora	Local Pastrolist	0707629587
6	Guyo Wako	NYC	0723223690
7	Guyo Duba	Commercial Pastrolist	0727267804
8	Wario Bonaya	LPA	0720633065
9	Ali Fujicha	LPA	0725732211
10	Liban Wario	Educatioin Officer	0728215634
11	Wario Abduba	Youth Leader MAikona	0719217627
12	Gorai A. Molu	Teacher, Dr. Godana Memorial	0725560979
13	Alex Sharamo	Digege Officer	0725746560
14	Jillo Dida	Community Member	0708640125
15	Bokayo Barako	Student	0721955658

## **APPENDIX 2. FARMERS INTERVIEWED AND THE AREA THEY COME FROM**

### **PARTICIPANT IN KEY INFORMANT INTERVIEW AND CONTACT ADDRESS**

<b>S/N</b>	<b>NAME</b>	<b>TITLE</b>	<b>CONTACT</b>
<b>1</b>	Patrick Katelo Isako	Executive Director, PACIDA	0723946077
<b>2</b>	Didey Isandap	County Director of Education	0728430840
<b>3</b>	Dr. Mutai	State VET	
<b>4</b>	Mr. James Huka	Manager Equity Bank, Marsabit	

## **APPENDIX3. PROTOCOLS AND INSTRUMENTS FOR A BASELINE SURVEY ON UNIVERSITY INTERVENTIONS IN UPGRADING ANIMAL HEALTH AND PRODUCTION IN ASALS OF MARSABIT**

### **1.0 Participatory Appraisal and Focused Group Discussion Tools and Protocols**

#### **3.1 Site and Workshop Information Profile**

The following table will be completed prior to the start of the workshop session and attached to the documentation sheet for each site

**Table 1. Template for Workshop Profile**

<b>ITEM</b>	<b>RESPONSE</b>	<b>ITEM</b>	<b>RESPONSE</b>
County		Sub-County	
Catchment Area		Areas Represented	
Date of Workshop		Duration of Workshop	
Venue for Workshop		Language of Workshop	
Number of Participants (Female)		Number of Participants (Female)	
Names of			

facilitators			
Names of note-takers			
Name of Observers			
Special Conditions (weather, local activities, etc			

### 3.2. Preparation for the workshop

**Preliminary activities before the workshop will include:** Awareness creation about the Objectives of the baseline study activities to the selected community/site members (this will be done during invitations)

**Composition of the Groups, Mobilization for the workshops and setting dates and agenda for each area:** The team will invite at least 22 participants. Since the study is about the role of Universities and opportunities for upgrading animal health and production services in Marsabit, the team will invite the following participants to the workshop

- High School Student Representatives/Graduates (2)
- High school teachers (2)
- School Management (2)
- College Management (2)
- Community based animal health workers (2)
- Representative from the Ministry of Education (1)
- Representative from the Ministry of Agriculture (1)
- Community opinion leaders (2),
- Local pastoralists (2),
- Non-governmental organizations (1)
- CBOs with interests and concerns in livestock production (1),
- Commercial pastoralists (2),

- County Government (2)

The 22 participants for each site will attempt a fair representation by gender and age ranging from 16-65 years. The project team should invite the maximum number to allow for people dropping out. A facilitator and a note taker will operate each workshop.

At every site, the 22 participants will be divided into two groups after a plenary meeting introducing the facilitators and the workshop objectives. Each group will handle different topics.

### **Roles of research team:**

**Facilitators:** Explains and guides the discussion, cross checks the analysis templates

**Note takers:** Detailed documentation of the discussions; notes observations during the workshop; cross checks the analysis templates, reminds the facilitator about missing issues

**Observer:** a Representatives from Regal-Ag for quality control

### **3.3 Activity 1: Introduction (Expected duration: 30 minutes)**

The study will be introduced to community members by the lead facilitator or the team leader from MKU and Regal-Ag. He will refer to the activities that have been done so far in the area that are closely linked animal health services, production, and opportunities for training and capacity building. The facilitator will then explain basic objectives of the study and workshop, introduce the team, explain their roles (facilitators, note takers, observers), communication rules, and the agenda of the day.

#### **3.5.1 Key components of the Activity**

Clarify the objectives of the baseline study

What does the study seek to achieve? Our main objective of carrying out this study is to get a better understanding of how to enhance animal health services and production through training and capacity building

The proposed baseline survey has the following components:

- A profile of the livestock owning community and their resources
- Knowledge on the nature and extend of livestock production

- Inventory of animal health service providers, their roles, inter-linkages, strengths and weaknesses
- Opportunities, priorities and challenges in animal production delivery
- Infrastructural resources, personnel and strong/weak links in animal health service provision, training and capacity building
- High school profiles and levels of education and qualifications for University/College training

### 3.4 Activity 2: Community Resource Mapping

(Expected duration: 1 hour)

**Objective:** The main objective of this exercise is to develop area profile by mapping the natural resources, infrastructures, social services and land use system within the area.

**Tools:** Area resource map and focus group discussion

**Activities:** Ask group members to map out their area and its key natural resources, infrastructures, social services and land use system.

The checklist below should guide the discussion with community members.

Where are the locations of the most important area landmarks surrounding your community (give example of landmarks – external boundaries)?

Which resources are available in the area, which are considered to have an impact on people's livelihoods (e.g., crop fields, rangelands, grazing reserves, rivers, degraded areas)?

Map the area infrastructure (e. g., settlement patterns, roads, power supply, network access, different types of water points/sources, community buildings, shops, commodity markets, sources of stock feeds) What social services (e. g., health clinics, schools, dwelling places of area authorities, community meeting place, or other important facilities) exist in the area?

What are the main land use and resource management systems in the area (e. g., land ownership, allocation of cropping, communal rangelands, grazing reserves (browse and fodder plant species), seasonal herd movement, areas that herders associate with diseases, mechanisms for resource allocation to different uses)?

Interviewing the diagram (Questions to ask or observations to make during the Mapping process)

1. Which resources are plentiful? Which are scarce or lacking?
2. How do community members resolve conflicts, make decisions about problems associated with access to, and use of natural resources?
3. Where are different livestock kept and where do they graze?
4. Which resources are used; particularly in terms of raising and caring for livestock? By whom? Which resources are unused? Which of the resources indicated are the most problematic in relation to raising livestock?
5. Do women and men have different access rights to resources for livestock and related agricultural production? If yes, what are they and how do they affect women and men's capacity to undertake animal husbandry activities? Other economic activities?
6. At the community and household level, who makes decisions on the use of resources?
7. What are some of the challenges of raising livestock in the area (e.g. seasonal migration to grazing areas, disease, climate, seasonal migration for labor, and other challenges)?
8. Where are the markets for livestock products? The input and outlet markets? What are the distances? How are they accessed? By whom?

**Expected outputs:**

1. Allocation, opportunities and constraints in natural resources, infrastructure and social services
2. Identify significant land use and resource management issues

**Table 2. Template for Analysis of Resources**

<b>Mapping issues</b>	<b>Detailed Information</b>
<b>Natural Resources</b>	
Water	
Crop/grazing fields	
Rangelands	
Forests	
Others (specify)	
<b>Infrastructure</b>	
Roads/Airstrips	

Telecommunication	
Settlements	
Community markets	
Livestock sales	
Dip tanks/cattle crush	
Vet clinic	
Stock feed sources	
Others specify	
<b>Social Services</b>	
Schools	
Colleges	
Health	
Church/Mosques	
Local/county administration	
Traditional authorities	
Extension officers	
NGO offices	
Others (specify)	
<b>Land-use systems</b>	
Communal rangelands	
Grazing reserves	
Water use	
Minerals	
Others (specify)	

### 3.5 Activity 3: Community Livelihood Analysis

(Expected duration: 1 hour)

**Objectives:** To identify important livelihood activities and income sources

**Tools:** Livelihoods matrix, supplemented by focused group discussion.

**Activities:** Ask group members to list and rank main sources of livelihoods and cash income both from within and outside the area. Emphasize the role of natural resource (forests and water

use) related activities compared to the other activities. Discuss if the importance of livelihood activities has changed in the past ten years.

1. What are the main sources of livelihoods and cash income in the area?
2. Rank the sources of livelihoods in order of importance. What is the importance of forests/water use compared to other activities?
3. What livelihood activities are important sources of cash income? Forest resources/water use through irrigation?
4. What activities are new and what other changes did the community observe in the area that are of relative importance of the livelihoods?
5. What differences do you observe for women and men (e.g., access to land and natural resources)

**Expected Outputs**

Matrix showing key sources of livelihoods and cash income, as well as the changes in importance, by gender

**Table 3. Template Analysis for Community Livelihoods**

Current Sources of livelihoods	Contribution to livelihoods (in order of importance)	Contribution to income (Very Important, somehow important, not important)	Trends (Becoming more important 2. Less important 3. New activity)
1.			
2.			

**3.6 Activity 4: Analysis of animal health service providers, their roles, inter-linkages, strengths and weaknesses**

(Expected duration: 1 hour)

**Objectives:** To identify animal health service providers, responsibilities and their linkages

**Tools:** Institutional Analysis Matrix, supplemented by focused group discussion.

**Activities:** Ask the group to list key stakeholders in animal health services and production, their activities, achievements/strengths and challenges. The group will then discuss and determine the strength and weakness of the linkages, and identify the missing actors

Who are the main stakeholders in animal health and production services?

What are their activities and services?

What is the nature of their relationships?

What are their achievements, strengths/weaknesses, and challenges

Who are the missing actors and what is their potential role?

**Table 4. Template Analysis for institutional services/activities, strengths/weaknesses and challenges**

Key Actors	Activities and Services	Strengths/Achievements	Challenges/Weakness	Linkages
Innovators within the community				
Missing Actors				

### **3.7 Activity 5: Problems/Constraints and Opportunities in animal health service delivery and production**

**Objective:** To identify the problems/constraints and opportunities in animal health service delivery and production, establishing their causes/effects and coping strategies

**Tools:** Institutional Analysis Matrix, supplemented by focused group discussion.

**Activities:** Ask the group to list the main problems, constraints in animal health services and production, and rank the problems in terms of severity  
 Establish causes and effects of the problems/constraints  
 Establish the coping strategies  
 Identify the opportunities (local and external) in addressing the problems and challenges

**Table 5 Problem Analysis Chart**

<b>Problem/Constraints</b>	<b>Causes/Effects</b>	<b>Coping Strategies</b>	<b>Opportunities</b>
1.			
2.			
6.			

**3.8 Activity 6. Analysis of Training Needs and Capacity Building in Animal Health Services and Production**

**Objective:** To identify opportunities for training and capacity building in animal health services and production

**Activities:** Ask the participants to discuss and respond to the following questions

Why is the training necessary?

Which topics/areas of training? Strengths and priority areas of the region

Which Mode of recruitment to be used?

Duration of the training?

Time line and critical mass that can be trained?

Location and time of the training?

What are the infrastructural needs for the training?

How the trainees will raise fees?

What are the sources of funds for scholarships and bursaries?

Ways in which the communities around will benefit?

How can the programmes be made Sustainable?

What are the opportunities for the graduates in the region?

**Table 6 Template for Assessment of Training Needs and Capacity Building in Animal health services**

<b>Training/Capacity Building Issues</b>	<b>Detailed information</b>
Opportunities for training	
Priority areas for training	
Structure of the programme	
Infrastructural needs	
Fees (sources and opportunities)	
Means of recruitment and advertisement, and publicity	
Benefits to the community	
Sustainability of the programme	
Opportunities for graduates	

#### **4.0 Key Informant Checklist for Marsabit County**

This checklist targets the county minister for agriculture, the county minister for education, and non-governmental stakeholders who will include representatives from the non-governmental/community based organizations and financial institutions. In each category, one key informant will be purposively sampled for the interview.

**Table 7: Key Informant profile information**

<b>County: Marsabit</b>			
Sub county		Division	

Catchment Area		Area	
Date of interview		Duration of interview	
Key informant interviewed: county ministers of agriculture's and education, non-governmental stakeholders)	Name of the Organization		
	Title of the Informant		
Name of the Interviewer			
Name of the Note Taker			
Name of observer			

#### **4.0 Introduction**

The project should be introduced to the respondents by the interviewer. He or she should refer to the activities that have taken place so far in the area that are closely linked to the animal health and production service delivery and commercialization of pastoralism. What does the project seek to achieve? Our main objective of carrying out this study is to collect baseline information on opportunities and for University interventions in upgrading animal health services and production in Marsabit County. Specific objectives are to obtain good understanding of the livestock owning community, their resource base, their way of life, tactics for survival, community opinions on issues of quality animal health service provision and livestock production, Identify the opportunities, priorities and challenges in animal health and production in the area, gather information concerning existing conventional and indigenous veterinary knowledge and the nature and extent of the animal health problems, identify the existing animal health service providers, other stakeholders and their responsibilities and linkages in addressing the constraints of quality animal health service provision, do a need analysis on infrastructural availability, personnel and weak links in animal health service provision and resources for training and obtain good understanding of high school education and qualifications for University/College training.

#### **4.1 Specific Questions on the County Minister for agriculture and livestock development**

1. What are the community opinions on issues of quality animal health service provision and livestock production?
2. What are the opportunities in pastoralism?
3. What are the challenges affecting pastoral communities
4. Rank the challenges in order of importance
5. Who are the animal health service providers in the county?
6. List information on indigenous veterinary knowledge
7. Who are the various stakeholders involved in the livestock industry
8. What are the responsibilities of the above stakeholders in addressing the constraints of quality animal health service provision
9. What infrastructure is available to support livestock resource industry?
10. What are the weak links in animal health services provision in the county?
11. What is the human resource capacity of the county in terms of technical personnel to provide animal health and production services?

#### **4.2 Specific Questions on the County Minister for Education**

1. What is the percentage of school retention from standard one to form four in the county?
2. Give explanation to the answer above?
3. What is the ratio of boys and girls who complete high school?
4. What are the challenges for school enrollment in the county?
5. What is the percentage of students who qualify for University entry through the Joint Admissions Board and those who meet the minimum qualifications
6. What is the performance in subjects that are required for admission into Animal Health programmes
7. What can be done to improve the performance in these subjects?
8. What is the status and access to tertiary education facilities and resources in the county
9. What areas of training are considered a priority in these institutions?
10. What can be done to increase enrollment into tertiary institutions?
11. What are the county plans for uplifting tertiary education in the county, especially in animal health and production?

### **4.3 Specific Questions for Non-Governmental Stakeholders in Animal Health (NGOS, CBOs, Financial Institutions)**

1. What services do you offer to support animal health/production and training/capacity building in the county?
2. What have been your achievements?
3. What problems and challenges have you faced in offering these services?
4. How have you coped with the challenges?
5. What opportunities does your organization have for supporting animal health/production and training in the county?
6. What linkages/partnerships do you have in supporting the livestock sector in the county?
7. What should the other stakeholders do to support the sector in the county?
8. What plans do you have for supporting the livestock sector?

### **5.0. Transect Surveys**

At each of the selected locales (four) for study transect surveys will be conducted to selected four homesteads for case study of animal health and production and opportunities for training and capacity building. The homesteads and respondents will be randomly selected from a sizeable area of settlement. Open-ended questions will be used to collect information on resource structure, livelihoods, problems and constraints in animal health and production, and opportunities for training and capacity building.

The following questions will be used to guide the interviews:

1. What are the main sources of livelihoods and cash income in the area?
2. Rank the sources of livelihoods in order of importance
3. What livelihood activities are important sources of cash income?
4. What activities are new and what other changes did pastoralist observe in that are of relative importance of the livelihoods?
5. What differences do you observe for women and men? (e.g. ownership of livestock)
6. What have been the key events (e.g. human population growth, drought, flooding, diseases outbreak) in the community over the past twenty years?
7. What are the problems/constraints in animal health and production?

8. What are the cause and effects of these problems and constraints?
9. What are your coping strategies to these problems and constraints?
10. What are the opportunities for addressing these problems and constraints?
11. Who are the main stakeholders in animal health and production services?
12. What are their activities and services?
13. What is the nature of their relationships?
14. What are their achievements, strengths/weaknesses, and challenges
15. Who are the missing actors and what is their potential role?
16. How and where do you market your animals and animal products?
17. List the challenges that you face in marketing your animals and animal products

Observational data relevant to the study will also be collected opportunistically.