THE EFFECT OF MAASAI CULTURAL PRACTICES ON THE WELFARE OF DOMESTIC ANIMALS: A CASE OF KAJIADO CENTRAL DISTRICT, KENYA

BY

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DECLARATION

This research project report is my original work and has not been presented for academic purposes in any other university.

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This research project report has been submitted for Examination with my approval as university supervisor.

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DEDICATION

This project is dedicated to my dear wife Cecilia and my two sons Alvin and Brian for their continued support, love and understanding whenever I work until late hours.

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May the Almighty God bless you all.

ABSTRACT

The purpose of this study was to investigate how Maasai cultural practices have a bearing on animal welfare. The objectives of the study were; to establish the effect of keeping large number of animals on the welfare of animals; to determine the effect of blood extraction on livestock; to establish the effect of traditional castration methods on the welfare of animals; to establish the effect of traditional animal restraining methods on the welfare of animals and to investigate the effect of animal identification methods on the welfare of animals. The descriptive survey research design was employed and data was collected by means of questionnaires administered to a sample of 64 respondents (households) drawn from a population of 625 livestock households using simple sampling. Data was analysed by use of qualitative and quantitative methods. The findings revealed that the residents had a high attachment to their livestock with a respondent owning an average of 28 heads of cattle and a flock of 114 goats/sheep while an average family owned 86 cows and 225 goat/sheep. This posed some difficulties as expressed by 54 (84.4%) of respondents among them foliage and water. There was a strong correlation of 0.932 between largest number of animal ownership and the loss through drought. The cultural practise of extracting blood from live animals was being exercised by 22 (34.4%) of the respondents. Arrow and spear were the tools used to pierce the jugular vein of the cow to get blood to use as food and for circumcision and child birth ceremonies. The practise was reported as painful by 60 (93.8%) of respondents. Traditional castration of animals was being exercised by all 64 (100%) respondents. The practise carried by men used burdizzo, rubber ring and open cut to castrate cow, goats/sheep and donkeys for behaviour control, fattening and quality bleeding control. These method were found to be painful a fact agreed by 58 (90.6%) of respondents. 63 (98.4%) of the respondents employed traditional animal restrains method of nose peg, nose ring and ear pegs. The restraining methods were said to be painful to animals by 49 (76.6%) respondents for nose ring, 40 (62.5%) for nose peg and 38 (59.4%) for ear peg in addition to being injurious to animals. All the 64 (100%) respondents also employed the tradition animal identification methods of branding, ear notching or skin lacerations .Branding was anonymously agreed to be painful to animals, ear notching by 63 (98.4%) and skin laceration by 55 (85.9%) of respondents. The study concluded that all the five cultural practises identified had an effect on animal welfare. There is therefore need to replace these traditional practise with more modern animal friendly practises. Need for making affordable services like veterinary available will go ahead in improving welfare of animals without comprising the needs of animal owners.

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ABBREVIATIONS/ACRONYRMS

AWSC-Animal Welfare Science Centre

DEFRA- Department for Environment, Food and Rural Affairs

EU – European Union

FAO- Food and Agriculture Organization

FAWC- Farm Animal welfare council

IFC-International Finance Corporation

OIE- World Organisation for Animal Health

SCAHAW - Scientific Committee on Animal Health and Welfare

UK- United Kingdom

WHO- World Health Organization

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Culture is the material and immaterial expression of the human intellectual achievement. Since the 19th century, scholars have held diverse notions of the term, with some referring to it as the manifestations of how individuals bettered themselves especially through education. Others adopted it to describe the fulfilment of national aspirations and the universal human capacity.

In the 20th century, the concept was adopted to encapsulate all human phenomena that are not as a result of the species' genetic make-up. In the American anthropology, "culture" has been used to refer to the evolution of human in as much as it embraces imagination and creativity as well as the unique ways in which people inhabiting different parts of the world represented their experiences and acted creatively (Stocking,1996).

In all these definitions, a distinction is made between "material" as opposed to "immaterial" culture. The former refers to physical artefacts created by different peoples at different times in their history while the latter is adopted to embrace the intangibles such as language and customs (Jay 1991).

For the purpose of this study, we adopt the term to signify those aspects of material and immaterial culture, passed on from one generation to the other, which have a bearing on how the community in the study area relates to domestic animals. In more specific terms, the study embraces some manifestations of culture such as beliefs, customs, behaviour patterns, and attitudes as well as many other physical products of the community's endeavour that affect or influence how it relates to, and treats domestic animals.

The study also adopts the term "animal welfare" which has been defined variously by different scholars with some of the definitions emphasizing on various elements of animal welfare which differ between cultures, individuals' background (Vapnek & Chapman, 2010; Carenzi & Verga, 2007) and methodologies used to evaluate welfare (Weber & Zarate, 2005).

Animal welfare is a multi-faceted issue which implies important scientific, ethical, economic and political dimensions (Lund et al., 2006). As such, the scientific study of animal welfare is

a multi-disciplinary field of research and hence it should encompass socially important goals including food safety and security, human and animal health, environmental sustainability, worker safety, rural development, gender equality, and social justice (FAO, 2009).

There are a number of approaches in trying to define animal welfare (Fraser, 2008; Carenzi & Verga, 2007). One of them is the "feelings-based" approach, which maintains that animals are sentient – they have feelings, and so if we treat them well, they are likely to be more productive (vapnek & chapman, 2010). This approach describes animal welfare in terms of their subjective experiences (feelings, emotions), and hence emphasizes on the reduction of negative feelings and emotions (pain, injury, hunger, thirst); and promotion of positive ones (normal behaviour) (FAO, 2009).

The other approach is "Functions-based" approach, which defines animal welfare in terms of normal or satisfactory biological functioning of the animals. Advanced by Gregory (1998), Broom (2000) and Grandin, (2001), the definition encapsulates welfare in terms of the physiological or biochemical state of an animal as it attempts to cope or respond to internal challenges or ante-mortem conditions.

A less developed approach is one that calls for animals to be raised in a manner that suits the nature of that particular species (Vapnek & Chapman, 2010) so that it is able to perform its full repertoire of behaviour (Callaghan, 2002; Edwards, 2004).

All these approaches have nevertheless agreed that welfare has both a physical and mental components. Hence animal welfare has been generally defined as a state of complete mental and physical health, where the animal is in harmony with its environment (Hughes, 1976; Wiepkema & Koolhaas, 1993; Broom, 1986). The five animal freedoms developed by FAWC- UK (FAWC, 1993) have become internationally accepted as the basis of animal welfare (DEFRA, 2003; Webster, 2005; European Union welfare quality, 2009).

The Maasai people are transhuman pastoralists who live in Tanzania and Kenya. Livestock is central to their culture (FitzGerald, 2008), even though their lives and livelihoods have changed in response to colonialism, nationalism, development interventions, Christian evangelization, education and other processes (Hodgson, 2001).

The Maasai community observes customs learned through the process of socialization. The main aspect of consideration from the culture is the value the community places on animals hence the welfare of the animals is important as the livelihoods of community members depend on the well-being of the animals (Masiga & Munyua, 2005). Regardless of the fact, like many other communities, the Maasai have cultural practices that comprise animal welfare.

1.2 Statement of the problem

Animal welfare has become a matter of global importance in the recent past (Masiga & Munyao, 2005). Guidelines issued by the World Organization on Animal Health (or OIE) stress the importance of animal welfare in the trade of livestock and livestock products. Indeed, developing countries risk being restricted from certain markets if they do not comply with the provisions on animal welfare.

Some cultures like bull fighting in Spain, cock fighting in Mexico, bare hand bull killing in South Africa are some of the cruel cultural practices done on animals (Ndou et al, 2011). These cultural practices among other compromise the well being of animals. This study therefore sought to explore whether there are some cultural practices of among Maasai community that affect the welfare of animals.

1.3 Purpose of the study

The purpose of the study is to identify and understand some of the Maasai cultures that affect animal welfare and understand why they are practiced. The study will seek to get an indepth understanding of why the Maasai people in the area of study engage in these culture practises and how these practises affect animal welfare. This understanding will help in identifying the best practices in animal keeping that are culturally acceptable and sensitize to animal welfare.

1.4 Objectives of the Study

1. To establish the effect of keeping large number of livestock on the welfare of animals in Kambi ya Mawe location of Kajiado County.

2. To determine the effect of blood extraction on the welfare of livestock in Kambi ya Mawe location of Kajiado county.

3. To establish the effect of traditional castration methods on the welfare of animals in Kambi ya Mawe location of Kajiado county.

4. To establish the effect of traditional animal restraining methods on the welfare of animals in Kambi ya Mawe location of Kajiado county.

5. To investigate the effect of animal identification methods on the welfare of animals in Kambi ya Mawe location of Kajiado county.

1.5 Research Questions

1. What is the effect of keeping large number of livestock on the welfare of animals in Kambi ya Mawe location of Kajiado county?

2. What is the effect of blood extraction on the welfare of livestock in Kambi ya Mawe location of Kajiado county?

3. What is the effect of traditional castration methods on the welfare of animals in Kambi ya Mawe location of Kajiado county?

4. What is the effect of traditional animal restraining methods on the welfare of animals in Kambi ya Mawe location of Kajiado county?

5. What is the effect of animal identification methods on the welfare of animals in Kambi ya Mawe location of Kajiado county?

1.6 Hypothesis:

The hypothesis for this study are as follow;

There is no significant relationship between Maasai cultural practice of keeping large number of livestock and the welfare of animals.

There is no significant relationship between Maasai cultural practice of blood extraction and the welfare of animals.

There is no significant relationship between Maasai cultural practice of traditional castration methods and the welfare of animals.

There is no significant relationship between Maasai cultural practice of traditional animal restraining methods and the welfare of animals.

There is no significant relationship between Maasai cultural practice of animal identification methods and the welfare of animals.

1.7 Significance of the Study

Globally, issues related to animal welfare are increasingly becoming an integral part of economic production as they are increasingly been embraced by global trade regimes. Indeed, there is a rising agitation –championed by the global animal welfare movement- for humane treatment of animals during the production of animal-based products and services. But in Kenya, such issues are yet to be embraced in animal husbandry as well as in how people relate to animals. The study is therefore important to the extent that it has focused on an issue that has hardly been considered important in the country.

This research is expected to analyse how some of the cultures adopted by the Maasai community are detriment of animal welfare. The research findings will, hopefully help the government, NGOs and animal welfare workers to introduce ways or strategies that would aid in creating awareness to the community on the need to embrace animal welfare.

There is a dearth of studies on the relationship between culture and animal wellbeing in Kenya and therefore the research has filled a yawning knowledge gap particularly on the rationale, as well as effects of some of these cultural practices on domestic animals.

The study ultimately has to prove that catering for animal welfare, through treating them humanely and keeping manageable numbers of domestic animals, significantly contributes to raising their productivity and, by extension, human welfare.

1.8 Delimitation of the Study

The study was based in Kambi Mawe location in Kajiado County for purposes of establishing how some of the cultural practices affect animals. The research isolated the following cultural practices embraced by the animal owners in Kambi Mawe Location; keeping of large herds of livestock, piercing of jugular veins of cattle to draw blood, traditional neutering methods practiced on domestic animals and the methods adopted for containing ‘difficult’ animals.

1.9 Limitations of the Study

There are a number of innate characteristics of the study area that affected the study's methodology. For one, although the population has been rising, the study area is generally sparsely populated without a discernible settlement pattern. This made it difficult to adopt standard sampling techniques while the area's remoteness made it difficult to access households selected in the sample. In addition, getting reliable data on the location, size and names of household heads proved to be difficult. However, the study endeavoured to translate standard sample design techniques to suit reality on the ground without overly compromising on the study's reliability.

In addition, it is uncertain how far modernity, integration of people from other cultures as well as changes in climate, land tenure and land use patterns have influenced the local people's culture. This had a bearing on the study's findings particularly where such changes were widespread or was likely to significantly alter the local people's culture.

1.10 Basic Assumptions of the Study

While carrying out the study, a number of assumptions were made:

- That the culture of the local people was a bearing on how they relate with domestic animals;
- That the researcher was able to access reliable human population records from which to draw a sample;
- That the sampled households adequately represent the whole population and that they gave the researcher adequate cooperation; and,
- That the researcher got adequate resources, including time, to study all the cultural practices and incidental phenomena relevant for the study;

1.11 Definition of key terms

Animal welfare: is the state of complete mental and physical health where the animal is able to live comfortably with its environment. In the study, animal welfare will be assessed on whether it meets the five animal freedoms.

Animal: is a living thing that is not a human being or plant that is kept by a human being. In this study, "animals" will be taken to refer to those that have been domesticated (or domestic animals).

Cultural practice: Cultural practise is traditional and customary practices of a particular ethnic or other cultural group.

Culture: Culture is a set of of belief, customs, away of thinking, behaving, or working of particular society- in this case Maasai community.

Domestic animals: Domestic animals are animals that have been tamed by humans so as to live and breed in a tame condition and depend on humankind for survival.

Sentient: is the responsiveness to, or conscious of sense impressions.

Transhumance: The action or practice of moving livestock from one grazing ground to another in a seasonal cycle, typically to lowlands in winter and highlands in summer.

1.12 Organization of the Study

The study encompasses five chapters:

Chapter 1 consists of the historical background, statement of the problem, purpose and objectives of the study, statement of the research questions, significance of the study, scope and delimitation of the study, limitation of the study and end with the definition of key terms; Chapter 2 has the literature review which is an examination of both global and related issues in the area of study; Chapter 3 consist of research design and methodology. The researcher is describes the research design that was employed, the sample design and the sampling procedures. The chapter also has the description of the research instruments that includes data collection and data analysis procedures; Chapter 4 contains data analysis and interpretation of the findings and also answers to the research questions raised in chapter one; Chapter 5 consists of the summary, conclusion and recommendations of the whole research project. There is also a provision of the references which are sources of the research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter looks into the concept of animal welfare, importance of animal welfare globally, cultures related to animal welfare and an in-depth look into some of the Maasai cultural practices related to animals. Additionally, the chapter briefly looks into availability of veterinary services, level of awareness, infrastructure, modernization and influence of policy and legislation enforcement

2.2 Concept of Animal Welfare

The concept of animal welfare is important for commercial as well as ethical reasons. It has gained recognition by governments, national and international bodies, academic institutions and individuals the world over (Mugoa et al, 2005). Consequently, a number of global and regional initiatives have emerged to provide guidance on acceptable practices to actors ranging from individuals caring for animals on farms to large scale commercial enterprises providing animal-based products. Many corporate groups —from producers to retailers— are also acknowledging social and environmental responsibilities and pursuing programs designed to enhance animal welfare (IFC, 2006).

Animal welfare has been defined in different ways by different scholars. This definition depends on different elements of animal welfare they emphasize that differ between cultures, individuals' background (Vapnek & Chapman, 2010; Carenzi & Verga, 2007) and methodologies used to evaluate welfare (Weber and Zarate, 2005). According to Fraser, (2008) and Carenzi & Verga (2007) animal welfare definition falls broadly into three categories; The first is an emphasis on the physical health and biological functioning of animals where elements such as disease, injury and malnutrition are more or less universally regarded as important animal welfare issues (Vapnek & Chapman, 2010). This definition was advanced by Gregory (1998), Broom (2000) Grandin (2001) and adopts welfare to refer to the physiological or biochemical state of an animal as it attempts to cope or respond to internal challenges or ante-mortem conditions at the time of observation.

The second is concern about the "affective states" of animals, especially negative states such as pain, distress and hunger. These are common concerns in many cultures, but in some cases

they are deemphasized by certain people (Vapnek & Chapman, 2010). This approach emphasizes much more the psychological aspects of welfare, considering feelings or emotions as key elements in determining the quality of life, which includes not only the state of the animal's body, but also its feelings (Carenzi & Verga, 2007). This approach attracted criticism with Duncan and Dawkins (1983), expressing that there may be contradictions in welfare descriptors, such as when an animal is showing normal behaviour but also sub-clinical disease. Considering animal welfare as the expression of how the organism feels, is subjective since there is no scientific method to directly measure experiences. In this respect, it is however necessary to maintain a critical viewpoint about the meaning of biological needs, avoiding anthropomorphic interpretations (Morton et al., 1990).

The third is a belief that the welfare of animals depends on their ability to live in a reasonably "natural" manner, either by being free to perform important elements of their natural behaviour or by having natural elements like daylight and fresh air in their environment. This belief arises especially in industrial countries and is common in critiques of industrialized forms of animal production. It generally has less currency in cultures that have not undergone industrialization of their economies or animal production systems (Vapnek & Chapman, 2010).

Hughes (1976) defined Animal welfare as a state of complete mental and physical health, where the animal is in harmony with its environment. This agrees with Wiepkema and Koolhaas (1993) and Broom, *(*1986) sentiments that animal welfare is the animal's "state as regards its attempts to cope with its environment". Hughes, (1976) had a similar definition that animal welfare is a state of complete mental and physical health, where the animal is in harmony with its environment which also agrees with the World Health Organization's (WHO) 1946 definition of health as "a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity."

Animal welfare means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress (OIE, 2008).

Other scholars like Broom and Johnson (1993), state that animal Welfare is a characteristic of an animal, not something given to it. This contradicts Appleby's (1996) view that animal welfare is the state of well-being brought about by meeting their physical, environmental, nutritional, behavioural and social needs of the animal or groups of animals under the, supervision or influence of people. Fraser (1989) had a different view that "well-being" refers to endogenous states of being within an animal while, "welfare" refers to human interventions designed to promote well-being.

Animal welfare also involves the application of sensible and sensitive animal husbandry practices to livestock on the farm. Good practices of animal welfare are underpinned by the framework provided in the five familiar freedoms that were developed by FAWC – UK (FAWC, 2009) to describe an animal's fundamental needs (Gregory, 1998; Bech et al., 2008; Vessier et al., 2008). The freedoms are:

- Freedom from Hunger and Thirst; i.e. ready access to fresh water, and a diet to maintain full health and vigour;
- Freedom from Discomfort; i.e. provision of an appropriate environment, including shelter and a comfortable resting area;
- Freedom from pain, injury or disease; i.e. prevention or rapid diagnosis and treatment;
- Freedom to Express Normal Behaviour which entails provision of sufficient space, proper facilities and company of the animal's own kind; and,
- Freedom from Fear and Distress which encapsulates assurance from the animal's owner.

Non-fulfilment of these needs may expose the animal to stress with detrimental effects on production. Prolonged exposure to stress disrupts energy mobilization and reactions involved in stress response, thus affecting the normal body functions, for example, immunity, growth, reproduction and expression of normal behaviour (West et al., 2003; Veissier et al., 2008; Muchenje et al., 2009, Strappini et al., 2009).

The increasing importance attached to animal welfare in farm animal welfare have been driven by consumer and public attitudes and developments affecting international trade in livestock products (Blandford et al, 2002). According to surveys done by Herzog et al (2001), there are increasing public concerns about certain production practices which have resulted to demands for change in some existing production systems (Rollin, 2004). This agrees with Moynagh (2000) and EU Scientific Committee on Animal Health and Welfare (SCAHAW) findings that concern for animal welfare and a desire for improvement is a consumer driven issue. In fact, European consumers are aware and very sensitive to animal welfare and are prepared to pay higher prices for welfare-friendly production practices (Ibid). Such animal welfare concerns have become major considerations in many developed countries and have influence on meat quality (Veissier et al., 2008; Muchenje et al., 2009a; Strappini et al., 2009).

Consumer's demands for higher standards of animal protection have incumbently led to policy-makers and legislators to respond accordingly (Horgan, 2005). Consequently, a number of international recommendations, codes, and laws that focuses on animal welfare have been developed with some countries enacting animal welfare legislation outlawing specific animal husbandry practices (IFC, 2006). Among these is European Union Treaty of Amsterdam for the protection of all farm animals adopted in 1998 obliging Member States and the EU Institutions to pay full regard to the welfare of animals when formulating and implementing Community policies (Horgan, 2005; Blandford et al, 2002). There is also the World Organisation for Animal Health (OIE) global animal welfare guidelines that was agreed by the organization's 167 member countries (Horgan, 2005). These OIE guidelines and recommendations are meant to assist member countries in bilateral negotiations (OIE, 2003). The guidelines stress the significance of animal welfare in the trade of livestock and livestock products and African countries risk being restricted from certain markets in the future due to non-compliance with the requirements on animal welfare (Masiga &Munyua 2005).

Also the United Nations' Food and Agriculture Organization (FAO, 2009) has stressed on importance of animal welfare in agriculture (Blandford et al, 2002). Animal welfare helps to improve the basic health and functioning of animals and, hence, productivity (FAO, 2009).

A wide range of standards and programmes have been created to ensure the implementation of good animal welfare practices. According to FAO (2003), they include (a) voluntary welfare codes, often created by industry organizations, (b) corporate programmes, often used by retail or restaurant companies, (c) product differentiation programmes that allow consumers to purchase selectively, (d) legislated standards, and (e) international agreements created by treaties or intergovernmental organizations. This has prompted the development of animal welfare guidelines, certification and auditing programs in food service industries (Brown, 2004) like Kentucky Fried Chicken, McDonald's, Wendy's and Burger King food chains branding themselves as committed to the humane treatment of the animals whose products are used in their restaurants (Blandford et al, 2002).

Animal welfare is a multi-faceted issue which implies important scientific, ethical, economic and political dimensions (Lund et al., 2006). As such, the scientific study of animal welfare is a multi-disciplinary field of research hence should encompass socially important goals including food safety and security, human and animal health, environmental sustainability, worker safety, rural development, gender equality, and social justice (FAO, 2009).

Good animal welfare is the outcome of complex interactions among genetics, nutrition, environment, disease status, management skill among other factors. Therefore, a system-oriented approach need to be used when assessing animal welfare in order to capture and acquire a wide range of information and the complex interactions that occur across the production chain (Sundrum 2006). In essence, assessment of animal welfare should seek to pinpoint causes of sub-optimal welfare, and the opportunities for successful intervention, in the entire system (FAO, 2009). Indeed, FAO recommends that animal welfare assessment be done with the full participation of the people involved, in a process that also attempts to understand the perceptions and traditional practices of participants, and the social and material assets that they can bring to solve animal welfare problems (FAO, 2009).

There are many ways of assessing animal welfare. Some involve multiple variables and criteria (FAO, 2009) that range from behaviour, productivity and health measurements, to the preferences of the animals themselves (IFC, 2006). Other assessments have been based on the animals, resources (provision) and management (handling) angles (FAO, 2009). Furthermore,

others are founded on the functional, affective and behavioural domain of the animal (Fraser and Weary, 2004) and animal environment (Broom 1997: 1998).

Despite the diverse concept of animal welfare assessment, there is a general consensus among the stakeholders in the animal welfare arena, that standards of animal welfare have to be based on sound science, research, and practical experience (IFC, 2006). The scientific assessment of animal welfare is a key element in efforts to implement good animal welfare practices (FAO, 2009) and as such should employ an objective approach.

Some scientific methods have been utilized to practically measure health, productivity, stress, physiology and immunology, normal and abnormal behaviour in animals. However, the interpretations of the results are sometimes difficult, because they show large discrepancies between individual animals and yield conflicting evidence about a given set of conditions. Multi-disciplinary approaches are therefore necessary and researchers continue to develop new methods for integrated welfare assessment in a practical perspective. At the same time, research on improved ways of understanding the subjective feelings of individual animals and on how to define their true behavioural needs is on-going (Sandra Edwards, 2010).

Another scientific welfare assessment method that endeavours to develop objective approaches to evaluating welfare of farm animals was advanced by Fraser & Weary (2004). The study identifies three overlapping aspects of animal welfare namely:

- Biological functioning which involves the health and performance of animals under different production systems;

- Affective states which include pain, fear and distress displayed by animals under different systems; and,

- Natural living which is the degree to which natural behaviour of animals can be accommodated in a production system.

According to FAO (2009), the assessment of animal welfare can be applied at three different levels. This includes animal-based criteria which are done at the level of the animals themselves. On the other hand, resource-based criterion assesses housing, diet and other

resources that are provided for the animals. Lastly, management-based criterion focuses on human care as an important factor in animal welfare (FAO, 2009).

According to Broom (1998), animal welfare assessment can be measured by observing how well an animal is coping with its environment; where an environment is termed appropriate if it allows the animals to satisfy its needs (Broom, 1997). In this study, the five freedoms will be used as the basis of assessing animal welfare. This is a useful measure widely applied in many countries for the assessment of animal welfare (Mugoa et al 2005).

2.3 Cultures related to animal welfare

There are different social, cultural, religious and economic backgrounds that affect animal welfare. These background circumstances need to be recognized and appreciated, both because of their inherent importance and because doing so will be important for achieving good animal welfare outcomes (FAO, 2009).

Indigenous traditional knowledge refers to the complex bodies and systems of knowledge, know-how, practices and representations maintained and developed by indigenous peoples around the world, drawing on a wealth of experience and interaction with the natural environment and transmitted orally from one generation to the next. Traditional knowledge tends to be collectively owned, whether taking the form of stories, songs, beliefs, customary laws and artwork or scientific, agricultural, technical and ecological knowledge and the skills to implement such technologies and knowledge. Not only does traditional knowledge provide indigenous people with tremendous possibilities for their daily life and sustainable and collective development, it also reflects indigenous peoples' holistic worldviews, which are considered as a most important source of the world's cultural and biological diversity (SPFII 2005). Indigenous knowledge is embedded in community practices, institutions, relationships and rituals and is inextricably linked to indigenous peoples' identity, their experiences with the natural environment and hence their territorial and cultural rights. Indigenous peoples therefore place a great deal of importance on passing this knowledge on to future generations—not only for the sake of preserving the knowledge, but also for preserving their own cultures and identities.

However, the treatment of animals is mostly influenced by beliefs and values, which vary from culture to culture, regarding the nature of animals and their moral significance. Cultures also differ in the priority they attach to different aspects of animal welfare such as basic health and nutrition versus freedom from pain and distress. Thus, animal welfare issues cannot be viewed in isolation from culture, values, and economic conditions -all of which affect how animals are perceived and treated (Blandford et al, 2002).

Animal welfare is a complex, often emotional issue, and cultural differences can lead well-motivated people to advocate different courses of action. There are important cultural differences in people's understanding of animal welfare (Fraser 2008a). Failure to recognize these differences, especially those cultural values that are present in culturally diverse countries, could lead to rejection of attempts to improve animal welfare (FAO, 2009). AWSC, (2011) also concurs by stating that, implementation of animal rescue missions, population management strategies and education programs by westerners in culturally diverse regions are, at least sometimes, met with opposition and indifference by locals.

Ideas about animal welfare are shaped by cultural attitudes towards animals (Burghart and Herzog, 1989) and have proven difficult to assess because it is so multifaceted and involves ethical judgments (Mason and Mendl, 1993; Fraser, 1999). Though most people believe that causing deliberate and unnecessary suffering to animals is unethical, the extent of this belief depends on individual opinion, which is often moulded by the economic circumstances and accepted moral norms of the culture in which a person exists (Sandra Edwards, 2010).

Animal welfare is profoundly affected by the culture, human values and economies of human societies. In some cultures, certain animals may be accorded holy status, while other species are subject to extreme indifference and neglect. Economic systems and human values that place efficiency and profit above animal welfare lead to the inhumane practices found in factory farming.

Human animal relations are diverse across cultures. Culture determines which animals are seen suitable for human nutrition. For example, dogs constitute part of the diets in Asia but not in Europe. Culture also determines how much human beings are allowed to interfere with lives of animals (for example Buddhism and Hinduism give some animals holy status), which pets are used as animals (Kohler & Wildner, 1998). Our lifestyles, cultures and environment

not only have an effect on the type of pets we choose, but also on the way they live, their quality of life and how they are viewed and treated by the community we live in (AVA, 2010). A research using focus group interviews in Thailand showed that attitudes and behaviour towards companion animals vary as a function of cultural context and religious precepts (Toukhsati et al., 2010).

On a religious point of view, most religions of the world teach compassion and kindness to animals. But there are also large differences in beliefs regarding the nature of animals and their moral status (Waldau and Patton 2006). The cow is considered sacred in Indian culture, and the slaughter of cows is prohibited in most Indian states (FAO, 2009). At the same time, Islamic and Jewish religions consider pigs as unclean, hence accorded no status (Mary, 1966).

The Amsterdam Treaty of 1997 and Lisbon Treaty of 2004 (enacted on 1st December 2009) recognize animals as "sentient beings", a status distinct from property or agricultural products (Vapnek & Chapman, 2010; Moynagh, 2000) and state that EU and the Member States shall pay full regard to the requirements of animal welfare, while respecting the legislative or administrative provisions and customs of Member States relating in particular to religious rites, cultural traditions and regional heritage (Vapnek & Chapman, 2010). The first country to constitutionally address animal welfare may have been India. Article 48 of the 1950 Constitution requires the state to "Endeavour to organize . . . animal husbandry on modern and scientific lines" and to prohibit the slaughter of cattle and dairy animals for religious reasons. In 1974, Article 51A (g) was added, declaring it the duty of every citizen of India "to have compassion for living creatures"(Vapnek, 2010).

Giving culture leeway in animal welfare has attracted criticism from animal enthusiasts, who claim that some cultural practices compromise animal welfare. For instance, when the Vahera people of Zimbabwe are slaughtering an animal, they usually tightly tie all the legs together just below the abdomen, such that the knot ends up exerting pressure on the abdomen in order to facilitate the rapid release of blood once their throats are slit without stunning. Also the Maasai people bleed live cattle to obtain blood for traditional reasons without any form of anaesthesia (Fratkin, 2001).

In some developing countries of Asia, there are beliefs that stress on the benefits of some quality traits, such as meat tenderness resulting in cattle being baited with dogs, chased through streets by mounting stockman equipped with goads (Gregory, 2007). On the other hand, the South African Zulu slaughtering method, for example, involves stabbing of the animal on the stomach by using a spear and then forcing the animal to move some distance (Mnguni, 2006). Other cultural practices that are detrimental to animal welfare include bull fighting in Spain and Mexico as well as cockfighting (Blandford et al, 2002) and the Zulu's bare-hand bull killing ceremony (Mahlangu, 2009; SAPA, 2009; *The Citizen*, 2009).

Apart from external factors, such as culture, religion, education and upbringing, internal factors, such as an individual's level of compassion, ability to empathize and depth of thinking also affect an individual's code of ethics towards animals, (Resources ethic). Animal welfare is strongly influenced by human behaviour. In capacity building to improve animal welfare, the government, NGOs and animal workers should attempt to understand and engage animal owners, recognize the cultural norms, knowledge and abilities that they have, cooperate with them to identify means of improving animal welfare as a way of better achieving their goals, and facilitate their own innovation and problem-solving (FAO, 2009).

2.4 Some Maasai culture related to Animal Welfare

The Maasai are semi-nomadic pastoralists living in southern Kenya and northern Tanzania - both are former British colonies that gained their independence in the early 1960s. Majority of Maasai are completely nomadic cattle herders, and it is only very recently that any move towards agriculture has become evident. Today, the population of the Maasai is estimated to be 350,000 people.

The Maasai have proudly maintained their culture making them undoubtedly one of the most famous traditional cultures on earth. Cattle are very important to the Maasai, and are the subject of mystical beliefs and reverence. The Maasai value their animals and as a result take good care of them to ensure their survival since they form their livelihood. The Maasai have many cultural practises some relating how they relate to animals. Some of these cultural practises have ensured survival and wellbeing of animals. There are however some of the cultures that are thought to compromise welfare of animals.

The Maasai cultural practises of interest to animal welfare are keeping large number of livestock, practise of blood extraction, traditional castration methods, traditional animal restraining methods and traditional animal identification methods.

2.4.1 Attaching value to large number of livestock on animal welfare.

To the Maasai, cattle form the basis of life ((Hauff, 2003). In addition to their use as food and materials, cattle are used as currency, for rituals and ceremonies and to maintain relationships within families and between different clans (Mark & Anderson 1992; FAO, 2009; Hauff E. 2003). Animals are an important source of comfort, social contact and cultural identification for the community (FAO, 2009). In short, livestock provides an emotional relationship and perform a social function (Russum, 2002) -bride wealth, ceremonial, companionship, recreation, and social status (Stroebel, 2004).

Of great importance, livestock offers prestige. For instance, one commands high respect in the community if he owns many cattle than everyone else in the relevant area. The Maasai regard themselves as poor when they own below 100 heads of cattle or medium when one owns between 100 and 500. Those owning more than 500 heads of cattle are regarded as rich (Bee et al 2002; Liljestrand, 2012).

The traditional nomadic and transhumance pastoral systems (seasonal movement of livestock between mountain and lowland pastures by herders) based upon communal grazing in the ASAL areas, are well adapted to the annual and seasonal variations in rainfall and vegetation. Mobility of livestock keepers and herds is essential to ensure that the pastoralists are able to access water and grazing areas, reduce gastro-intestinal worm infestations, and avoid attacks by tsetse, biting midges, and other pests. The livestock production systems and societal values of the livestock keepers had a significant effect on animal welfare (Masiga & Munyua, 2005). In a nutshell, the whole system has been a highly-developed survival livelihood option that appreciated temporal differences in weather patterns and helped to avoid epidemics that might decimate the herds.

Unfortunately, this is now under severe strain from both human and natural vagaries such as increase in human population, lack of a favourable livestock development policy, encroachment of pastoral lands by other economic activities. On the other hand, frequent

droughts, animal diseases, and unreliable market channels have their own negative impact on the livestock economy, the livelihoods of the Maasai as well as on the welfare of their animals (Bee et al, 2002). There is evidence to conclude that this traditional livestock keeping practices are no longer tenable in this day and age.

Grazing in most communal production systems are uncontrolled and continuous grazing systems are common (James and Hazel, 2007; Dube, 2008). Besides, most community lands are overstocked, since ownership of grazing land is communal and little sense of ownership of the grazing resources exists (Dube, 2008). The cattle, therefore, lose body condition, particularly in winter and spring (Mapiye et al, 2009b). The poor body condition also exacerbates the impact of parasites on the welfare of the animals (Muchenje et al, 2008; Ndou et al, 2008; Ramaswamy, 1998; Chimonyo, 2008). There is need to investigate the welfare status of animals in the deteriorating rangelands so that appropriate stocking densities can be formulated (Ndou et al, 2011).

Due to the high number of livestock and nomadic nature of the Maasai, sheds used for housing cattle rarely have roofs. During the rainy season, the animals are, therefore, exposed to excessive rain, especially at night and become susceptible to diseases, such as foot rot (Moyo & Masika, 2009). Furthermore, during the rainy season, livestock dung in the sheds creates muddy, messy conditions, which makes it uncomfortable for cattle to lie down besides creating conducive conditions for diseases. This calls for awareness on the threats to the welfare of cattle to be raised among the Maasai (Ndou et al, 2011).

2.4.2 Cultural practice of blood extraction from live animals on animal welfare

The Maasai's primary component of their diet is milk, meat and blood (Khazanov 1984:64; Galvin et al, 1994). To obtain the blood, the jugular vein of a cow or bull is pierced and about a litre of blood removed. Typically, the Maasai people bleed live cattle to obtain blood for traditional reasons without any anaesthesia (Fratkin, 2001) and these practice lead to pain, thus raising an obvious animal welfare concern (Alana et al., 2008). They lightly tie the animal's neck so as to make the vein bulge out, and it is then shot with a tiny bow and arrow and the blood runs into a cup for consumption (Mark & Anderson 1992). The blood is also collected in a gourd, and the wound closed with ashes. The blood is either drunk immediately

while fresh or mixed with milk. Even at slaughter, blood is collected and mixed with milk to be drunk later. The Maasai believe the blood makes them very strong.

Blood can be obtained without killing the animal. About a litre of blood can be taken from a cow of either sex about once a month without damaging its health. If females are being milked, the blood extraction might be primarily from males (Sutton &Anderson 1992). The tools used to extract the blood range from needles to arrows via venipuncture. Despite the fact that extra care is taken and the resulting wound is not fatal and is bandaged afterwards (Masiga & Munyua 2005), the cultural practice still remains painful to the animal (Alana et al., 2008). The reasons behind these practices need to be understood for effective intervention (Ndou et al, 2011).

2.4.3 Traditional practices of animal castration on animal welfare.

The infliction of pain on animals is an emotive animal-welfare issue (Stafford & Mellor, 2005a). Causes of pain in cattle include injury and disease, veterinary surgery and routine procedures. Some of the questionable practices and procedures include beak trimming and toe clipping to limit injuries to confined poultry; tail docking of cattle, pigs and sheep; dehorning cattle and sheep; branding cattle; castration methods for cattle, pigs and sheep; and early weaning of beef and dairy calves and pigs (Blandford et al, 2002).

The most common methods of castration are those in which the testicles are either removed (surgery), cords crushed (Burdizzo) or blood supply restricted to the testes (rubber rings or latex bands). While animal handlers in Africa are proficient at performing these techniques, analgesics and anaesthetics are not used, which results in pain and suffering for the animals (Masiga & Munyua 2005). Castrating calves is believed to cause pain. A study by Thuer et al (2007) aimed to compare castrating calves by Burdizzo and by rubber ring, in terms of short- and long-term pain responses. The efficacy of local anaesthesia to reduce post-castration pain was also tested. Changes in plasma cortisol concentrations and in behaviour post-castration were measured. Weary et al (2006) states that optimal measurement of pain differentiates between painful and control (non-painful) states, both with and without anaesthesia. The design of the study by Thuer et al (2007) embraced this approach by assessing physiological and behavioural indicators of pain in three groups of calves (Burdizzo, rubber ring and control), with and without local anaesthetic applied to the scrotum. The plasma cortisol

response to castration was initially greatest in the Burdizzo group, but lasted longer in the ring group. Local anaesthesia significantly reduced signs of pain in both castrated groups. Calves castrated by rubber ring, whether anaesthetized or not, showed behavioural signs of chronic pain. They responded to scrotal palpation for eight weeks and had a high proportion of abnormal postures for three months. The subjective assessments of behaviour in this study used scoring systems with unambiguous, clearly defined categories. This improves reliability (Weary et al, 2006) and enables further research using the same methods of assessment.

2.4.4 Traditional animal restraining methods on animal welfare

In efforts to restrain rogue animals from fighting people, the Maasai usually put a metal ring on the animal's snout such that whenever it bends the ring stretches the snout making it painful which forces the animal to change posture and give up the intention. Good handling methods can improve growth and reproduction by reducing the pain, fear and physiological stress reactions engendered by rough or inappropriate handling (FAO, 2009).

There are various restraining methods that are used to handle farm animals depending on the purpose, animal training, its temperament and its relationship with its handler. Some of the restraining methods are comfortable to animals while others cause discomfort, (Aluja & Lopez, 1991; Mohammed, 1991) or are painful hence have an element of cruelty and, therefore, should not be practiced (Schwartz & Dioli, 1992; Khan, 2003).

Handling refers to how animals are touched, moved, and interacted with during husbandry procedures. (Grandin et al, 2010). This may only require socialization of animals with humans by frequent exposure to kind, gentle care that give advantages of ease handling (Gross & Siegel, 2007). Other animals may require physical restraint which is the use of manual or mechanical means to limit some or all of an animal's movements (NRC, 1996; Grandin et al, 2010). The animals should be restrained for brief periods; usually minutes and the restraint devices should be suitable in size, design, and operation to minimize discomfort and injury (NRC, 1996). They should not to be considered normal methods of housing.

Aggressive animals are often restrained using nose-peg, nose ring, nose rope, nose wire and nose tongs (Joshipura, 2011; Khan, 2003; Aluja & Lopez 1991; Mohammed, 1991). These methods involve the piercing or puncturing of the nasal septum (Starkey, 1989; Dasai, 2011))

which is painful to animals. Nose restraint devices should not be used as a sole means of restraint since they can slip and tear out the nose, causing injury to animal (Grandin et al, 2010). However, this recommendation is often ignored and instead the nose restrain are used alone and as permanent restrain causing discomfort and often damage of nasal septum (Khan, 2003; Aluja & Lopez, 1991; Mohammed, 1991; Dasai, 2011). It can also result in infection of the nasal/sinus passages (Blench, 2000).

Another cruel restrain method involves the use of rein around ear (Starkey, 1981) and piercing holes through both the ears where wooden plugs are put through or suspended by short strings from the ears. With each quick movement of the head, the pendulous plugs keep hitting the animal in the face forcing it to remain calm (Khan, 2003). This method is also very cruel and compromises the welfare of the animal.

Carrying of poultry in an inverted position and lifting them by the wing also amount to cruel handling with the latter being a risk to bone fracture (Grandin et al, 2010). Instead, poultry should be held by both legs when removing them from the cage (Gregory & Wilkins, 1989; Gregory et al, 1993). The manner in which a bird is carried can affect its fearfulness and stress. Broilers carried even briefly in the inverted position by the legs show a greater corticosterone response than do birds carried in an upright position, and the response lasts for about 3 hours (Kannan & Mench, 1996). Therefore, birds should be carried upright whenever possible (Grandin et al, 2010).

The use of halters on animals is a simple remedy that eliminates the cruel practice of nose ropes (Dasai, 2011b). Socialization of animals with humans should be encouraged as a way of eliminating cruelty and improving productivity. Gross and Siegel (1982a,b) and Jones and Hughes (1981) found out that positively socialized chickens had reduced responses to stressors and that resistance to most diseases tested was better than that of birds that had not been socialized. Handling and restraint stresses can significantly alter physiological measurements. Beef cattle not accustomed to handling had significantly higher cortisol levels after restraint compared with dairy cattle that were accustomed to handling (Lay et al, 1992a, b; Grandin et al, 2010). Research clearly shows that animals that are handled in a negative manner and fear humans have lower weight gains, fewer piglets, and give less milk and reduced egg production (Hemsworth, 1981; Barnett et al, 1992; Hemsworth et al, 2000).

Cattle that become agitated during restraint in a squeeze chute or exit from the squeeze chute rapidly have lower weight gains, poorer meat quality, and higher cortisol levels compared with calmer animals (Voisinet et al., 1997a, b; King et al, 2006).

Use of cruel restraining methods generally compromise four of the five animal freedoms - Discomfort, Pain and injury, lack of expression of normal behaviour as well as Fear and distress (Dasai, 2011). Therefore the use nose-peg, nose ring, nose rope, nose wire and nose tongs (Joshipura, 2011; Khan, 2003); use of rein around ear (Starkey, 1981) and piercing holes through ears where wooden plugs are suspended (Khan, 2003), carrying of poultry in an inverted position and lifting them by the wing (Grandin et al, 2010) are all cruel to animals and compromise their well being.

2.4.5 Cultural practice of animal identification on animal welfare

Animal identification (branding) of animals is a practice upheld the world over. In most cases, it is used as a way of identifying different animals. Among the Maasai, big herds of livestock graze together. It is not easy for the owners to distinguish between their animals. (Ndagala, 1992; Hauff, 2003). This led to the development of branding patterns that range from simple lines to complex designs or distinctive marks that are cut into the ears of the animals (Bee et al, 2002; Ndagala, 1992; Hauff, 2003). Members of the same clan brand their animals in similar ways, with an additional brand showing the farmers unique identity (Bee et al, 2002; Liljestrand, 2012). Cattle are also branded and marked with long curving lines and intricate patterns sometimes designed to enhance the animal beauty (Liljestrand, 2012).

The branding process, which is accomplished using a hot iron, coals and knives in the case of ear marking (Masiga & Munyua, 2005; Bee et al, 2002; Peachtree, 2009), is not only painful and stressful for the animal (Morrow-Tesch & Jones, 1997; Masiga & Munyua, 2005), but it also lowers the quality of the hides and skins and, thus, should be actively discouraged (Masiga & Munyua, 2005). The identification procedures like ear clipping, tagging, notching, branding and tattooing may be justified in terms of business necessity or farm management but are not based on animal welfare (Prunier et al, 2006).

Like many other country, the branding of livestock is permitted in Kenya under the Branding of Stock Act of 1964 (Chapter 357). Many animal welfare legislations across the globe range

from prohibiting or limiting the use of such non-therapeutic procedures to permitting them (Vapnek & Chapman, 2010). It is however important that African countries adopt more modern methods of animal identification, which are acceptable in accordance with international standards and are less painful to apply (Masiga & Munyua, 2005).

2.5 Availability of veterinary services

Poverty can severely limit the ability of owners to care for their animals and therefore poverty reduction among animal producers is a significant priority for improving animal welfare (FAO, 2009). Diseases and pests are a challenge in the area. People living in Kajiado County have limited access to Veterinary services – both private and government in part due to poor physical infrastructure which makes communication difficult. Few of the herdsmen travel to the urban areas to purchase medical supplies and administer them to their animals. Even those who do, they lack the right advice on what medicine to administer to their animals.

2.6 Level of awareness

There is an increasing awareness among consumers and producers about the effects that breeding and farming techniques may have on animals, on their health and welfare their environment. More and more, consumers have been claiming their right to make informed choices between products, including products produced to different welfare standards. To enable them to make such a choice, they want to be informed about how farm animals are kept, transported and slaughtered. The producers, on whom such demands are made, want a stable and coherent basis on which to provide such information.

Increasing the level of awareness on good animal welfare practices has multiple benefits for people as well as animals. By improving animal health and productivity, they help maintain the food supply for people who produce, use or consume animal products. They sustain the livelihood of small-scale animal producers and thus help preserve stable rural communities. Good animal welfare practices can also contribute to food safety, human health and psychological well-being. Indeed, in parts of the world where many people suffer from poverty and starvation, an approach to animal welfare that focuses on benefits to people is most likely to succeed (FAO, 2009).

Lacks of education on animal handling has a relationship on the level of animal welfare (Mnguni, 2006; Gregory, 2007; Muchenje et al., 2009a, b). Good stockman ship is crucial and requires people who are competent and well-versed with animals, patient, careful, and caring, and who display empathy with animals and handle them quietly and firmly. Stock people should not be cruel and should at all times endeavour to avoid causing pain, suffering, or distress to animals. Knowledge of the normal behaviour and function of animals is essential to help recognize early signs of ill-health, injury, disease, or distress requiring prompt remedial measures. It is also essential to possess skills of handling the animals and being able to minimizing aggression (IFC, 2006).

There is a need to raise awareness on animal welfare issues in developing countries (Broom, 2000) on poor handling procedures, their control and preventive measures in order to improve the well-being of animals (Ndou et al, 2011).

There is need for research that focuses on addressing issues surrounding animal welfare during production, including ritual slaughter and cultural practices. Creating awareness on the threats to animal welfare without demeaning one's culture is required to promote well-being of their animals (Ndou et al, 2011).

2.7 Infrastructure

Animal welfare is profoundly affected by the culture, human values and economies of human societies. In developing countries, poverty, resource scarcity and education all factor into the way that animals are regarded and treated. Economic systems and human values that place efficiency and profit above animal welfare lead to the inhumane practices that are common in factory farming. Thus, animal welfare issues cannot be viewed in isolation from infrastructure and economic conditions which affect how animals are perceived and treated. Poverty reduction through improvement of infrastructure among animal producers is a significant priority for improving animal welfare (FAO 2009).

2.8 Modernity

Improvements to animal welfare in food production systems can play a significant role in improving the welfare of people by such means as improving access to animal products, improving economic returns through increased livestock productivity, improving the

efficiency of draft animals, and reducing risks to human health through improved food safety. Attention to animal welfare can be of special benefit to countries with less developed economies through technology improvement, increasing access to markets, and fostering international cooperation. To support good animal welfare practices in countries with less developed economies, the FAO should give priority to practices that lead to benefits for both people and animals (FAO, 2009). Introduction of state of the art technology among animal producers is a significant priority for improving animal welfare (FAO, 2009).

Modernity has led to the disappearance of some of the Maasai cultural practices. This has resulted in a new age-set made of educated men – teachers, accountants, businessmen – who speak fluent English and live in urban areas. The contrast is large between the modern influences and traditional living but seems possible to combine (Polong pers. communication, 2011). The Western culture now has an influence on the Maasai manner of living which leads to traditions getting lost as new ones are adopted (Tiwar pers. communication, 2011; Liljestrand, 2012).

2.9 Policy and legislation enforcement

Formal animal welfare assurance programmes (national laws, international agreements, corporate programmes, and others) provide valuable guidance and incentives for improving animal welfare (FAO, 2009). However, inefficient policy implementation and lack of government interventions has continued to be a barrier to achieving good animal welfare practices (Mnguni, 2006; Gregory, 2007; Muchenje et al, 2009a, b). This argument is echoed by Mogoa (2005) who noted that animal welfare abuse in Kenya is prevalent due to, among other things, inadequate legal and policy provisions, inadequate capacity to monitor and minimize cruelty to animals, inadequate supervision of service providers (GoK, 2003) among others.

Despite of there being laws to safeguard animals, enforcement remain a problem and therefore issues of animal welfare are rarely prosecuted. This has given a leeway for animal abuse even in presence of those who are supposed to enforce.

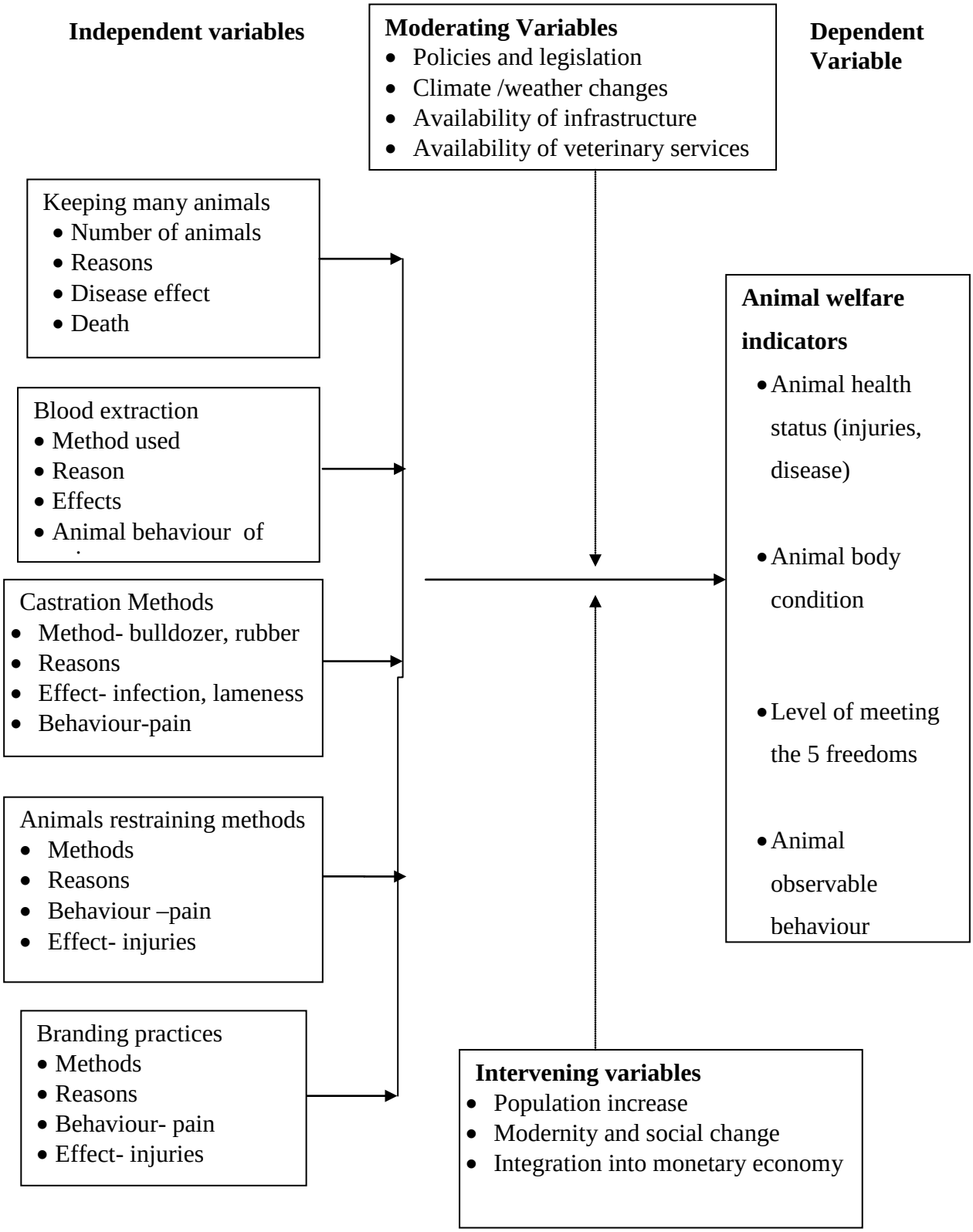

Figure 1: Conceptual framework

Independent variables are factors that might affect the implementation and full awareness of animal welfare in Kambi Mawe Location in Kajiado County. The following independent variables were perceived to affect animal welfare as follows: Attaching values to high livestock numbers, blood extraction practices which inflict fatal injuries to the animals, traditional animal population control methods, traditional systems of restraining animals, branding practices and slaughtering methods.

The study identifies independent variables as having negatively affected the animal welfare in Kambi Mawe, Kajiado County and will attempt to identify the shortcomings in the implementation of animal welfare awareness programmes as well as propose ways of improving the animal welfare in the area and the country at large.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents, explains and justifies the research design and research methodology for the study. It also describes the sample and sampling procedures, instruments, their validity and reliability. Furthermore, it offers details on data collection and analysis procedures as well as data interpretation. Lastly, it explains methods that were used to achieve the study objectives.

3.2 Research design

Singleton (1998) came up with four main designs for research - field research, use of available data, surveys and experiment. The study sought to establish the effects of culture on the welfare of domestic animals in Kenya and used both qualitative and quantitative methods, of data collection attempting to meet the objectives set in the previous chapter.

The study used descriptive research design. The main advantage of this type of design is that it enabled the researcher to assess the situation within the study area at a specific time. This aided observing, describing and documenting aspects of a situation as they naturally occurred.

3.3 Study Area

The study was carried out in Kambi Mawe location in Kajiado County. Created immediately after the country's independence, Kajiado borders Tanzania and is inhabited by a big population of purely pastoralists save for a handful of immigrants from other parts of Kenya. The choice of the District for the study was because the researcher is familiar with the area. This will made it easy to develop immediate rapport with the respondents hence making data collection less cumbersome. In support to this, Singleton, (1993) states that, the ideal setting is one that is related to the researcher's interest, easily accessible and that which allows the development of immediate rapport.

3.4 Target Population

A population or universe for a study is any group of individuals or institutions, which have one or more characteristics in common that are of interest to the researcher (Cooper 1996). The population of study was mainly the nomadic pastoralists who occupy the larger Kajiado

County. The study targeted the herdsmen who keep and graze cattle. There are estimated 625 households in the area of study (2009, KNH census).

3.5 Sampling technique and sampling procedure

Purposive sampling was used to sample different herdsmen who were used for the study. This sampling technique was appropriate because only cattle owners were interviewed and not normal herdsmen. A sample of 64 owners was drawn through simple random sampling where all the herdsmen had equal oppotunity to participate in the study.

3.6 Data Collection instrument

The researcher used questionnaires and interview scheduled as the instrument to collect the data from the respondents. The use of questionnaires was chosen because they have the ability to collect a large amount of information in a reasonably short span of time. It is also easy to formulate and analyse. Best and Khan (1993) observed that questionnaires enable the person administering them to explain the purpose of the study and to give meaning of the items that may not be clear. The questionnaire was divided into different sections where each section had questions relating to a particular objective of the study.

The research was done at household level targeting livestock keepers from whom information on cultural issues having bearing on animal welfare in the area of the study was sought. After identifying the targeted respondents, the researcher conducted a reconnaissance survey which familiarized him with the whole area and arranged for data collection .The researcher administered the instruments personally to the respondents and some with the help of a research assistant. A local elder was employed to help win acceptance of the community and translate to respondents who couldn't communicate in English or Kiswahili languages.

3.7 Validity of the Instruments

Validity refers to the appropriateness, meaningfulness and usefulness of the inferences a researcher makes. According to Mugenda and Mugenda (1999), validity is the degree to which a test measures what it purports to measure. Essentially, validity answers the question as to whether the measurement process, assessment, or project actually measures what it is intended to measure(Handley, 2005). Validity of instruments refers to the accuracy, clarity, soundness, suitability, meaningfulness or technical soundness of the research instrument. Nevell (1993) stressed the importance of scrutinizing data gathering instruments to identify

ambiguity, misleading questions or instructions and suggesting improvements. This enables the researcher to remove irrelevant, biased and ambiguous questions hence promoting validity.

In research, validity falls in two essential parts: internal and external. Internal validity involves whether the results of the study (e.g. mean difference between treatment and control groups) are legitimate because of the way the groups were selected, data was recorded or analysis performed (Handley, 2005). External validity, often called “generalizability”, has to do with whether the results given by the study are transferable to other groups (i.e. populations) of interest (Last, 2001).

To check validity, expertise from the supervisor was sought to ensure that the instruments were constructed correctly, had the right content, and if the instruments accurately represented the variables under study in line with the stated purpose and study objectives. A pilot study was done to help remove irrelevant, biased and ambiguous questions hence improved validity and content of the instruments. Nevell (1993) stressed the importance of scrutinizing data gathering instruments to identify ambiguity, misleading questions or instructions and suggesting improvements.

3.8 Reliability of the instruments

Mugenda and Mugenda (2003) define reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trial. According to Thorndike and Hagen (1961), instrument reliability refers to the level of internal consistency on the stability of the measuring device. An instrument is reliable when it can measure a variable accurately and consistently and obtain the same results under the same conditions over time. For an instrument to be valid, it must be reliable. Roescoe (1969) recommends the split-half method to assess reliability of an instrument concurring with Lokesh (1984) and Gall et al (1996).

The researcher used the split-half technique which requires only one testing session. This was done by breaking the instrument items into two equivalent halves, namely, the odd-numbered and even–numbered items. All the odd-numbered items were placed in one subset, while all

the even-numbered items were placed in another subset. Each of the two sub-sets was treated separately and scored accordingly.

The reliability coefficient was then calculated using the Spearman-Brown prophecy formula as indicated here below:

$$\text{Reliability of the overall test} = \frac{2 \times \text{reliability for ½ tests}}{1 + \text{reliability for ½ tests}}$$

Or

$$Re = \frac{2r}{1+r}$$

Where:

Re = Correlation Coefficient of the entire test

r = Correlation Coefficient of the even numbered statement with the scores of the Odd numbers statements.

The value "r" is an indication of the degree to which the two halves/subsets were internally consistent. According to Mugenda and Mugenda (1999), a reliability coefficient of 0.80 or more show that there is high reliability of data. The reliability coefficient of 0.8 was to be considered as a cut off for acceptance or acceptance of the instruments. Hence instrument was being accepted only if it reaches a score of 0.8. Otherwise the instrument was to be modified and pretested until it achieves the benchmark score of 0.8.

The instrument was pretested and modified then pretested again. The final score of refined instrument was 0.823 and hence it was taken as reliable.

3.9 Operational definition of Variables

A variable is an empirical property that can take two or more values. It is any property that can change, either in quantity or quality.

A dependent variable is a variable whose outcome depends on the manipulation of the independent variables. In this study, the dependent variable is the welfare of domestic

animals. Independent variable, on the other hand, is a variable that is manipulated to cause changes in the dependent variable. The study's independent variables are Maasai cultural practice of attaching value to large number of livestock, Practise of blood extraction, traditional animal population methods, traditional animal restraining methods and animal identification methods.

Moderating variables behaves like the independent variable in that they have a significant contributory or contingent effect on the relationship between the dependent and the independent variable. The study has adopted, as the moderating variables, aspects like Climate /weather changes, accessibility to infrastructure, accessibility of veterinary services and level of education.

Intervening variables are those that might affect the relationship of the dependent and independent variables, but it is difficult to measure or to see the nature of their influence. In this study the intervening variables are policies and legislation enforcement, population increase, modernity, social change and integration in to the monetary economy.

An operational definition describes how the variables are measured and defined in the study. It is a description of a variable, term or object in terms of the specific process or set of validation tests used to determine its presence and quantity. It is generally designed to model a conceptual definition. Table 3.1 is a summary of the operational definitions of variables in the study showing the indicators, measure of indicators, measurement scale, tools and type of analysis. Nominal scales were used to investigate the various variables in the study.

Table 3.1 Operational definition of Variables

Research Objectives	Variables	Indicator	Measurement	Type of Analysis
	Dependent Animal welfare indicators	Animal health status (injuries, disease) Animal body condition Level of meeting the 5 freedoms Animal observable behaviour	Ordinal	Descriptive
	Independent			
To establish the effect of keeping large number of livestock on the welfare of animals	Large herd	Number of animals Reason Disease effect Death	Ordinal	Descriptive
To determine the effect of bleeding on the welfare of livestock	Blood extraction methods	Number of Method used, Reason Effects-Infection Animal behaviour of pain	Ordinal	Descriptive
To establish the effect of traditional castration methods on the welfare of animals	Castration methods	Method-bulldozer, rubber, Reason Effect- infection, lameness Behaviour-pain	Nominal	Descriptive
To establish the effect of traditional animal restraining methods on the welfare of animals	Animals restraining methods	Methods Reason Behaviour –pain Effect- injuries	Nominal	Descriptive
To investigate the effect of animal identification methods on the welfare of animals.	Branding practices	Methods Reason Behaviour- pain Effect- injuries	Nominal	Descriptive
Hypothesis Testing				Use of correlation and regression analysis tests

3.10 Data Analysis

Data analysis is the process of simplifying data in order to make it comprehensive (Frankel and Wallen, 2000). To facilitate the analysis, raw data was systematically organized. This included organizing it to correct errors that were made by the respondents such as inappropriate answers given by the respondents. Coding was then done to translate question responses into specific categories; this is in a bid to reduce the research data into manageable summaries. The coded items was analysed with the aid of the Statistical Package for Social Sciences (SPSS) software. Descriptive statistics such as frequencies and percentages are used to describe the data. The analysed data was then presented in form of frequency tables, where applicable which illustrates the narrative reports that was written once interpretations were done and summaries of the interviews arrived at. The study also adopted inferential statistic correlation and regression to establish the extent to which cultural practices affected the animal welfare in the region.

3.12 Ethical consideration

Before commencing field work, the researcher sought an introduction letter from the University of Nairobi which facilitated the acquisition of a research permit from National Council for Science and Technology. The researcher then sought permission from the area administration (Chief) and help from local elders in administering the questionnaires. The support from local elders helped to win acceptance of the community and translate the questions to respondents who could not communicate in either English or Kiswahili languages. The elders were compensated for their time and service on a mutually agreed basis.

The researcher explained to the respondents the purpose of research and sought consent from the respondent before administering the questionnaire. The respondents were made aware that confidentiality will be observed and that their participation in the survey is voluntary with no monetary inducement. The need of the respondent giving the true/correct information was stressed and encouraged. The questionnaire was administered only to adult respondents and care was taken to ensure that questions asked were relevant to the research objectives, appropriate and sensitive to individual and the local culture.

The researcher ensured that he used qualified research assistants who were taken through the instrument to ensure uniformity in administratering the questionnaire.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter focuses on the response rate, demographic information of the respondents and the presentations of the data from the fieldwork. The analysis was done based on the research objectives.

4.2 Response rate

The response rate is the proportion of the questionnaires administered from the selected target number of the respondents. This study achieved 100% response rate. A total of 64 respondents were targeted and all of them responded to the questionnaires. This was 100% response rate and was therefore deemed adequate for analysis.

4.3 Demographic information of the respondents

The demographic information of the respondents was based on their gender, age, and level of education, occupation and the position they hold in the family. The responses in terms of gender are presented in Table 4.1.

Table 4.1 Distribution of the respondents by gender

Gender	Frequency	Percentage
Male	53	82.8
Female	11	17.2
Total	**64**	**100.0**

Data on the gender of the respondents showed that there were more male than female respondents indicated by 53 (82.8%) and 11 (17.2%) respectfully. The marital statuses of the respondents are tabulated in Table 4.2.

Table 4.2 Distribution of the respondents by marital status

Marital status	Frequency	Percentage
Single	12	18.8
Married	52	80.3
Total	**64**	**100.0**

Data on the marital status of the respondents showed that there were majority of the respondents were married 52 (80.3%) in comparison to those who were single 12(18.8%) respectfully. The age of the respondents were recorded are tabulated in Table 4.3.

Table 4.3 Distribution of respondents by age

Age	Frequency	Percentage
Below 20 years	4	6.3
21-25 years	9	14.1
26-30 years	12	18.8
31 - 35 years	8	12.5
36 - 40 years	16	25.0
41 - 45 years	8	12.5
46 - 50 years	5	7.8
Above 50 years	2	3.1
Total	**64**	**100.0**

Findings on the age of the respondents indicated that 4 (6.3%) were below 20 years, 9 (14.1%) were between 21 and 25 years, 12 (18.8%) of the respondents were between 26 and 30 years, 8 (12.5%) of the respondents were between 31 and 35 years of age, 16 (25.0%) of the respondents were 36 and 40 years, 8 (12.5%) were between 41 and 45 years, 5 (7.8%) were between 46 and 50 years while 2 (3.1%) of the respondents aged over 50 years. The data implies that a large proportion of the respondents were aged 36 – 40 years.

The respondents were requested to give their level of education. Data on the level of education of respondents are presented in Table 4.4.

Table 4.4 Distribution of respondents according to level of education

Level of Education	Frequency	Percentage
No formal schooling	13	20.3
Lower Primary education	2	3.1
Upper Primary education	28	43.8
Secondary education	17	26.6
College education	4	6.3
Total	**64**	**100.0**

Results of the respondents level of education indicated that 13 (20.3%) of the respondents had no formal education, 2 (3.1%) of the respondents had undergone lower primary education, majority 28 (43.8%) of the respondents had attained upper Primary education, 17 (26.6%) of the respondents had attained secondary education, while 4 (6.3%) of the respondents had attained college education.

The respondents were further asked to provide their area of occupation. Their responses are presented in Table 4.5.

Table 4.5 Distribution of respondents according to their occupation

Occupation	Frequency	Percentage
Farmer	31	48.4
Livestock trader	7	10.9
Business	18	28.1
Employed	2	3.1
others	6	9.4
Total	**64**	**100.0**

Results of the respondents occupation indicated that 31 (48.4%) of the respondents were farmers, 7 (10.1%) of the respondents were livestock traders, 18 (28.8%) of the respondents were in business, 2 (3.1%) of the respondents were employed, while 6 (9.4%) of the respondents were engaged in other occupations. These findings indicated that majority of the respondents were farmers.

The respondents were further required to state whether they were born in the area or they migrated to the area. Their responses are presented in table 4.6.

Table 4.6 Distribution of respondents according to their origin in the area

Status of origin	Frequency	Percentage
Born in the area	54	84.4
Migrated to the area	10	15.6
Total	**64**	**100.0**

Data on the respondents status of origin in the area indicated that 54 (84.4%) of the respondents were born in the area while 10 (15.6%) of the migrants to the area. The respondents who were migrants to the area were further requested to provide the duration of the time they have lived in the area. Their responses are presented in table 4.7.

Table 4.7 Length of time the respondents who were migrants have lived in the area

Duration in the respondents	Frequency	Percentage
Below 10 years	0	0
11-20 years	4	40.0
21-30 years	2	20.0
31-40 years	4	40.0
Over 40 years	0	0
Total	**10**	**100.0**

Data on the duration, which the respondents who are migrant to the area had been in the area, indicated that, majority 4 (40.0%) had lived in the area between 11-20 years, 2 (20.0%) had been in the area for 21-30 years while another 4 (40.0%) had been in the area for 31 – 40 years ago. These findings imply that all respondents had lived in the area for over 10 years and in addition to being of Maasai tribe could provide reliable information on cultural practices in the area.

The researcher also wanted to determine the status of the respondent in the family; the data is presented in table 4.8.

Table 4.8 Respondent status in the family

Status in the family	Frequency	Percentage
Head of family	46	71.9
Not head of family	18	28.1
Total	**64**	**100.0**

Data on the respondents' status in the family indicated that majority 46 (71.9%) were the head of their families while 18 (28.1%) of the respondents were not the head of their families. These findings and the formal finding of table 4.7 were strong indications that the respondents could reliably give representative information of the cultural practices in the area and good reflection of their family.

After discussing the demographic information of the respondents, attention was drawn to the analysis of the data in the research instrument. The following section presents the analysis of data based on the research questions.

4.4 Maasai Cultural Practices affecting the Welfare of Domestic Animals

This study sought to establish the Maasai cultural practices affecting domestic animals. The study specifically sought to investigate the extent to which the cultural practices of keeping large number of livestock, practise of bleeding live animals to extract blood, traditional population control (castration) methods, traditional animal restraining methods and traditional animal identification methods have effect on the welfare of domestic animals. This study was carried out in Kambi ya Mawe area of Kajiado among the Maasai pastoral community. The analysis of the responses as pertain the above issues is presented in this section.

4.4.1 Effect of keeping large head of livestock on the welfare of animals.

To establish the extent to which keeping large number of livestock has and impact on the welfare of animals, the respondents were required to respond to statements that sought to establish the same. The respondents were asked to indicate which domestic animals they had and their numbers. These responses are shown in the table 4.9 below.

The response on number of animals respondents kept are summarized on table 4.9

Table 4.9 Type and numbers of livestock owned by respondents

Type of Livestock	Frequency	Percentage	Mean	Median	Std. Deviation	Min Number	Max Number
Cattles	64	100.0	28.19	13.5	41.31	2	200
Goat/sheep	64	100.0	114.16	60.0	147.42	4	800
Donkeys	57	89.1	3.63	4.0	2.81	0	10
Dogs	35	85.9	3.00	2.0	2.61	0	11
Poultry	28	43.8	100.2	0	525.10	0	3000
Cats	27	42.2	0.6875	0	0.99	0	4

Their responses indicated all 64 (100%) of the respondents owned cattle and goats, 57 (89.1%) owned donkeys, 55 (85.9%) owned dogs, 28 (43.8%) owned poultry with cats being owned by only 27 (42.2%). The average livestock number (mean) per respondents was 28 cows, 114 goats/sheep, 3 donkeys, 100 poultry and 1 cat. The least number of animals owned by a respondent was 2 cattle, 4 goats, and zero for donkey, dog, poultry and cat while the largest number owned was 200 cattle, 800 goats and sheep, 10 donkeys, 11 dogs, 3000 poultry and 4 cats.

The method by which the respondents got acquisition of their livestock is summarized in the Table 4.10.

Table 4.10 Mean of herd acquisition by the respondents.

Acquisition	**Buying**		**Gift**		**Buy and gift**	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Yes	54	84.4	32	50	22	34.4
No	10	15.6	32	50	42	65.6
Total	64	100.0	64	100.0	64	100.0

The data indicate that 54 (84.4%) acquired their livestock by buying, 23 (50%) by way of inheritance and gift and 22 (34.4%) had acquired their livestock through both means of buying and being given as gift. All of the respondents had however multiplied their livestock through production.

The researcher further sought to know the amount of herd the respondent aspired to keep, the numbers owned by the respondents family and the largest number of herd that the respondent had owned. The response are summarized in the Table 4.11

Table 4.11 Summary herds numbers

Herd variables	Aspired herd	Family herd	Largest herd kept
No. of respondents	64	64	64
Mean	446.09	86.42	225.19
Median	200.00	25.00	55.00
Mode	500	20	300
Std. Deviation	536.75	150.98	698.24
Minimum	10	4	3
Maximum	2000	1000	4000
Sum	28550	5531	14412

The data indicate that mean value of the aspired herd was 446 herds of cattle with the mode being 500 herds of cattle. The minimum quoted figure was 10 while the highest quoted number of aspired herd of cattle was 2000. The respondents' family with minimum herd of cattle had 4 cows with the average family herd's ownership being 86 and the largest family owning 1000 herds of cattle. The largest number of herd ever kept by a respondent was 4000 with the average largest herd stock being 225 cows.

All respondents had lost their livestock in one way or another. The losses summarized in the Table 4.12 below show the highest number of losses incurred by respondents in a single year within the last 10 years.

Table 4.12 Cases of livestock losses by respondents

Herd loss variables	Loss to drought	Loss to Predators	Loss to diseases	Loss to theft
N=64				
No. of respondents	55	47	51	11
Percentage	85.9	73.4	79.7	17.2
Mean	79.84	8.58	23.28	3.42
Median	20.00	4.00	2.00	.00
Mode	20	0	2	0
Std. Deviation	187.39	11.235	50.718	17.504
Minimum	0	0	0	0
Maximum	1000	50	200	100
Sum	5110	549	1490	219

Note: The table shows cases of losses from different causes and therefore not summary of losses table

The Table shows that 55 (85.9%) of respondents had lost their livestock through drought, 47 (73.4%) to predators, 51 (79.7%) to diseases and 11(17.2%) to theft. Cases of theft were minimal in the area. Averages (means) of 80 animals were lost to drought, 9 to predators, 23 to disease and 3 lost by theft for each household. Some of the predators identified were hyenas, cheetahs, leopards, wild dogs and lions. The greatest numbers of animals lost by a family were 1000 to drought, 50 to predators; 200 to diseases and 100 by being stolen.

The respondents were required to indicate how they have off stocked their animals in last one year. The responses are summarized in the Table 4.13

Table 4.13 Summary of Livestock off stocking by respondents

Off stock variables	Sell livestock	Gift to relatives	Gift to friends	Payment to dowry	Slaughter
No. of respondents	64	54	44	28	52
Percentage	100.0	84.4	68.8	43.8	81.3
Mean	44.11	11.04	7.57	3.87	5.91
Median	12.00	3.00	1.5	.00	3.00
Mode	4	2	0	0	0
Std. Deviation	81.85	22.63	16.89	9.61	13.04
Minimum	1	0	0	0	0
Maximum	300	100	80	50	70

N=64

Note: The table shows different ways the respondents off stocked their livestock and therefore is not a summary table of off stocking a single parameter.

Data from the respondents on how they have off stocked their livestock shows that all 64 (100%) of the respondents had sold some their livestock, 54 (84.4. %) had given livestock relatives, 44 (68.8%) had given some livestock to friends, 28 (43.8%) had given some livestock for dowry payment while 52 (81.3%) of the respondents had slaughtered some of their livestock. The data also shows that majority of the livestock was off stocked through selling with each respondent having sold an average of 44 animals, 11 animals given out to relatives, 8 animals given out to friends, 4 paid out to dowry and 6 slaughtered for family occasions. The largest number of livestock sold by a single family was 300, while 100 animals was the largest number given out to relatives by a single family, 80 given to friends, 50 paid out to dowries and 70 slaughtered within the past one year.

The researcher further sought from the respondents when they sell their livestock. Findings to this statement are presented in Table 4.14.

Table 4.14 Reason why respondents sell their livestock

Reason	Yes response	No response	Total	Percentage
Never sell livestock	0	64	64	0
Sell livestock when many	5	59	64	7.8
Sell livestock due to need	55	9	64	85.9
Sell livestock for school fees	54	10	64	84.4
Sell livestock when price is good	10	54	64	15.6
Sell livestock due to drought	35	29	64	54.7

Note: The table shows different reasons why the different respondents sell their livestock and therefore is not a summary table of reasons for selling as a single parameter.

The data indicates that all respondents sell livestock at some time. The reasons for selling varied from individual to individual. While 55 (85.9%) admitted to have sold livestock to meet arising need which ranged from food, medication and utilities; only 8 (7.8%) respondents had sold their livestock due to them having a large herd. 54 (84.4%) of respondents had sold their livestock to pay for school fees for their children while only 10 (15.6%) of respondent sold their livestock because the market is fetching good price. However, slightly more than half of the respondent 35 (54.7%) sold their livestock to evade repercussion of drought.

The response to the whether there is problem of keeping large number of livestock is tabulated in table 4.15

Table 4.15 Problem of keeping large herd of livestock

Problem	Yes response	Other responses	Total	Yes Percentage
Is large herd problem	54	10	64	84.4
Water problem	44	20	64	68.8
Foliage problem	53	11	64	82.8
Disease control problem	16	48	64	25.0
Herd control problem	28	36	64	43.8
Predator control problem	18	46	64	28.1

Note: The table shows different problems for different respondents for keeping large herd and therefore is not a summary table of problem of large herd as a single parameter.

The data indicates that 54 (84.4%) respondents felt that keeping a large herd of livestock causes some challenges. Among these challenges are water for animals echoed by 54 (84.4%) of respondents, disease control echoed by 53 (82.8%), problem of manning or controlling large herd echoed by 28 (43.8%) and predators control echoed by 18 (28.1%). Foliage or pasture for the livestock was agreed by majority 53(82.8%) as the main problem of keeping large herd. There were however counteracting argument on large herd in that, there is better survival rate in case of misfortunate when one had large herd. Also sentiment of leasing land for pasture when one had large herd featured within the minority who felt foliage is not a problem when one has large herd.

Conversely the respondents were asked whether there are problem of keeping less number of animals. The response are summarized in Table 4.16

Table 4.16 Problem of keeping lesser number of livestock

Problem	Yes response	No response	Total	Yes Percentage
Is keeping smaller herd a problem	32	32	64	50.0
Water problem	2	62	64	3.1
Foliage problem	4	60	64	6.3
Disease control problem	18	46	64	28.8
Herd control problem	9	55	64	14.1
Predator control problem	2	62	64	3.1
Is keeping large herd sustainable	45	19	64	45.3

Note: The table shows different problems for different respondents for keeping lesser and therefore is not a summary table of problem of fewer herds as a single parameter.

The decision of keeping less number of livestock was half split between the respondent. 32 (50%) of the respondents felt that keeping few number of livestock posed problem. 2 (3.1%) respondents sighted water problem, 4 (6.3%) respondents cited problem of foliage, 18 (28.8%) respondent cited disease control arguing with few livestock it's difficult to sell one to treat the others but with many livestock cost of treatment is easy to cater by selling other. Nine (14.1%) respondents cited herd control as a problem since it's not cost effective to employ a herdsman. Only 2 (3.1%) respondents cited predator control as a problem of keeping fewer herds. The response to whether keeping large

number of animals is sustainable attracted divided response with 29 (45.3%) respondents taking it as sustainable.

4.4.2 Effect of cultural practice of extracting blood on the welfare of livestock

The study also sought to establish the effects of blood extraction on the welfare of livestock. The respondents were supposed to respond to statement that sought to establish whether they practiced the cultural practice of live bleeding animals, explain the rationale behind the cultural practice and examine the effect it has on the welfare of animals. The findings of whether they exercise the practice and rationale behind it are tabulated in Table 4.17

Table 4.17 Summary of reasons of extracting blood by respondents practising culture

Respondents extracting blood	Yes response	Percentage (N=64)	Valid percentage (n=22)
Extract blood from live animal	22	34.4	100.0
Extract blood for food	10	15.6	45.5
Extract blood for circumcision celebration	20	31.1	90.9
Extract blood for feed new born mother	16	25.0	72.7

N= total sample size: n=valid sample for the category that extract blood

Note: the table is a summary of responses for different set of questions and therefore is not a summary table for reasons as a single variable

Table 4.17 shows that 22 (34.4%) of the respondents exercised the cultural practice of bleeding live animals to extract blood. The reason for blood extraction was categorized broadly as being food and celebrations. These celebrations were sighted as circumcisions and new born baby celebration. 10 (15.6%) of the respondents extracted the blood as supplements to food. 20 (31.1%) extracted blood to feed a newly circumcised boy and 16 (25.0%) respondents extracted blood to feed a mother who had given birth. The respondents sighted that this blood was believed to help replenish the lost blood through circumcision or giving birth. Most of the respondents extracted the blood for more than one reason.

Asked to explain, when was the right and wrong time to extract the blood the responses were as presented in Table 4.18

Table 4.18 Right and wrong times for extracting blood from live animals

Time	Parameter	Yes response	Percentage (N=64)	Valid percentage
Right time for blood extraction	During wet season	22	34.4	100
	When animal is heath	12	18.8	54.5
Wrong time for blood extraction	After cow give birth	10	15.6	45.5
	During drought	20	31.1	90.9
	When cow is ailing	6	9.4	27.3

N= total sample size: n=valid sample for the category that extract blood

Note: The table is a summary of responses for different set of questions and therefore is not a summary table for a single measure

From the data on table 4.18, the right time to extract blood is during the wet season that got 22 (100%) responses and when the animal is health agreed by 12 (54.5%) responses. Consequently the wrong time for extracting blood was sighted as after the cow had given birth agreed by 10 (45.5%), during dry season with 20 (90.9%) response and when the cow is ailing cited by 6 (27.3%) respondents.

The response on the number of times that blood should be extracted from an individual animal in a year is tabulated on Table 4.19

Table 4.19 Frequency of extracting blood per cow in a year

Number of extraction time	Frequency	Percentage (N=64)	Valid percentage (n=22)
Once	14	21.9	63.6
Twice	4	6.3	18.2
Thrice	4	6.3	18.2
Invalid	42	65.6	0
Total	64	100.0	100.0

Out of 22 respondents who extracted blood from animals, 14 (63.6%) cited the extraction of blood should be done once in year for a particular animal. 4 (18.2%) respondents said it should be twice in a year while another 4 (18.2%) respondents said it could be done thrice in a year.

The method of extracting blood was reported to be arrow and spear. Arrow was used by 314 (63.6%) of respondents while 8 (36.4%) of respondents used spear to extract the blood. Some used both methods to bleed the animals. This is shown in the table 4.20

Table 4.20 Method of extracting blood

Method	Frequency	Percentage	Valid percentage
Arrow	14	21.9	63.6
Spear	8	12.5	36.4
No response	42	65.6	0
Total	**64**	**100.0**	**100.0**

The respondents indicated that there were four ways they used to manage the wound after extracting blood from the animal. 3 (4.7%) respondents used ash to nurse the wound, 10 (15.6%) respondents used cow dung, 8(12.5%) used grass to rub the wound while 1 (1.6%) respondent used herbs to treat the wound. This response is as in the Table 4.21.

Table 4.21 Method managing wound after blood extraction

Method	Frequency	Percentage	Valid percentage
Ash	3	4.7	13.6
Dung	10	15.6	45.5
Grass	8	12.5	36.4
Herbs	1	1.6	4.5
Invalid	42	65.6	0
Total	**64**	**100.0**	**100.0**

The effect research sought to know whether the animals felt pain when blood was being extracted. The response from 60 (93.8%) respondents indicated that the animal felt pain with only 4 (6.3%) being not sure whether the animal felt pain. However none of the respondents felt that the animal did not feel pain. This is displayed on the table 4.22.

Table 4.22 Effect of pain in animals during blood extraction

Effect	Frequency	Percentage
Painful	60	93.8
Don't know	4	6.3
No Pain	0	0
Total	**64**	**100.0**

There were mixed reaction on whether blood extraction caused any health implication to the animals. 24 (37.5%) of respondents indicated that, the extraction of blood had a detrimental effect on animal health while 32 (50%) of the respondents were of the view that blood extraction does not have any effect on animal health. 8 ((12.5%) of the respondents were however uncertain whether there are any health effect on animal as a result of live bleeding. These responses are shown in the table 4.23.

Table 4.23 Effect of blood extraction on animals' health

Effect	Frequency	Percentage
Detrimental	24	37.5
Don't know	8	12.5
No effect	32	50
Total	**64**	**100.0**

The concern of whether there is alternative better method of extracting blood other than the prevailing live bleeding seemed a tricky question. 56 (84.4%) of respondents were not sure whether there is an alternative way with the remaining 8 (15.6%) respondents suggesting bleeding of animal during slaughter as a better alternative of getting blood. This response is tabulated in the Table 4.24.

Table 4.24 Better method of blood extraction

Effect	Frequency	Percentage
Yes	8	15.6
Don't know	56	84.4
No	0	0
Total	**64**	**100.0**

On whether the cultural practice of extracting blood from alive animal should be carried on, majority of the respondents 36 (56.3%) felt that the practice should not be continued

while 28 (43.8%) of the respondent felt the practice should continue. Some of the reasons cited against live bleeding were related to religious and health concerns. The response is shown in the Table 4.24

Table 4.24. Should practise of live blood extraction continue?

Effect	Frequency	Percentage
Yes	28	43.8
No	36	56.3
Total	**64**	**100.0**

4.4.3 Effect of traditional castration methods on the welfare of animals

The study also sought to establish how traditional animal control methods (castrations) are carried out and whether they have any effects on the welfare of the animals. The respondents were therefore supposed to provide information of the method they use, the person who carry the procedure, which animal are target for the exercise and the rationale behind the practise and method. The responses on which animals species were castrated is shown on the Table 4.25

Table 4.25 Response on animal species castrated

Species	Frequency	Percentage
Cattle	63	98.4
Goat/sheep	57	89.1
Dogs	0	0
Donkey	41	64.1
Total	**64**	**100.0**

The Table shows that 63 (98.4) of the respondents had their cow castrated, 57 (89.1%) had their goats and sheep castrated, 41 (64.1%) castrated their donkeys while none of the respondent castrated their dogs. The person who castrated the animals is shown in the Table 4.26.

Table 4.26 Person castrating animals

Species	Castrator counts				
	Respondent	Family member	Villager	AHA	Vet
Cattle	43	46	20	0	0
Goat/sheep	39	42	22	0	0
Dogs	0	0	0	0	0
Donkey	26	30	21	0	0

N=64

Note: The table shows different castrators for different categories of animals and therefore is not a summary frequency table for castrator as a single parameter.

The table indicate that castration was done by the respondents, their family member or a villager without seeking help of animal health assistants (AHA) and veterinarians. 43 (67.2%) of the respondents castrated cow themselves, 39 (60.9%) castrated their goats and sheep and 26 (40.6%) were the castrators of donkeys. Most of the castrations were however done by other family members where 46 (71.9%) of the respondents sought help of their family members to castrate cow, 42 (65.6%) used them to castrate their goats and sheep and 30 (46.9) respondents had them castrate their donkeys. Some respondents used some experienced villagers to help them in castration where 20 (31.3%) respondents, 22(34.4%) respondents and 21 (32.8%) respondents sought help of villagers to castrate their cattle, goat/sheep and donkeys respectively. The methods used for castration by the respondents are tabulated in Table 4.27

Table 4.27 Method of castrating animals

Species	Castration method counts			
	Burdizzo	Rubber ring	Non-anaesthetized open cut	Anaesthetized surgery
Cattle	53	5	15	0
Goat/sheep	37	5	23	0
Dogs	0	0	0	0
Donkey	35	4	0	0

N=64

Note: The table shows different method of castration for different categories of animals and therefore is not a summary frequency table for castration method as a single parameter.

The data indicate that burdizzo was the commonly used method, followed by non-anaesthetized open cut and rubber ring, Anaesthetized surgery, a practise done by veterinary surgeon was not used. 53 (82.8%) respondents used burdizzo to castrate cows, 37 (57.8%) used the method for goats and sheep while 35 (54.7 %) of respondents used it or donkeys. Rubber ring was used by 5 (7.8%) respondents for cattle, same for goats/sheep and by 4 (6.3%) for donkeys castration. Non-anaesthetized open cut was mainly used for goat/sheep and cattle castration where 23 (38.9%) and 15 (23.4%) of respondents them respectively. The reason for castrating animals is shown in the Table 4.28

Table 4.28 Reason for castrating animals

	Castrating reason counts			
Species	Behaviour control	Population control	Quality breeding	fattening
Cattle	3	22	39	39
Goat/sheep	3	17	29	55
Dogs	0	0	0	0
Donkey	37	3	3	3

N=64

Note: The table shows different reasons for castration for different categories of animals and therefore is not a summary frequency table for castration reason as a single parameter.

The data shows that castrating animals to tame behaviour was more prevalent in donkeys which were the case to 37 (57.8%) respondents with only 3 (4.7%) respondents using it to tame cattle and goat/sheep. Castrating animal to control unwanted population was used by 22 (34.4%) respondents for cattle, 17 (26.6%) respondents for goat/sheep and by merely 3 (4.7%) for donkeys. Quality breeding and fattening were however the main reason for castration in cattle and goat/sheep. 39 (60.9%) respondents used castration to ensure quality breeding or fattening their cattle, 29 (45.3%) and 55 (87.3%) respondents castrated goat/sheep for quality bleeding and fattening respectively with only 3 (4.7%) respondents using castration in donkey for these latter purposes.

The researcher wanted to know the respondents views on pain effect of the castration methods practised in the area as well as the convention method used by the vets. The responses are shown in the Table 4.29.

Table 4.29 Responses on pain effect of castration method on animals

	Castration method counts			
Effect	Burdizzo	Rubber ring	Non-anaesthetized open cut	Anaesthetized surgery
Painful	58	20	35	2
Don't know	2	6	2	10
Not painful	4	2	0	4
No response	0	28	27	48
Total	**64**	**64**	**64**	**64**

According to table 4.29, majority of the respondent 58 (90.6%) expressed the view that burdizzo method was painful to animals 2 (3.1%) were not sure while 4 (6.3%) had the opinion that it was not painful. However they said they normally use the method when the animal is very young. The rubber ring castration method was said to be painful to animal by 20 (31.3%) of respondents, 6 (9.4%) were not sure, 2 (3.1%) said it was not painful while 28 (56.3%) had no response to the question. Open cut was said to be painful by 35 (54.7%) of respondents, 2 (3.1%) were did not know while 27 (42.2%) had no answer. Anaesthetised surgery though not practised in the area was thought to be painful by 2 (3.1%) respondents, not painful by 10 (6.3%) respondents, 4 (6.3%) respondents were not sure while 48 (75%) had no response to the question.

The researcher further sought to know the cost implication of the methods of castration. The responses are in the Table 4.30

Table 4.30 Response on cost of animals' castration method

Effect	Castration method counts			
	Burdizzo	Rubber ring	Non-anaesthetized open cut	Anaesthetized surgery
High	9	8	6	26
Don't know	2	8	4	20
Low	53	39	52	0
No response	0	9	2	18
Total	**64**	**64**	**64**	**64**

The table shows that an overwhelming majority of respondents 53 (82.8%) expressed that the cost of burdizzo method was low while 9 (14.1%) said the cost of this method to be high with 2 (3.1%) respondent being unsure on the cost. Some respondents said that a rod is normally used to hit the scrotum of an animal to crash them just as burdizzo does in case they did not a burdizzo. Rubber ring method was said to be low by 39 (52%) of respondents, 8 (12.5%) said the cost was high with a similar number of respondents being unsure while 9 (14.1%) had no response to the question. The cost of non-anaesthetized open cut method was said to be low by 52 (81.3%) of respondents, high by 6 (9.4%) of respondents, while 4 (6.3%) of respondents were not sure and 2 (3.1%) had no response to the question. However, findings on the anaesthetized surgery method were different since none of the respondents found the cost to be low, 26 (40.6%) said the cost of the method was high, 20 (31.3%) were not sure while 18 (28.1%) had no response to the question.

Further the researcher sought to get information on the availability of each castration method from the respondents. The responses are tabulated on Table 4.31

Table 4.31 Responses on availability of castration method

	Castration method counts			
Availability	Burdizzo	Rubber ring	Non-anaesthetized open cut	Anaesthetized surgery
Available	61	40	56	0
Don't know	0	14	0	5
Unavailable	3	7	6	38
No response	0	3	2	21
Total	**64**	**64**	**64**	**64**

The data indicate that an overwhelming majority of respondents 61 (95.3%) were of the view that burdizzo method was available while 3 (4.7%) had contrary view. Rubber ring method was said to be available by 40 (62.5%) of respondents, 7 (10.9%) said it was unavailable, 14 (21.9%) respondents were not sure while 3 (4.7%) had no response. Open cut method was said to be available by 56 (87.5%) of the respondents, unavailable by 6 (9.4%) of response and 2 (3.1%) had no response. Anaesthetized surgery method was said to be unavailable by 38 (59.4%) of respondents, 5 (7.8%) were not sure while 21 (32.8%) had no response on the question. The researcher had also sought to know their thoughts on the appropriateness of the method. The responses are on Table 4.32.

Table 4.32 Responses on appropriateness of Castration method

	Castration method counts			
Appropriateness	Burdizzo	Rubber ring	Non-anaesthetized open cut	Anaesthetized surgery
Appropriate	54	14	23	9
Don't know	0	10	4	5
Inappropriate	8	2	10	4
No response	2	38	27	46
Total	**64**	**64**	**64**	**64**

The data in the table indicate that overwhelming majority 54 (84.4%) were of the view that the burdizzo method was appropriate, with only 8 (12.5%) terming it inappropriate

owning to the pain it causes the animal. On further probing the respondents said that the method was appropriate to them because it was easy to use, low on cost, readily available and caused no complication to animal. The rubber ring method was said to be appropriate by 14 (21.9%) of the respondents, 2 (3.1%) said it inappropriate, 10 (15.6%) were not sure while 38 (59.4%) chose to give no response. Non-anaesthetized open cut were said to be appropriate by 23 (35.9%) respondents, inappropriate by 10 (15.6%), unsure to 4 (6.3%) respondents and had no response to 27 (42.2%). Anaesthetized surgery was appropriate to 9 (14.1%) of respondents, inappropriate to 4 (6.3%), not sure to 5 (7.8%) of respondents and majority 46 (71.9%) had no response.

4.4.4 Effect of traditional animal restraining methods on the welfare of animals

The study also sought to establish the how traditional restraining method practiced of rogue animals exercised by Maasai culture have a bearing on animal welfare. To answer this research questions the same the respondents were asked to enumerate the methods they use to restrain animals, expound the rationale behind the choice of these methods and examine whether it have any effect on the welfare of animals. The results a respondent using restraints are presented in Table 4.33.

Table 4.33 Respondent using restrain rogue animals

Restrain	Frequency	Percentage
Use restrain	63	98.4
Don’t use restrain	1	1.6
Total	**64**	**100.0**

The data in the table show that 63 (98.4%) respondent use restraining methods frequently while 1(1.6%) do not use any restraining methods.

The researcher further sought to know the type of restraining method used by respondents. The responses are shown on Table 4.34

Table 4.34 Method of restraining animals used by respondents

	Restraining method counts					
Restrain	Nose ring	Nose peg	Ear peg	Foot rope	Muzzle rope	Neck rope
Use restrain	49	34	27	7	0	19
Don't use restrain	15	30	37	57	64	45
Total	**64**	**64**	**64**	**64**	**64**	**64**

The data in the table indicate that 49 (90%) respondent uses the nose ring while 15 (76.6%)respondents don't use it. 34 (53.1%)respondents use the nose peg while 30(46.9%) respondents don't. 27 (42.2%)respondents use the ear peg while 37 (57.8%) don't use it. 7 (10.9%) respondents use the foot rope for restraining while 57 (89.1%) do not use it. 19 (29.7%) respondents use the neck rope while 45 respondents do not use it.

The researcher further sought to know whether the restraining method causes pain to animals. The responses are in the Table 4.35

Table 4.35 Responses on pain effect of restrain method on animals

	Restraining method counts					
Effect	Nose ring	Nose peg	Ear peg	Foot rope	Muzzle rope	Neck rope
Painful	49	40	38	0	0	0
Don't Know	0	2	2	10	9	10
Not painful	2	0	0	16	11	24
No response	13	22	24	38	44	30
Total	**64**	**64**	**64**	**64**	**64**	**64**

Responding on pain effect of restraining method, 49(76.6%) respondents said that it is painful while 2(3.1%) respondents said that it is not. 40(62.5%)) respondents said that the nose peg was painful, 2(3%) respondents didn't know while 22(34.4%) did not respond. On whether the ear peg is painful, 38(59.4%) said that it painful, 2(3.1%) respondents didn't know while 2(3.1%) did not respond. On whether the footrope is painful 10(15.6%) respondents said that it is not painful while did not respond. On

whether the neck rope is painful, 24(37.5%) respondents said that it is not painful while 30(46.9%) did not respond.

The researcher further sought to know the cost implication of the restraining methods used. The responses are in the Table 4.36

Table 4.36 Response on cost of animals' restraining method

	Restraining method counts					
Cost	Nose ring	Nose peg	Ear peg	Foot rope	Muzzle rope	Neck rope
High	4	2	0	4	10	4
Don't Know	0	0	0	0	3	0
Low	47	38	38	22	7	28
No response	13	24	26	38	44	32
Total	**64**	**64**	**64**	**64**	**64**	**64**

The data in the table shows that 4(6.3%) respondents said that the cost of the nose ring is high, 47(73.4%) respondents said that it is low while 13(20.3%) did not respond. 2(3.1%) respondents said that the cost of the nose peg is high, 38(59.4%) respondents said that the cost of the nose peg is low while 24(37.5%) did not respond. On the ear peg, 38(59.4%) respondent said that it is low while 26(40.6%) did not respond. On the footrope 4(6.3%) respondents said that it is high, 22(34.4%) respondents said that it is low while 38(59.4%) did not respond. On the muzzle rope, 10(15.6%) respondent said that the cost is high, 7(10.9%) respondents said that it is low while 4 did not respond. On the neck rope, respondent felt that it is high, 28(43.8%) respondents said that it is low while 32(50%) did not respond.

Further the researcher sought to get information on the availability of each of restrain method from the respondents. The responses are tabulated on Table 4.37

Table 4.37 Responses on availability of restraining method

	Restraining method counts					
Availability	Nose ring	Nose peg	Ear peg	Foot rope	Muzzle rope	Neck rope
Available	49	40	38	24	13	26
Don't know	0	0	0	0	3	0
Unavailable	2	0	0	4	8	8
No response	13	24	26	36	40	30
Total	**64**	**64**	**64**	**64**	**64**	**64**

Responding to the availability of the restraining method, 49(76.6%) respondents felt that the nose ring is available, 2(3.1%) respondents felt that the nose ring is not available while 13(20.35%) did not respond. On the nose peg, 40(62.5%) respondents felt that the nose peg is readily available while 20(37.5%) did not respond. On the availability of the ear peg, 38(59.45%) respondents felt that it is available while 26(40.6%) did not respond. On the footrope, 24(37.5%) respondents felt that it is available; respondents felt that it is unavailable while 36(56.3%) did not respond. On the muzzle rope, 13(20.3%) respondents felt that it is available, 3 respondents didn't know, 8 respondents said that it is unavailable while 0 did not respond. On the neck rope, 26(40.6%) respondents said that it is available, 8 respondents felt that it is unavailable while 30(46.9%) did not respond.

The researcher had also sought to know their thoughts on the appropriateness of the restrain methods. The responses are shown on table 4.38.

Table 4.38 Responses on Appropriateness of restraining method

	Restraining method counts					
Appropriateness	Nose ring	Nose peg	Ear peg	Foot rope	Muzzle rope	Neck rope
Appropriate	35	18	12	18	15	22
Don't know	0	0	0	0	5	0
Inappropriate	16	22	26	6	0	10
No response	13	24	26	40	44	32
Total	**64**	**64**	**64**	**64**	**64**	**64**

Responding on the appropriateness of restraining method, 35 (54.7%) respondents said that the nose ring was appropriate, 16 (25.0%) said that the nose ring was inappropriate while 13 (20.3%) did not respond. On the nose peg, 18 (28.1%) respondents said that the nose peg was appropriate, 22 (34.4%) said that the nose peg was inappropriate while 24 (37.5%) did not respond. 12 (18.8%) respondents felt that the ear peg was appropriate, 26 (40.6%) respondents felt that the ear peg was inappropriate while the other 26(40.6%) did not respond. On the footrope, 18(28.1%) respondents felt that the footrope was appropriate, 6(9.4%) respondents felt that the rope was inappropriate while 40(62.5%) did not respond. On the muzzle rope 15(23.4%) thought that it was inappropriate, 5(7.8%) respondents did not know while did not respond. On the neck rope, 22(34.4%) respondents felt that it is appropriate, 10(15.6%) respondents felt that it was inappropriate while 2(50%) did not respond.

The respondents were requested to give their view on whether there are better restrain methods that those they use. Data on responses are presented in Table le 4.39

Table 4.39 Responses on whether there are better alternative restrain methods

Alternative	Frequency	Percentage
Castration	4	6.3
Use of horn rope	9	14.1
Use of crushes	2	3.1
Fencing	8	12.5
Dehorning	2	3.1
There no better method	28	43.8
No response	9	14.1
Total	**64**	**100.0**

On whether there are better alternatives to restraining method, 28 (43.8%) respondent felt that there are no better method, 9(14.1%) preferred use of horn ropes,8(12.5%) felt that fencing was the best alternative,2 (3.1%) felt that use of crushes was an alternative while 9(14.1%) did not respond.

The researcher further sought to get respondents recommendation on whether any method of restrain should be stopped. The responses are in the Table 4.40

Table 4.40 Responses on whether some restraining methods should be stopped

Method to be stopped	Frequency	Percentage
Ear peg	10	15.6
None	37	57.8
No response	17	26.6
Total	**64**	**100.0**

In the table above, 10 (15.6%) respondents felt that ear peg should not be used as a restraining method, 37 (57.8%) respondents felt that none of the restraining method should be stopped while 17 (26.6%) did not respond

4.4.5 Effect of traditional animal identification methods on the welfare of animals

The researcher also sought to establish the cultural animal identification methods, rationale behind use of these practices and an insight on how these practices bear on the welfare of animals. The respondents were therefore asked to enumerate the cultural animal identification methods they practise. The response on whether respondents use animal identification on animals is presented in Table 4.41

Table 4.41 Respondent practising animals' identification

Practising identification	Frequency	Percentage
Practise animal identification	64	100.0
Don't practise animal identification	0	0
Total	**64**	**100.0**

The respondent indicated that they all practise animal identification 64 (100%). The respondents were further required to indicate which method of branding they used. The responses are summarized in the Table 4.42

Table 4.42 Animals' identification method used by respondent

Identification method	Yes response	No response	Total	Percentage
Branding	60	4	64	93.8
Ear notching	57	7	64	89.1
Skin laceration	44	20	64	68.8
Ear tag	0	64	64	0

On the method of identification used, the table shows that 60 (93.8%) respondents use branding, 57 (89.1%) respondents use ear notching, while 44 (68.8%) respondent use skin lacerations. None of the respondent use ear tag. The researcher further sought to establish the pain effect of the identification methods on animals. The response is shown on Table 4.43

Table 4.43 Responses on pain effect of identification method on animals

Pain effect	Branding	Ear notching	Skin laceration	Ear tag
Painful	64	63	55	4
Don't Know	0	0	0	21
Not painful	0	0	0	12
No response	0	1	9	27
Total	**64**	**64**	**64**	**64**

On response to pain effect of identification method on animals 64 respondents said that branding is painful, 63 respondents said that ear notching is painful and one said that ear notching is painful. 55 respondents felt that skin laceration is painful while 9 respondents didn't respond to skin laceration. On ear tag 4 respondents said it was painful, 21 respondents did not know if it was painful, 12 respondents said it was not painful and 27 respondents didn't respond.

The researcher sought to establish the cost of identification method used by respondents. The response are tabulated on Table 4.44

Table 4.44 Response on cost of animals' identification method

Cost	Branding	Ear notching	Skin laceration	Ear tag
High	12	12	10	16
Don't Know	0	0	0	13
Low	52	51	47	10
No response	0	1	7	25
Total	**64**	**64**	**64**	**64**

On the cost of animal' identification method, 12 respondent said that branding is high while 52 respondent said that it is low. On ear notching, 12 respondents said that the cost is high, 51 respondents said that the cost is low while 1 did not respond. On skin laceration 10 respondents felt that the cost is high, 47 respondents felt that it is low while 7 did not respond.

Responding to ear tagging, 16 felt that the cost is high, 13 didn't know, 10 respondents said that it is low while 25 did not respond. The respondents were also asked to explain the level of availability of each method used for animal identification. The response is displayed on the Table 4.45.

Table 4.45 Responses on availability of Identification method

Availability	Branding	Ear notching	Skin laceration	Ear tag
Available	64	63	57	6
Don't know	0	0	0	2
Unavailable	0	0	0	28
No response	0	1	7	28
Total	**64**	**64**	**64**	**64**

The respondent indicated that 64 of the respondents felt that branding is available. On ear notching 63 respondent felt that it is available while 1 respondent did not respond. On skin laceration 57 respondents felt that it is available while 7 gave no response. On ear tag 6 respondents said that it is available, 2 respondents didn't know, 28 respondents said that it is unavailable.

Asked on the appropriateness of the identification methods, the respondents responded as indicated in the table 4.46

Table 4.46 Responses on appropriateness of animals' identification method

Appropriateness	Branding	Ear notching	Skin laceration	Ear tag
Appropriate	58	55	42	6
Don't know	0	0	11	3
Inappropriate	6	8	11	17
No response	0	1	9	38
Total	**64**	**64**	**64**	**64**

On the appropriateness of animals' identification method 58 respondents felt that branding is appropriate while 6 felt that it is inappropriate. 55 respondent felt that ear notching is appropriate, 8 respondent that ear notching is inappropriate while did not respond. On skin laceration 42 felt that it was appropriate, 11 did not know if skin laceration was appropriate, 11 respondents that skin laceration was inappropriate while 9 gave no response. Responding on ear tagging, 6 respondents that it was inappropriate, 3 respondents didn't know, 17 respondents that it was inappropriate while 38 gave no response.

The respondents were asked whether they know of any alternative methods of animals' identification that are better than the one used. The table 4.47 shows the response

Table 4.47 Responses on better alternative animals' identification method

Practising identification	**Frequency**	**Percentage**
Better alternative exist	14	21.9
No better alternative	50	78.1
Total	**64**	**100.0**

On whether there is a better alternative to animal identification method, 14(21.9%) respondent that better methods exists while 50(78.1%) respondent felt that there is no better alternative

The researcher also sought to establish whether any identification method should be discontinued. The Table 4.48 shows the response.

Table 4.48 Responses on whether any identification method should be discontinued

Discontinue identification	Branding	Ear notching
Yes	10	15.6
No	52	81.3
No response	2	3.1
Total	**64**	**64**

The table shows that 10 (15.6%) respondent felt that branding should be discontinued, 52(81.3%) that it should continue while 2 (3.1%) did not respond.

Table 4.49 Responses on which identification method should be discontinued

	Frequency	**Percentage**
Branding	10	15.6
Ear notching	16	25
Skin laceration	16	25
Ear tag	6	9.4
Total	**64**	**64**

Responding on the type of identification that should be discontinued 10(15.6%) felt that branding should be discontinued, 16(25%) felt that ear notching should be discontinued, 16 (25%) felt that skin laceration should be discontinued while 6(9.4%) felt that ear tagging should be discontinued.

4.7 Correlations Analysis

The correlation analysis of the findings is analysed in the Table 4.50

Table 4. 50 Correlation of the study variables

		Large number of livestock	Blood extraction	Traditional castration methods	Traditional animal restraining methods	Animal identification methods
Large number of livestock	Pearson Correlation	1				
	Sig. (2-tailed)	0.02				
	N	64				
Blood extraction	Pearson Correlation	-.768*)	1			
	Sig. (2-tailed)	.001				
	N	64	64			
Traditional castration methods	Pearson Correlation	-.0.835(*)	.590(*)	1		
	Sig. (2-tailed)	.001	.007			
	N	64	64	64		
Traditional animal restraining methods	Pearson Correlation	.-839(*)	.580(*)	430	1	
	Sig. (2-tailed)	.002	.037	.003		
	N	64	64	64	64	
Animal identification methods	Pearson Correlation	.-657(*)	.469(*)	430		1
	Sig. (2-tailed)	.002	.037	.003		
	N	64	64	64	64	64

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The study conducted a Pearson Correlation analysis for all the study variables and noted that there existed a very strong negative correlation between cultural practices adopted by the Maasai community and animal welfare at 95% confidence level.

The strength of association between large number of livestock factors and blood extraction was strong and negative having scored a correlation coefficient of 0.768 and a 95% precision level. The correlation was statistically significant since it had a P-Value of 0.002 which was less than 0.005 hence statistically significant.

There also existed a strong negative correlation between large number of livestock factor and traditional castration methods affecting animal welfare in Kenya with a correlation coefficient of.0.835 and a significance level of 0.01. This correlation was statistically significant since its P- Value of 0.002 was less than 0.005.

The strength of association between traditional animal restraining methods and large number of livestock as a factor as affecting the welfare of domestic animals in Kenya was strong and negative having scored a correlation coefficient of 0.839 with a P-Value of 0.01 and a 95% confidence level. The correlation was statistically significant since it had a P- Value of less than 0.005 and therefore statistically significant.

The strength of association between animal identification methods and large number of livestock factor was strong and negative having scored a correlation coefficient of 0.657. This correlation had a precision of less than 95% and a P- Value of less than 0.005 and therefore statistically significant**.** This implied that there existed a negative correlation between the independent variables large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods and the dependent variable animal welfare.

4.8 Regression analysis

The regression analysis was done through the SPSS and the findings are shown on the Table 4.51.

Table 4.1: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790(a)	.625	.602	.36450

A Predictors: (Constant), large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods.

B Dependent Variable: Animal welfare

The R2 is called the coefficient of determination and indicate how the animal welfare varies with variation in traditional cultural practices. From the table above, the value of the R^2 is 0.625. This implies that, there was a variation of 62.5% of animal welfare, varied with variation in traditional cultural practices of Keeping of large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods a confidence level of 95%. The results were statistically significant as P Value > 0.05 at 0.01. The unexplained variation could be attributed to other cultural factors not included in the model as well as random factors.

Table 4.2: Testing the significance of the model

Model		Sum of Squares	df	Mean Square	F	Sig. Change
1	Regression	37.420	23	8.124	610.412	0.01(a)
	Residual	5.987	41	.039		
	Total	6.267	64			

A Predictors: (Constant), large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods.

B Dependent Variable: Animal welfare

The differences between regression and residual values indicated that the model relationship was significant. Implying that strength of variation of the predictor values cultural practices and dependent animal welfare variables at 0.01 significant levels.

Table 4.53 Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig. change
		B	Std. Error	Beta		
1	(Constant)	5.000	348		1.226	0.01
	keeping large number of livestock	-0.640	0.120	0. 504	1.459	0.03
	Blood extraction	-0.602	0.193	0.515	2.0152	0.001
	Traditional castration methods	-0.779	0.191	0.6570	3.0121	0.02
	Traditional animal restraining methods	-0.513	0.234	.546	1.1247	0.013
	Animal identification methods	-0.687	0.219	0.612	2.132	0.04

A Predictors: (Constant), Keeping large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods.

B Dependent Variable: Animal welfare

$Y = 5.000 - 0.640X_1 - 0.602X_2 - 0.779X_3 - 0.513X_4 - 0.687X_4 + e$

Where X_1= Keeping large number of livestock, X2= Blood extraction, $X_{3=}$C traditional castration methods and $X_{4=}$ traditional animal restraining methods and animal identification methods.

From the above regression model, it was found that animal welfare would be at 5.000 when cultural practices: Keeping large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods are held constant at zero. A unit increase in keeping of large number of animals would lead to statistical significant decrease in in animal welfare by factor of r=0.640 **,** with P< 0.05 at 0.01.This implied that keeping of large numbers of livestock impact has a significant negative impact on animal welfare in Maasai community.

From the regression model, a unit increase in blood extraction would lead to statististical significant decrease in animal welfare by factor of r=0.602 with a with P< 0.05 at 0.03. The regression results also indicated that a unit increase in traditional castration methods would lead to statistically significant decrease in animal welfare by factor of r=0.779 with P Value < 0.05 at 0.001.This implied that increase in practice of tradition castration of animals by the a Maasai would negatively affective animal welfare.

The study further found that a unit increase in traditional animal restraining methods would lead to statistically significant decrease in animal welfare by a factor r= 0.513, with P<0.05 at 0.013.

The study found that a unit increase in traditional animal identification methods such as cutting of ears would lead to statistically significant decrease in animal welfare by a factor r= 0.687,with P<0.05 at 0.004. This indicated that the increase in the use of tradition animal identification methods would negatively affect animal welfare. The finding were similar to Masiga & Munyua, (2005) who found that traditional animal identification methods were not only painful and stressful for the animal and lowers the quality of the hides and skins and, thus, should be actively discouraged .

The study therefore established that there existed negative significant relationship between cultural practices adopted by the Maasai community and animal welfare. The finding concurred Masiga & Munyua, 2005) who asserted that regardless of the fact, like

many other communities, the Maasai have cultural practices that comprise animal welfare.

From the correlation and regression analysis it's clear that the independent valuables (cultural practises) have significant negative relationship with dependent valuable (animal welfare) hence the null hypothesis is rejected.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of discussions, conclusions, recommendations and suggestions for further research.

5.2 Summary of Findings

The purpose of this study was to establish Maasai cultural practises that affect animal welfare. Five research objectives were formulated to guide the study. Research objective one sought to investigate the effect of keeping large number of livestock on the welfare of animals. Research objective two aimed at exploring the effect of blood extraction on the welfare of livestock. Research objective three aimed at examining the effect of traditional castration methods on the welfare of animals. Research objective four sought to assess the effect of traditional animal restraining methods on the welfare of animals. Research objective five aimed at establishing the effect of animal identification methods on the welfare of animals.

The research design adopted in this research was descriptive survey. The target population of this study were the livestock owners residing in Kambi ya Mawe location of Kajiado Central district, Kajiado County. The target population comprised of male and female, young or elderly adults who reside in the area and uphold Maasai culture. The household survey drew sample comprised of 64 respondents (household) from an estimated 625 household population using purposive technique. The technique was informed by the nature of study and the terrain of the area of study. Data was analysed by use of qualitative and quantitative data.

5.3 Discussion of the Findings

Findings on the Maasai culture of attaching value to large number of livestock revealed that the residents have a high attachment to their livestock with each respondent owning an average of 28 herds of cattle and a flock of 114 goats and sheep. The family average was 86 cattle and 225 goat and sheep. The respondent indicated they aspired to own an average of 446 herds of cattle. These findings concur with Bee et al (2002) and Liljestrand (2012) who indicated that Maasai regard themselves as poor when they own

below 100 heads of cattle or medium when one owns between 100 and 500 and regarded as rich if they own more than 500 heads of cattle.

Findings also revealed that livestock form the community way of life by providing livelihood and social interaction. Data revealed that all 64 (100%) respondents sold livestock to cater for their various needs, 54 (84.4.%) had given livestock to relatives, 44 (68.8%) had given livestock to friends, 28 (43.8%) to dowry payment and 52 (81.3%) of the respondents had slaughtered some of their livestock to their family occasions and ceremonies. These findings corresponds with Mark & Anderson (1992); FAO (2009) and Hauff (2003) sentiment that livestock provide food and materials as well being used as currency, for rituals and ceremonies and to maintain relationships within families and between different clans. This also agrees with Russum (2002) assertion that livestock provides an emotional relationship and perform a social function as well as Stroebel (2004) sentiment that livestock is used for as bride wealth, ceremonial, companionship, recreation, and social status.

Concerning the effect of keeping large number of livestock to the welfare of animal, the findings established that keeping large herd of livestock posed some difficulties as expressed by 54 (84.4%) of respondents.. Among these challenges are water for animals echoed by 54 (84.4%) of respondents and foliage echoed by 53 (82.8%) respondents. The data showed a strong correlation of 0.932 between the largest number of animal owned and the loss through drought. This is a clear indication that keeping large number of livestock tends to comprise their welfare based on five freedoms since it become difficult to meet these provisions like water, foliage, housing and comfort particularly when there are adverse climate and land constrains. This agree with Bee et al (2002) conclusion that severe strain from both human and natural vagaries such as increase in human population, lack of a favourable livestock development policy, encroachment of pastoral lands by other economic activities negatively impact on the livelihoods of the Maasai as well as on the welfare of their animals.

Finding on the cultural practise of extracting blood from a live animal revealed that 22 (34.4%) of the respondents exercised the cultural practice of blood extraction. The extraction methods used by those exercising the practise were arrow used by 14 (63.6%)

of respondents and spear used by 8 (36.4%) of the respondents by piercing the jugular vein of the cow. This is in line with Mark & Anderson (1992) and Sutton &Anderson (1992) description of how the bleeding is done. Among the respondents who upheld this practise; the blood was extracted for food by 10 (45.5%), during circumcisions celebrations to feed the initiated by 20 (90.9%) and during new baby celebration to feed a mother who had given birth by 16 (25.0%) of respondents. These uses of blood extracted have been cited by Galvin et al (1994) and Fratkin (2001). However according to Fratkin (2001) and Alana et al. (2008), the methods used for blood extraction are painful thus raising an obvious animal welfare concern since they are done without any anaesthesia. This agrees with the findings where 60 (93.8%) of respondents revealed that the practise causes pain to the animal. Hence this cultural practise affects the welfare of animals.

Findings on the effects of traditional castration methods on the welfare of animals revealed all 64 (100%) respondents carried out castration to their cattle, goat/sheep and donkeys. The methods used by all were the traditional one with none using the convention anaesthetized surgery practised by veterinary surgeon. Burdizzo was the widely favoured method being used by 53 (82.8%) of the respondents, followed by un-anaesthetized open cut used by 23 (38.9%) of the respondents and rubber ring used by 5 (7.8%) of the respondents. The practises were performed by men who are either animal's owner, family member or a villager. The finding further revealed that these method are known to be painful by the respondents especially burdizzo which 58 (90.6%) of respondents were in agreement. 20 (31.3%) of respondent considered rubber ring to be painful while 35 (54.7%) considered non-anaesthetized open cut as painful. These findings are in line with Masiga & Munyua (2005) findings that burdizzo rubber ring and open cut methods are common method used in Africa and performed by proficient handler (non-vets) without use of analgesics and anaesthetics thus causing pain and suffering to animals. These sentiments of pain have been echoed by many scholars such as Thuer et al (2007) who compared the pain intensity of burdizzo and rubber ring and concluded that pain intensity for burdizzo is high but longer for rubber ring lasting even over eight weeks. Blandford et al (2002) also raised concerns on these castration methods due to the pain they cause to animals hence they are animal welfare concerns. Infliction of such pain on animals has been termed by Stafford and Mellor

(2005a) as an emotive animal-welfare issue. Thus the castration methods practised by respondents greatly affect animal welfare.

Findings on traditional animal restraining methods revealed that 63 (98.4%) of the respondents used restrains method such as nose peg, nose ring and ear pegs. These methods were said to be meant for containing aggression or rogue animal then after be removed. However most of the residents used the method over long time. The methods were said to cause pain to animals. 49 (76.6%) respondents said nose ring was painful, 40 (62.5%) respondents said that the nose peg was painful while 38 (59.4%) of respondents said that ear peg was painful. These findings agrees with Joshipura (2011), Khan (2003), Aluja and Lopez (1991) and Mohammed (1991) that aggressive animals are often restrained using nose peg, nose ring, nose rope, nose wire and nose tongs. According to Starkey (1989) and Dasai (2011), these methods involve the piercing or puncturing of the nasal septum which is painful to animals. The above scholars have further added that such restraining devices should not be used as a sole means of restraint since they can slip and tear out the nose or ear injury to animal. All the scholars have reiterated that these restrain cause pain and discomfort to animals. Hence restraining methods that were commonly used by the respondent such as nose ring, nose peg and ear peg causes pain and discomfort to the animal hence affecting their welfare This agrees with Dasai (2011) who indicated that these restraining methods generally compromise four of the five animal freedoms -Discomfort, Pain and injury, lack of expression of normal behaviour as well as Fear and distress.

Findings on the effect of animal identification methods on the welfare of animals revealed that all 64 (100%) respondents used the tradition identification methods to mark their animals. 60 (93.8%) respondents use branding, 57 (89.1%) respondents used ear notching, while 44 (68.8%) respondents used skin lacerations. Same pattern of ear notching was used for each clan while branding and skin laceration was individual marking for his livestock. These findings agrees with Bee et al (2002), Ndagala (1992) and Hauff (2003) that branding patterns that range from simple lines to complex designs or distinctive marks that are cut into the ears of the animals and that members of the same clan brand their animals in similar ways. Liljestrand (2012) and Bee et al

(2002) have further reinforced that an additional brand showing the farmers unique identity.

All 64 (100%) respondents admitted that branding is painful to animals, 63 (98.4%) admitted that ear notching was painful while 55 (85.9%) said laceration was painful. These finding are in line with Masiga and Munyua (2005), Bee et al (2002) and Peachtree (2009) who described the process of branding, skin laceration ear marking terming them painful to animals. Also Morrow-Tesch and Jones (1997) concur terming the methods stressful in addition to being painful to animals. Thus the cultural identifications practised by the respondents were painful and hence affected the welfare of animals.

The study established that animal welfare would be at 5.000 when cultural practices: Keeping large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods are held constant at zero. A unit increase in keeping of large number of animals would lead to statistical significant decrease in in animal welfare by factor of r=0.640 **,** with P< 0.05 at 0.01 clearly keeping of large numbers of livestock impact has a significant negative impact on animal welfare in Maasai community.

The study revealed that a unit increase in Blood extraction would lead to statistical significant decrease in animal welfare by factor of r=0.602 with a with P< 0.05 at 0.03. The regression results also indicated that a unit increase in Traditional castration methods would lead to statistically significant decrease in animal welfare by factor of r=0.779 with P Value < 0.05 at 0.001.This implied that increase in practice of tradition castration of animals by the a Maasai would negatively affective animal welfare.

The study further established that a unit increase in traditional animal restraining methods would lead to statistically significant decrease in animal welfare by a factor r= 0.513, with P<0.05 at 0.013.

The study found that a unit increase in traditional animal identification methods such as cutting of ears would lead to statistically significant decrease in animal welfare by a factor r= 0.687,with P<0.05 at 0.004. This indicated that the increase in the use of tradition animal identification methods would negatively affect animal welfare. The finding were similar to Masiga & Munyua, (2005) who found that traditional animal identification methods were not only painful and stressful for the animal and lowers the quality of the hides and skins and, thus, should be actively discouraged .

The study established that there existed negative significant relationship between cultural practices adopted by the Maasai community and animal welfare. The finding concurred Masiga & Munyua, 2005) who asserted that regardless of the fact, like many other communities, the Maasai have cultural practices that comprise animal welfare.

There existed a negative correlation between the independent variables large number of livestock, blood extraction, traditional castration methods, traditional animal restraining methods and animal identification methods and the dependent animal welfare.

5.4 Conclusions

The study concluded that all the five culture practises identified had an effect on animal welfare of the domestic animals. The culture of attaching value to many animals thus keeping many livestock has shortcomings of the livestock owners not being to provide quality of life especially when adverse climate like drought prevail. Other constraints are brought by demarcation of land and encroachment of pastoral land by other economic

activities hence taking away land available for pasture. In light of this, keeping large number of livestock will definitely result to compromising the welfare of the animals.

Cultural practises of castration through burdizzo rubber ring and open cut; animal restraining methods of nose ring, nose peg, and ear peg; and traditional animal identification methods of branding, skin laceration and ear notching all cause pain hence affect the welfare of animals. Though these practises have advantages of being cheap in cost, easy to use, readily available and serve the purpose they are intended to do, they greatly compromise the welfare of the animals. Similarly the culture practise of extracting blood from live animal cause pain to the animals.

There is therefore need for the community to re- evaluate these practises to ensure that animals do not suffer unnecessary.

5.5 Recommendations

Based on the findings the following were the recommendations for the study:

1. There is need for the community concerned to change some of the cultural practices to help them survive the changing pattern caused by global development. For instance due to shrinking land available for grazing, the community should endeavour to keep quality breeds rather than quantity.

2. Poor infrastructure and lack of essential and affordable service like veterinary services is a big hindrance to realisation of good animal welfare. There is need for concerted efforts of the community, government, profession and development partners to help provide essential services like affordable vet care in the area.

3. There is need for providing the right information through the new and existing platform. Information such as new techniques and developments of interests, laws concerning animals to empower the community.

4. There is need for the county government together with stakeholders to come up with a master plan particular on land use to curtail haphazard demarcation and ensure sustainable land use for development

5.6 Suggestions for Further Research

Taking the limitations and delimitations of the study, the following suggestions were made for further research.

1. A study on the level of awareness of animal welfare legislation and level of enforcement in the area.

2. The contribution of technological advancement (like mobile communication and boda-boda transport) to the improvement of animal welfare and livelihoods.

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APPENDIX I: QUESTIONNAIRE

RESEARCH QUESTIONNAIRES FOR MAASAI COMMUNITY MEMBERS

Dear respondent,

As one of the key respondent identified, you are requested to provide the information to fill in the questionnaire, which is part of the study done within Kambi Mawe location in Kajiado county district. The purpose of this study is to investigate some Maasai cultural practices that have a bearing on animals' welfare. Your participation in this research will help in generating the required information to achieve the above stated purpose. Kindly provide true and honest information by responding to the questions below. All the information will be protected and treated with the confidentiality it deserves. The information will be used for the purposes of this study.

Instructions

Please tick the appropriate option in the form or give your comments and opinions as requested. Your cooperation and response will be highly appreciated:

Questin. No._____ Date of interview_____Enumerator Name _____

Location_____ Sub Location_____ Village_____

Section A: Background Information

1. Respondent's gender? Male[ ] Female [ ]

2. Respondent's Marital status? Single[ ] Married[ ]

3. What is your age?

Below 20[ ] 21-25[ ] 26-30[ ] 31-35[ ] 36-40[ ] 41-45[ ] 46-50[ ] Over 50[ ]

4. What is your occupation? _____

5. Were you born in the area? Yes [ ] No [ ] If not How long have you lived here? 0-10 years[ ] 11-20 years[ ] 21-30 years[ ] 31-40 years[ ] Over 40 years[ ]

6. What is your level of education? No formal schooling [ ] Lower Pry education [ ] Upper Pry ed. [ ] Secondary ed. [ ] College [ ] University [ ]

7. Are you the head of your family? Yes[ ] No [ ]

Section B: Attaching value to large stock

8.How many animals do you personally own? Cattle[ ] sheep/goats[ ] donkeys[ ] dogs [ ] poultry[ ] others [ ]

9. How did you acquire your cattle?

10. How many cattle do you aspire to have?

11. How many cattle do your family own?

12. What is the largest number of cattle you ever owned?

13. What is the largest number of animals you have ever lost in a year within the last 10 years? How and how many?

Cause of loss	**Approximate numbers of animals lost**
Drought	
Predators	
Disease	
Theft/ raiders	
Others…….	
…….	

14. Has any of your villager lost animals through other means? Yes [ ] No [ ]; If yes which_____

15. How have you off stocked (disposed) your animals in the past one year?

Way of off stocking	**Approximate numbers of animals**
Sell	
Gift to relative	
Gift to friends	
Pay dowry	
Slaughter	
Abandon	
Others…….	

16. When do you sell your livestock? Never sold[ ] When many[ ] When a need arise[ ] Pay school fees[ ] When Price is good[ ] During drought[ ] Others_____

17. Are there problems of keeping large number of livestock? Yes [ ] No[ ]. If yes what are the problems? Water[ ] Foliage[ ] Disease control[ ] Herd control[ ] Predator control[ ] Others_____

18. Are there problems of keeping less number of livestock? Yes [ ] No[ ] If yes what are the problems? Water[ ] Foliage[ ] Disease control[ ] Herd control[ ] Predator control[ ] Others_____

19. Is keeping large herd numbers of animals sustainable? Yes [ ] No [ ]; If No, why_____

Section C: Practice of castration

20. Have any of your animals been castrated? Yes [ ] No [ ] ; If no jump to No. 22.

21. If yes, which one? Cattle [ ] Dog/Sheep [ ] Dog [ ] Donkey [ ] Others [ ]

22. Who castrated the animal and which method was used?

KEY: **Castrator**: 1=Respondent, 2= Family member, 3= Villager, 4= AHA, 5= Vet, 6=other **Method**: Z= Burdizzo, R= **R**ubber/ring, U=Unanesthetized open cut, S= anesthetized **s**urgery

Reason: V=Beha**v**iours control, P=**P**opulation control, Q= **Q**uality breeding, F=**F**attening, O=Others

Species	Castrator	Castration Method	Reason for castrating
Cattle			
Dog/Sheep			
Dog			
Donkey			
Others……			

23. What would you say of the following castration method in respect to the following

Method	**Effect on animals** P=Painful, D=Don't know, N=Not painful	**Cost** H=High, L=Low, D=Don't know	**Availability** A=Available, D=Don't know, U=Un available	**Appropriateness** Y=Yes, D=Don't know, O=NO
Burdizzo				
Rubber/ring				
Open cut				
Anesthetized surgery				
Others……				

24. Do you think the method you used is good for the animal? Yes_____ No_____ Don't Know_____

25. What is alternative to castration? _____

Section D: Practise of blood extraction

26. Do you extract blood from your cattle? Yes [ ] No [ ]; If no jump to No. 33.

27. Why do you extract blood?

28. When is the good time to extract blood?

29. How often do you extract blood from one cow in a year?

30. When should you not extract blood from a cow?

31. How do you extract the blood?

32. How do you manage wound?

33. Has there been any complication on animal as a result of blood extraction? Yes [] No []; If yes, what was the complication? _____

How did you manage it? _____

34. Do you think the practice of blood extraction is painful to animal? Yes [ ] No [ ]

35. What do you think is the effect of blood extraction on animal health? Detrimental [ ], No effect [ ], Don't know[ ]

36. Do you think there is a better way of blood extraction other than the one mentioned? ?_____

37. Is there an alternative to blood extraction? Yes [] No []; If yes, explain _____

38. Should the practice of blood extraction carry on?- _____

Section E: Restraining methods

39. Do you use any restrain method to your (rogue) animals? If yes which restrain do you employ

40. What would you say of these methods in regard to the following?

Method	**Effect on animals** P=Painful, D=Don't know, N=Not painful	**Cost** H=High, L=Low, D=Don't know	**Availability** A=Available, D=Don't know, U=Un available	**Appropriateness** Y=Yes, D=Don't know, O=NO
Nose ring				
Nose stick				
Ear ring				
Foot rope				

Muzzle rope				
Neck rope				
Others……..				

41. What are the alternative ways of handling rogue animals?

42. Are there methods of handling animals you feel should be discontinued?

Section F: Marking animals for identification

43. How do you identify your animals? Branding[ ], Ear notching [ ], Ear tags[ ] other _____

44. What would you say of these methods in regard to the following?

Method	**Effect on animals** P=Painful, D=Don't know, N=Not painful	**Cost** H=High, L=Low, D=Don't know	**Availability** A=Available, D=Don't know, U=Un available	**Appropriateness** Y=Yes, D=Don't know, O=NO
Branding				
Ear notching				
Ear tags				
Others…….				

45. Do you know if there are better ways of identification animals than the one you use?

46. Yes [] No [];If yes, explain _____

47. Is there a method of animal identification you feel should not be used? Yes [] No [];

If yes,

Which method	Reasons
Branding	
Ear notching	
Ear tags	
Others…….	