ATTITUDES TOWARDS ANIMALS AND THEIR WELFARE AMONG CATTLE KEEPERS IN MOROGORO AND COAST REGION IN TANZANIA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION OF SOKOINE UNIVERSITY OF AGRICULTURE. MOROGORO, TANZANIA.

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ABSTRACT

Investigation of knowledge on essential needs of animals, reactions of cattle keepers towards farm and other domestic animals with the aim of determining attitudes and perceptions towards animals and their welfare in Tanzania. Comparison was done between traditional and peri-urban backyard dairy cattle keepers. Primary and secondary data was collected through questionnaires, focus group discussion and on site observation. The findings show that in both groups, awareness on animals' welfare was recognized but they differed in aspects like disease prevention, input associated with welfare and attitudes towards handling and treatment of farm animals. However, the way cattle, dogs and cats were treated seems to differ between peri-urban and traditional cattle keepers. Poor treatment of cattle was observed in traditional group especially on aspects of dipping, vaccination, deworming and additional feeds such as concentrates, fodder and water supply. Low level of education, poor knowledge and little exposure on animal welfare were the key factors for the bad treatment of animals. Comparatively, cattle were cared more than dogs and cats in both sectors because of economic benefits. Therefore, due to the importance accumulated from the livestock sector to the economy of individual farmers and the country, the welfare of animals need to be advocated with all efforts. Good trained professionals working to reduce animal suffering should implement animal welfare laws, policies and practices. Educational campaign, seminars and workshops should be used to promote animal welfare issues. The Ministry of livestock and fisheries must take this as an important issue for good products of animals and for the benefit of the country.

DECLARATION

I, **Wilbert Vitus Joseph Burashi**, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution.

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DEDICATION

This dissertation is dedicated to my parents who laid down the foundation of my education.

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LIST OF ABBREVIATION

ASPCA	Arusha Society for the Prevention of Cruelty to Animals
DAEE	Department of Agricultural Education and Extension
DALDO	District Agricultural and Livestock Development Offices
DAS	District Administrative Secretary
FAO	Food and Agricultural organization
FGD	Focus Group Discussion
RAS	Regional Administrative Secretary
SNAL	Sokoine National Agricultural Library
SPSS	Statistical Package for Social Sciences
SUA	Sokoine University of Agriculture
WSPA	World Society for Protection of Animals

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Despite the cultural reverence to farm animals among local people, there is dearth of information about the way animals are viewed and treated by animal keepers in Tanzania. Available research information is mainly on the epidemiology and control of diseases, husbandry and interference measures that are aimed at improving the productivity of the animals. It is generally not appreciated that improving animal welfare, increases productivity and improves quality of life of the animals. It is therefore envisaged that understanding the way animals are viewed by farmers is an initial step towards improving animal agriculture in Tanzania.

In Tanzania livestock keeping takes the form of traditional pastoralism, where animals are expected to feed for themselves to a large extent and to compete with the environmental stresses imposed on them by nature (MOA, 1982). Traditional livestock keepers depend greatly upon livestock for their livelihoods (Rota, 2010). However, they are often involved in small scale farming systems where livestock plays a great role as a source of food, income and a compliment for agricultural inputs such as draught power and fertilizing manure (Rota, 2010).

According to Rota 2010, the peri urban livestock keepers are often better off or the poorest groups or households from the herders or small holding livestock producers who live in the fringes of urban areas in order to better access labour income and services to cope with their limited access to productive sources.

Pastoralists and smallholder farmers in developing countries have various objectives in their production circles centered on their local understanding of livestock production and culture (Herrald *et al.*, 2002). Traditionally, cattle play a significant role in the social life beyond their economic function, serving as prestige markers and social currency in the formation and strengthening of social ties of all kind of which bride payments may be seen as customs. This means that cattle are not merely an economic resource to the owner but also an essential constituent for the maintenance of rural societies (Mdoe and Kurwijila, 1998).

Demand for milk in the urban areas and the economic pressures among the people have added the role of the cattle beyond traditional values to a source of income and important nutrient in the upcoming well-off citizens. Consequently, high milk producing breeds of cattle are being kept in peri-urban areas of Tanzania including Morogoro and coast regions (Urassa, and Raphael, 1999). According to Mlozi *et al.* (1989) development of peri-urban dairy cattle keeping has been facilitated by the availability of milk market, high economic status of the elite; availability of space near housing units, labour, concentrate feeds, extension services and laxity of urban authorities to enforce bylaws governing the keeping of animals. However, the condition with which these animals are kept is not always commensurate with their natural needs. Studies have been conducted in the United States to assess public attitudes toward farm animal welfare. In general, these indicate there is substantial public confidence in farmers and ranchers in the treatment of animals (Herzog *et al.*, 2001). Majority of the public believes farm animals are currently raised without cruel treatment (Herzog *et al.*, 2001). However, surveys also seem to indicate there are increasing concerns about certain production practices, such as housing systems for veal calves, and intensive confinement for pigs and poultry (Swanson and Mench, 2001).

Bjerke *et al.* (1998), showed that attitudes formed early in life are persistent and that interest in particular species may influence attitudes towards other species of animals. The attitudes that are in mind can vary among different clusters in the population (Paul and Podberscek, 2000). This study, therefore seeks to understand the farmers' attitudes and perceptions towards animals and their welfare in our country, ultimately help to change the performance level of animal welfare for better animal production and livelihood of people.

1.2 Problem Statement and Justification

Traditional and improved animal husbandry has been practiced in Tanzania by pastoralists and peri-urban dwellers for both social and economic purposes. However, general care of animals is poor that lead into compromise of welfare, low productivity, diseases and unwanted death of animals. Low productivity in turn leads into economic losses that make it difficult to the cattle keepers to improve the facilities and care of the animals. The situation in Tanzania and how it influences animal keeping has not been investigated. It seems that understanding of the cattle keepers' attitudes and perceptions towards animals and their welfare is needed to provide additional avenue to extension workers towards educating cattle keepers on the essence of humane care of animals for benefiting both the humankind and the animals.

1.3 Objectives of the Study

1.3.1 General objective

To assess the cattle keepers attitudes towards animals and animal welfare as essential components of good animal productivity.

1.3.2 Specific objectives

1. To determine knowledge level on essential needs of animals and animal welfare.
2. To compare attitudes and perceptions on animal welfare between traditional cattle keepers and backyard dairy farmers.

1.4 Research Questions

1. Are the cattle keepers aware that animals are sentient being?
2. Is the concept of animal welfare equally important to the traditional cattle keepers and peri-urban farmers?
3. Is there a difference between treatment of cattle and other domestic animals?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The Meaning of Animal Welfare

There are several definitions concerning animal welfare. The term "animal welfare" generally refers to the state of an animal, and the extent to which it is faring well or ill in a particular situation or at a particular point in its life (Boissy *et al.*, 2005). Animal welfare is the physical and psychological well being of animals and the extent to which their natural life is being satisfied (Hewsons, 2003). The term animal welfare can also mean human concern for animal welfare or a position in a debate on animal ethics and animal rights (Hewsons, 2003).

Animal welfare is "the avoidance of abuse and exploitation of animals by humans by maintaining appropriate standards of accommodation, feeding and general care, the prevention and treatment of disease and the assurance of freedom from harassment, and unnecessary discomfort and pain or its state as regards its attempts to cope with its environment. This state includes how much it has to do to cope, the extent to which it is succeeding in or failing to cope, and its associated feelings (Broom, 1996). The study concerned more so to animal welfare as the state of an animal, and the extent to which it is faring well or ill in a particular situation or at a particular point in its life (Boissy *et al.*, 2005).

2.2 Indicators of Animal Welfare

Welfare is measured by indicators including health, behaviour, physiology, longevity, reproduction, and attitudes towards different types of animal uses (Hewson, 2003). According to (Broom, 1996). Welfare will vary over a continuum from very well to very

poor and studies of welfare will be most effective if a wide range of measures is used (Broom, 1996). Systematic concern for animal welfare can be based on awareness that non-human animals are sentient and that consideration should be given to their well being, especially when they are used by humans (Garner 1998; Munro, 2001). These concerns can include how animals are killed for food, how they are used for scientific research, how they are kept as pets, and how human activities affect the survival of endangered species.

2.3 Underlying Causes of Welfare Problems

According to the underlying causes of welfare problems include poverty, lack of knowledge, new technique, attitudes, and lack of responsibility (WSPA, 2011). If the animal is an important source of income or the owner relies on it for urgent fieldwork, he cannot afford to rest it or to treat it. Therefore it is important to raise awareness, and make the owner understand that: If the animal dies, a new one has to be bought. Less healthy animals are less productive. If the animal is ill, a person may have to do the work, e.g. carrying water. Free or cheap health care and information could be provided to prevent this situation.

There may not be any 'normal' animals in the area, and therefore the owner perceives the state of his animal as normal. If all animals have the same condition, and are in poor body condition, the owner will not be aware that the animals are in poor condition not, due to lack of knowledge and the intervention of the situation will be reported late. But people without a tradition of keeping animals lack knowledge or resources (e.g. in cities where there is no pasture available) with respect to adequate husbandry, feeding and treatment of animals always aware about their animals (Sheikh, 2010).

Problems can also arise when new species or techniques are introduced; for example, the distribution of oxen and ploughs without adequate training or monitoring. Further more different individuals or cultures have diverse attitudes towards different species/breeds/individuals. For example, in some areas the donkey is seen as the animal of the poor or of the women. When an animal is not owned but rented, the temporary keeper will try to extract maximum work from the animal to pay rent as well as gain a profit. When an animal is owned, but of low value, a new one can be obtained easily, thus contributing to an irresponsible attitude towards that animal (WSPA, 2011).

2.4 Attitudes and Perceptions of People towards Animal Welfare

Attitudes and perceptions can be generally defined as the tendency to think, feel, or act positively or negatively towards objects in our environment (Eagly and Chaiken, 1993). Attitudes and perceptions formed earlier in life tend to be persistent, and they have been shown that rural persons who grew up with livestock production are positively attracted to animal husbandry irrespective of their present occupation (Prokop, 2008). The attitude and behaviour of the stockman/owner has an effect upon animal behaviour, welfare, health and production (Kauppen *et al.*, 2010). The attitudes and perceptions about animal protection are slowly being recognized for both wild and domestic animals (Herrald *et al.*, 2002).

The linkages between antisocial behaviour and violence to animals are becoming visible. Specifically, links between lacks of human-directed sympathy (Arluke *et al.*, 1999). Sympathy has been proposed as a mediating factor in aggression to both humans and animals, with a number of authors suggesting links between deficits in sympathy and antisocial behavior in children, adolescents, and adults in both clinical and non-clinical populations (Arluke *et al.*, 1999).

2.5 Importance of Animal Welfare

Welfare of animals is important as it helps animals to live free in a well being manner, multiply in number, increase productivity, and maintain close interaction and relationship between human and animals for easy treatments and management (Hewson, 2003). Animals have subjective feelings and are consciously aware of diseases because diseases may be associated with pain, distress or discomfort. The capacity for conscious awareness may vary between species. Animal welfare takes an ethical standpoint of granting animals the benefit of doubt, based on cautious analogue with human experience and assumes some degree of consciousness. The strong care for animals reduces aggressiveness among themselves (Fraser *et al.*, 1997).

The wellbeing of individual animals tends to be overridden by the potential benefits and their sacrifice can bring to a large number of other animals closer to people. This utilitarian approach allows individual animals to be comfortable with people and management in terms of treatment of diseases, feeding, and parasite control becomes in long run. This is because the relationship between animals and human beings is maintained close (Bekoff, 2009).

Improved animal welfare is vital in order to meet consumer demand for products from high welfare systems. Typically, stronger concern is given to animals that are useful to humans i.e. farm animals and pets. The different level of sentience that various species possess, or the perception of such differences, also creates a shifting level of concern. Customers in markets prefer docile animals to aggressive ones and aggressiveness of animals arise from bad care (Yew-Kwang, 1995).

2.6 Attitudes and Behaviour of People towards Animals

Many people agree that attitudes and behaviours towards nature must be understood and often influenced in order to avoid further loss of biodiversity. Rural groups often want to reduce or exterminate populations of the species. Very little is known, however, about the complex structure of attitudes towards animals, and how it spreads opening throughout human development. Therefore to understand such conflicts, and to manage animals, its habitats, and human use of the natural environment is very crucial (Bjerke, 1998).

Direct and indirect selection pressures probably influence human attitudes toward animals. Direct pressures are derived from human evolutionary co-existence with animals. Indirect pressures are anthropomorphic generalizations of responses that originally evolved towards other people. The former group of attitudes comprises fear of animals, domestication, and their distribution. The latter group refers to general attraction to "cute" animals such as infants, due to their specific features (large eyes, large cranial expanse) or awkward movements (Prokop, 2008).

In addition, human attraction to animals or animal treatment also depends on physiological and communicative similarities between animals and humans. Physiological similarities with primates results into greater emotional attachment compared with other taxonomic groups (Serpell, 2004). Female and male differences occur on several ways on the attitude scales. Boys expressed higher dominionistic and ecologist scores than the girls, while girls scored higher on the humanistic and negativistic scales (Bjerke *et al.*, 2004). In Tanzania, about 99% of small traditional farmers take the animals from one place to another for grazing and watering (FAO, 2005).

Attitudes are learned dispositions, which are often involved in everyday use and these dispositions are usually shaped by the range of factors that included demographic, personality and other variables that underly a range of beliefs (Coleman, 2008). People beliefs about the mental life of animals often shape their attitudes towards animal welfare. Knight *et al.* (2004) found that a range of demographic variables, beliefs in an animal mind was consistently negatively associated with approval and uses of animals across a variety of situations, which include experimentation, teaching and entertainment. Broom, (2005) adds that the welfare of the animal depends on how the human user or carrier thinks about those animals. If an animal is thought of as an object to be used which is little different from something inanimate actions which causes poor welfare in the animals are much more likely than if the animals are considered to be similar in many ways to humans. The attitude of consumers, veterinarians and students concerning animals welfare have been recognized to have positive or negative influence on how the animal are treated (Serpell, 2004).

People who own or work on farms or other commercial organizations using animals are influenced by a variety of factors when they decide on animal housing and management policies and when they are executing these policies. They may be influenced, for example, by endeavoring to make profit and the potential financial returns that they are likely to get for their product will be of major importance to them for decision making (Broom *et al.*, 1994). This has the significant impact on the attitudes towards animals and their welfare. However, the attitudes of animals' users depend upon early training traditional practices, acquisition of knowledge from others subsequent to any training, personal experience and general beliefs and philosophy. The training may include the information and knowledge about disease control, growth, offspring production or product quantity and quality as well as animal welfare (Broom, 2005).

Traditional farmers and peri-urban farmers along with their families' friends and neighbors have to be critical of the effects on the welfare on animals of the methods used, and if such methods result into poor welfare they are obliged to change these methods (Broom, 1998). Moreover, farmers or others often deem the traditional practices of keeping or using animals to be right for the sole reason that, this is the way that we have always done it. As Ryan (1977) said, some of these methods are the best ones to produces good animals welfare, but others are not thus a need to change or to be modified and not to be conservative on a simple reason of traditions. Broom, (2005) reveals that people in charge of animals do not like to be thought of as incompetent or uncaring, so they may respond to such comments by giving animals' veterinary treatment or changing the management systems so as to avoid statements. For example, they may decide to keep animals inside a building or otherwise hidden from public view of the anticipation that the number of people who might comments on poor welfare will be smaller and there is greater chance that the farmers of other person responsible can persuade him /her self that there are no significant welfare problems.

Rajecki *et al.* (1993) reveals that, the way animals are socially constructed can determine the fate of animals in the sense that the implications of these constructions could lead to preferred behaviors toward an animal. At the individual level it is known that negative attitudes to animals are associated with less human behavior towards them and vice versa (Hemsworth, 2003). But at a societal level, changes in peoples attitudes and perception are usually the driving force behind improvements in animal related legislation and public policy (Kirkwood and Hubrecht, 2001) in this sense the investigation of the social construction is crucial for the understanding of the reasons behind a certain treatment of animals. Coleman *et al.* (2008) note that attitude towards animals and their welfare differs

considerably across the different animal sectors and across species. The way farm animals are perceived differs from the way domestic pests and native animals are perceived.

According to Driscoll (1995) to evaluate attitude to the uses of animals, it is important to understand people's generic attitudes to animal species. Bjerke and Ostedahl (2004) reports that people most like small wild animal including small birds, squirrels, butterflies and hedge holds but have moderate liking like domestic species of ducks, geese, dogs and cats. They as well, report that birds of prey and fox's were also alike. However, animals that include, rat, mosquitoes, mice, snails, wasps, bees and bats are most disliked because they bring discomfort to human being.

2.7 Attitudes towards Animals by Species

Different species of animals with different use by human have been seen to be perceived differently.

2.8 Attitudes towards Cattle

Lusk *et al.* (2007) notes that cattle in comparison to other animals are well cared for due to the perception that farm animal's welfare is important, as they are advantageous to the society. Mayfield *et al.* (2007) reported that about 85% of people in Italy, Sweden and Great Britain felt that farm animal welfare was important or very important. However it was evidenced that the welfare of chickens is very poor in the countries mentioned. Coleman (2004) adds that in comparison to other animals, cattle are at lower risks. This also magnify the importance of this study as it aims at looking at how other animals specifically cattle, dogs and cats are treated by peri –urban livestock keepers relative to tradition livestock keepers.

2.9 Attitudes towards Companion Animals

Passantino (2008) defines companion animals to include a dog, a cat or donkey domesticated by human. Lagone *et al.* (1994) points out that the use of the phrase "companion animal as differentiated from pet animals implies reciprocity indicating " a mutual relationship much more like friendship" the word pet inters passivity on the part of the animals and connotations of an animal existing to provide pleasure and entertainment for human being. Paek (2003) adds that animal activist typically prefer the term" companion animals" over" pet" as it better describes the relationship between a human and domestic animals and fully encompasses the role that such animals play in people lives.

Coleman (2004) says that the dab ion attitudes towards compassion animal are quite uneven. He appreciates the work that has been done on human companion animal interactions and reason for owning a pet and attributes of both owners and pets that characterized the human pet relationship. Poss and Bader (2007) assessed attitudes towards companion animals amongst Hispanic residents and there was anecdotal evidence of companion animal overpopulation and a substantial number of free re-coming dogs about 93% of 206 surveyed resents supported sterilization of dogs and cats while 90.2% indicated a variety of concerns about free roaming dogs. Fewer than 10% supported free, roaming of dogs and cats. Similarly, the attitudes towards companion animals are affected by religious beliefs. Al Fayez *et al.* (2003) who studied the attitudes towards pets of Kuwaiti families with published data from American families found that dogs were negatively perceived as they are regarded as "dirty" in the Islamic religion not with standing the view that this does not come from the Holly Quran.

2.10 Factors Affecting Human Attitudes towards Animals

Studies by Serpell (2004) and Coleman (2005) provide factors influencing human attitudes towards animals and their welfare to include the sex, personality traits, Empathy. Education and urban residence religious affiliation and animal attributes among others. These factors are discussed below.

2.10.1 Sex

Sex is found to be the strong factor which influence attitudes towards animals where women scoring higher on their positivity to the treatment of animals relative to men Driscoll (1992). According to Gallup and Beckstead (1998) a consequence of women socialization, emphasizing a relational orientation of care and nurturing extended to animals, women exhibit more concern about moral treatment of animals than men.

2.10.2 Personality traits

Although personality is not seen as a prominent factor in determining how people perceive and act on animals, it has evidenced to have some effect on how people of different personality perceive animals and their welfare. For example people with characterized tender minded and artistic have most positive attitudes towards animals' welfare issues (Mathew and Herzog, 1997). Galvin and Herzog (1992) found that interpersonal empathy was a significant predictor on animal welfare people having greater abilities to empathies expressed greater concern for issues related to animals' welfare.

2.10.3 Education and urban residence

Urban residences as compared to rural had higher level of education and are associated with more positive views on animals Bjerke *et al.* (1998). It assumed that the extent to which farmers are educated would tend to influence their ability to gain knowledge fully

about the issue concerned. According to Sheikh (2010) education enhance people to face their existing challenges.

2.10.4 Religious affiliation

Dniscoll (1992) doubts about the relationship between religion and concern for animals. However, Peek *et al.* (1997) reported that religious ideologies have significant impact on how people think about a particular species of animals. For example, Islamic religion has negative attitude towards pigs and dogs compared to Christians.

2.10.5 Animal attributes

Knight *et al.* (2004) points out that the beliefs in animal mind is a powerful and consistent predictor of attitude towards animals in the sense that believing in the mental life of animals could introduce a more dilemma about the acceptable level of pain and distress inflicted on animals. Animals that seem to be close phylogenetically or physically and behaviorally similar to human, tend to evoke more positive affection than those distant or dissimilar (Krikwood and Hubrecht, 2001).

2.11 The Interaction between People and Animals

Interaction between man and animals is documented throughout the worlds history and the society's attitude to animals has varied in line with views on the role of animals over the centuries and around the globe (Passantino, 2008). There has always been a close link between man and animals. Depending on the circumstances, animals can be friends, enemies or useful instruments to obtain certain ends. In the Bible animals are sometimes revised in a very positive light as friends to be defended against harassment or exploitation. However, sometimes mans fear of wild animals is apparent (Passantino, 2008).

According to Paek (2003), domesticated animal like dogs have been sharing lives with humans for more than 12 000 years and domesticated cats have been companion animals for approximately 4500 years. Cats were known to be household companions in Egypt 500 years ago and were often mummified and buried with their human companion. Along with that, ancient Egyptians considered their dogs both assistants and protectors (Epstein, 2001). However, Douglas (2000) who studied dogs mitochondrial DNA at the University of California at Los Angels, estimated that domestication occurred as early as around 135 000 years ago.

2.12 The Attitudes towards Animals and Their Welfare in Tanzania

In recognition of the importance of good welfare of animals Tanzania has been taking steps on a need to protect animals from brutalism, which comes from negative attitudes and other perceptions. Back, in 1947 Tanganyika passed the animal welfare (Protection) ordinance Cap. 153, animal (pound) ordinance Cap 151 cattle grazing ordinance cap 155 and animals disease ordinance cap 156 in the country as efforts to enhance animals welfare (URT, 2000).

Later, during the Tanzania Veterinary Association Conference of 1995 done in Arusha, it was reveled that there was insignificant animal welfare concerns in the country and that animals were in so many aspects neglected, mistreated and tortured thus a need for intervention. In 1996 the Arusha Society for the Prevention of Cruelty to Animals (ASPCA) was found to try to promote animal welfare program in the country (Bahari *et al.*, 2006). However, among other things noted, traditions, customs, taboos, religious and beliefs that differ from one society to other have been found to be barriers to human handling of animals (Shirima and Msanga, 2004). To safeguard the animal welfare that seems to be deteriorating in the country, the Government of the United Republic of

Tanzania reviewed and passed the Animal Welfare Act in 2008. This act requires animals to be cared in their different categories are the advocated.

- Animal welfare Act, 2008 Cap 319 recognizes that:

(i) An animal is a sentient being.

(ii) Animal welfare is an important aspect of any developed society which reflects the degree of moral and cultural maturity of that society and

(iii) Animal welfare enhances livestock productivity and that a human being has a moral obligation to care respect and protect an animal.

On top of that, the animal welfare Act, 2008 cap 319 provides five freedoms for people to ensure that animals are cared for. These are:

(i) Freedom from hunger, thirst and malnutrition. It means access to fresh water, and a diet that maintains full health and vigour.

(ii) Freedom from physical discomfort, that is an appropriate environment, including shelter and a comfortable resting area

(iii) Freedom from pain, injury and diseases. Meaning, prevention or rapid diagnosis and treatment.

(iv) Freedom to express normal behavior. Means sufficient space, proper facilities and company of the animals own kind.

(v) Freedom from fear and distress. Means conditions and treatment which avoid mental suffering (www.fawc.org.uk/freedoms.htm (2009).

Moreover, the Animal Welfare Act 2008 provides offences and penalties for any one who goes against the law and its subsequent regulations. Thus, with increased welfare concern in the Government a study on welfare of animals at farmer level is now indispensable.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Description of the Study Area

The study was conducted in peri-urban areas of Morogoro Municipal and selected villages in Coast region. In Morogoro peri-urban cattle keepers were obtained from 7 wards namely Bigwa, Kihonda, Magadu, Mindu, Boma, Mazimbu and Kichangani. Morogoro peri-urban has an altitude of 500-600m above sea level and it is located between longitude 37°-39°E and latitude 6°-5° S. Morogoro Municipality with a population of more than 177 760 is situated 220 km south west of Dar es Salaam and enjoys a mixture of warm and cool temperature ranging between 27°C to 33.7°C in the dry/warm season and 14.2°C to 21.7°C in cold/wet season. The Uluguru Mountains, which rise to 3000 meters above sea level, have a major temperature moderation effect to the area (Mlozi *et al.*, 1989).

In Coast region, the study was conducted in Rufiji and Bagamoyo Districts. In Rufiji respondents were selected from Chumbi ward, while in Bagamoyo the respondents were from Vigwaza ward. Rufiji District is among six administrative districts comprising the Coast region. Rufiji is made up of six divisions, twenty-seven wards and ninety six registered villages. It is situated in the Southern part of the region and bordered by Kilwa District on the southern side, Mafia District on the eastern side, Mkuranga District on the northern side and Liwale District on the southwestern side. The district covers an area of 13 339 km^2 out of which 4 824.3 km^2 (36.2%) is arable land, 1 656.62km^2 (12.4%) is covered by registered forest reserves, 6258km^2 (46.9%) is covered by Selous Game Reserve and 600km^2 (4.5%) is covered by water bodies, which are rivers, swamps, Lakes and the Indian Ocean. Rufiji District Profile (2011).

Bagamoyo District is one of the six districts in Coast region. It is located between 37^0 and 39^0 East; and between 6^0 and 7^0South of the Equator. The historical Bagamoyo town, which is the district headquarters, is located 65 kilometers north of Dar es Salaam city. The district borders Morogoro District on the west; Mvomero, Kilindi and Handeni Districts on the north; Pangani District on the northeast; Indian Ocean on the east; Kinondoni District on the southeast and Kibaha District on the south. Bagamoyo is known for being rich in historical, cultural and tourist sites such as the famous Kaole ruins, the exit point of the body of Dr. David Livingstone, the Old Boma, the Catholic Museum which is one of the oldest Cathedrals in Africa and the exit point of slaves and ivory.

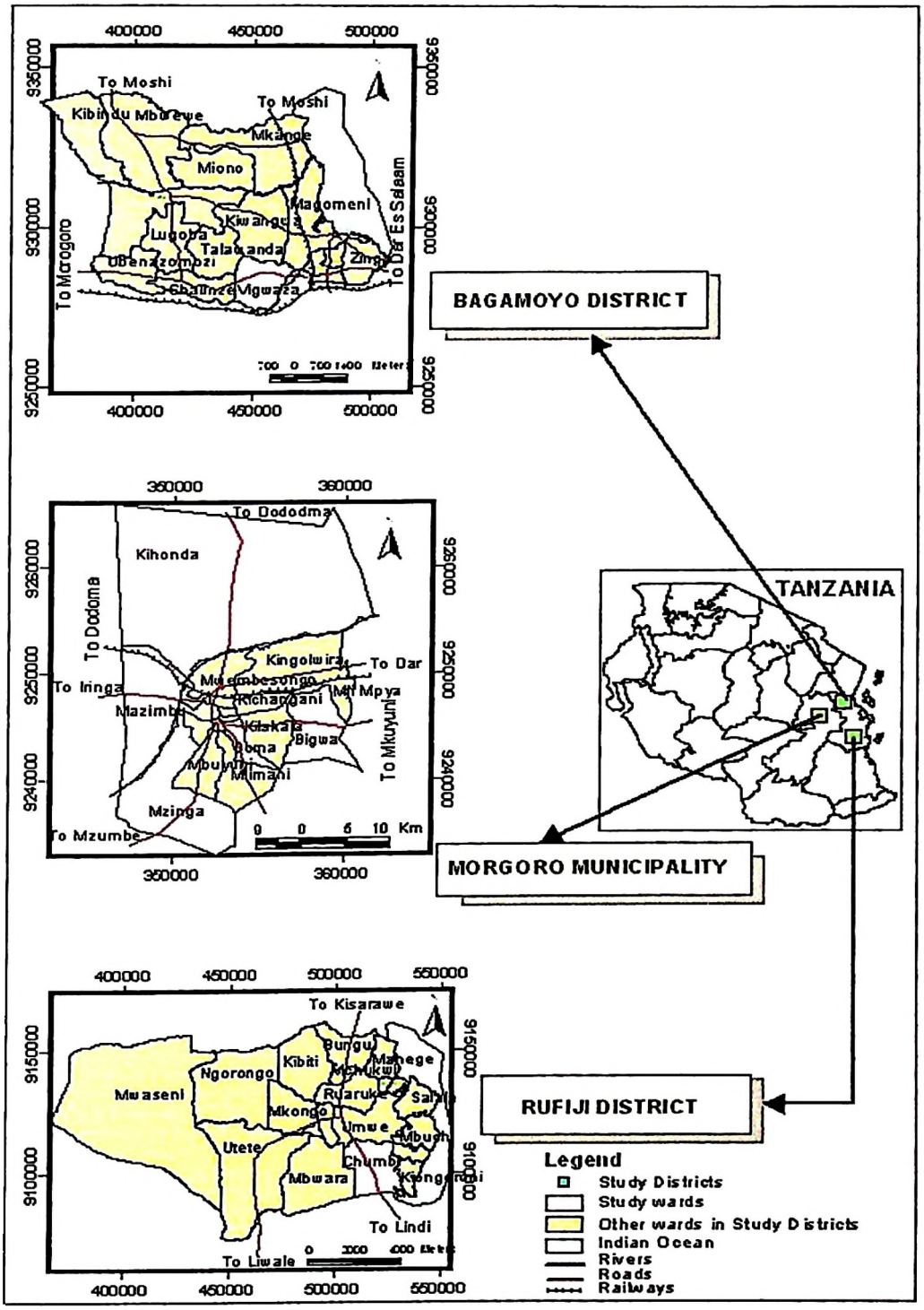


Figure 1: Maps of Bagamoyo district, Morogoro Municipality and Rufiji districts showing the location of the study villages

3.2 Research Design and Study Population

This study employed a cross-sectional design due to limited time, whereby data were collected by using questionnaires at a single point at a time from a sample selected to represent a large population. The population comprised traditional livestock keepers from Chumbi ward in Rufiji District, Vigwaza ward in Bagamoyo and Peri-urban cattle keepers in Morogoro Municipality. The districts and wards were purposively selected because of the availability of traditional cattle keepers in this two regions i.e. Morogoro peri-urban and Coast region. The two regions were selected based on their potentiality in Livestock sector, particularly in cattle keeping as well as the convenience to obtain the required data.

3.3 Sample Size Determination and Sampling Procedure

The sample size was 120 respondents. 60 peri-urban cattle keepers from Morogoro Municipal (backyard) and 60 traditional cattle keepers from coast region (pastoralists). The traditional respondents were randomly picked by listing numbers on pieces of papers on a public livestock meeting then each fellow was asked to pick a paper to which number was included in the sample. Individual respondents for the peri-urban farmers were selected randomly by using a table of random number as described by Crosswell (1994).

3.4 Pre-testing

The questionnaire was pre-tested to 10 respondents from per-urban cattle keepers as well as traditional cattle keepers. The per-urban pre-testing was done at Mazimbu and Magadu wards while traditional pre-testing was done at Melela in Mvomero District. The questionnaires were translated into Swahili language for clear understanding for the respondents.(Reasons for pre-testing).

3.5 Methods of Data Collection

The primary data were collected using a combination of questionnaire. The questions included both close and open-ended questions aimed to obtain the detailed information. The questionnaire included general information of the respondents, animal related experiences, farm details and attitudes and perception of livestock keepers towards animals as shown in Appendix 1.

3.6 Observation

Direct observation was obtained through checklist. Observations include those structures that are associated with welfare of animals like cattle house/shades, roof, soft beddings, slurry accumulation, cubicles, feed trough, floor and drainage and space for animal social contacts.

3.7 Focus Group Discussion

FGDs were employed to elicit information from cattle keepers in all three districts. A group of eight cattle keepers each were asked in regard to their perceptions towards animals and their welfare and how they treated and managed their animals. Information collected included stocking rate, management of animals, knowledge of traditional cattle keepers and the care of animals depending on benefits the animal provides to the owner.

3.8 Data Analysis

The Statistical Package for Social Sciences (SPSS) Version 16 was used to analyze data. Descriptive statistics such as frequencies, percentages and Chi-square were used to obtain variability among different variables for easy interpretation. The probability level of 0.05 was used as a criterion for determining significances on attitude towards animals and their welfare among cattle keepers in the two study Districts.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Biodata of Respondents

Tables 1 summarize the biodata of the respondents interviewed in the present study. Briefly, at least (47.5%) of the respondents were above 50 years and there was no statistically significant difference (P>0.05) in age distribution of respondents between peri-urban and traditional cattle keepers. Owners of the cattle were predominantly males in both sectors with more male owners among the traditional cattle keepers than the peri-urban dairy farmers. All respondents from traditional sector were married, whereas 88.3% were married in the peri- urban dairy cattle keepers.

The difference in education between two sectors was due to the fact that, most peri- urban had access to education, retired people live in urban and peri- urban and cattle that are kept in peri-urban are not used only for traditional purposes. Most, (80%) of peri- urban people were beneficiaries of education. Exposure to education increases farmers' ability to obtain and use information relevant to adopt new changes. The present study is in line with Sheikh, (2010) who found that education enhances people to adopt and face their existing challenges.

Table 1: Biodata of respondents

Variable	Peri-urban (n=60) n (%)	Tradition (n=60 n (%)	Total n (%)
Age in years			
15-20	1 (1.7)	0NS	1(1.7)
21-30	1 (1.7)	5NS	6(5)
31-40	10(16.6)	14(23.3) NS	24(20)
41-50	16(26.7)	16(26.7) NS	32(26.6)
50 and above	32(53.3)	25(41.7) NS	57(47.5)
Sex			
Male	48(80)	57(95)**	105(94.2)
Female	12(20)	3(5)**	15(12.5)
Marital status			
Single	53 (88.3)	60(100%) NS	113(94.2)
Married	7(11.7)	0(0%) NS	7(5.8)
Education			
Informal	0(0)	35(58.3)**	35(58.3)
Primary	12(20)	24(40)**	36(30)
Secondary	48(80)	1(1.7)**	49 (40.8)
Religion			
Christian	51(85)	18(30)**	69 (32.5)
Islam	9(15)	9(15)**	18 (15)
Pagan	0(0)	33(55)**	33 (27.5)

Note: ** = significant at ($p<0.05$). NS = Not significant at ($p>0.05$).

All respondents believe in different religions (Table 1). Most (85%) of the peri-urban respondents were Christian and Muslims whereas traditional cattle keepers were primarily pagan with few Christians and Muslims. This is because most of churches are found in peri-urban than in traditional areas. People who attend church and Mosque are dedicated to their faith and that they treat animals with compassion as they feel they are the most vulnerable members of their society (Scully, 2002; Deemer and Lobao, 2005, 2011).

4.2 Other Livestock Kept by Peri-Urban and Traditional Cattle Keepers

Other animals that are kept in the study area is shown in Table 2. Animals that are kept include dogs, cats, donkeys, pigs, sheep, goats, chicken and ducks. Data shows that there is no statistically significant difference (p0.05) between Peri-urban cattle keepers and

Traditional cattle keepers about the number of households keeping dogs and cats. The reason for that could be that the demand for draught animals in traditional is more compared to peri-urban. Kevin (2004) showed that 95.4% of donkeys were being used as park animals in villages where most of traditional cattle keepers live. The results also show that chicken are kept in abundance by both groups compared to the rest of animals. The reason for more chicken in both sectors is due to high demand of economic importance. Eggs and live birds are sold to earn petty cash for females and eggs and chicken meat is also used for home consumption.

Table 2: Other livestock kept by peri-urban and traditional cattle keepers

	Peri-urban (n=60) n (%)	Traditional (n=60) n (%)	Total(n=120) n (%)
Dog	57 (95)	55 (91.7) NS	112 (93.3)
Cat	29 (48.3)	42 (70) NS	71 (59.1)
Donkey	0 (0)	14 (23.3)**	14 (11.6)
Pig	1 (1.7)	0 (0) NS	1 (1.7)
Sheep	1 (1.7)	1 (1.7) NS	2 (1.7)
Goats	2 (3.3)	1 (1.7) NS	3 (2.5)
Chicken	50 (83.3)	60 (100) NS	110 (95)
Ducks	0 (0)	1 (1.7) NS	1 (1.7)

Note: ** = significant at ($p<0.05$). NS = Not significant at ($p>0.05$).

4 3 Care of Other Animals

Table 3 show that dogs are cared more than cats in both traditional and peri urbn sectors. However care for dogs was more statistically significant $p< 0.05$ than cats in both sectors. In peri-urban, dogs had good care compared to traditional. There was houses for dogs and proper feeding. The difference occured due to lack of education between traditonal and peri-urban cattle keepers (Table 1). Similar results were reported by Jones *et al.* (2011) in Wondo Genet South Ethiopia, who revealed that 50 (100%) of rural dog owners have no education and dogs were not preperly handled. Dogs are most important than cats to respondents because are used for security purposes instead of employing people for the

same. Dogs are kept for the purpose of protecting their family properties. Cat are mainly used for chasing away rats from houses. According to Octavius *et al.* (2011), 41 (82%) of the respondents in their study found that the main reason for keeping dogs was to look after cattle and other animals.

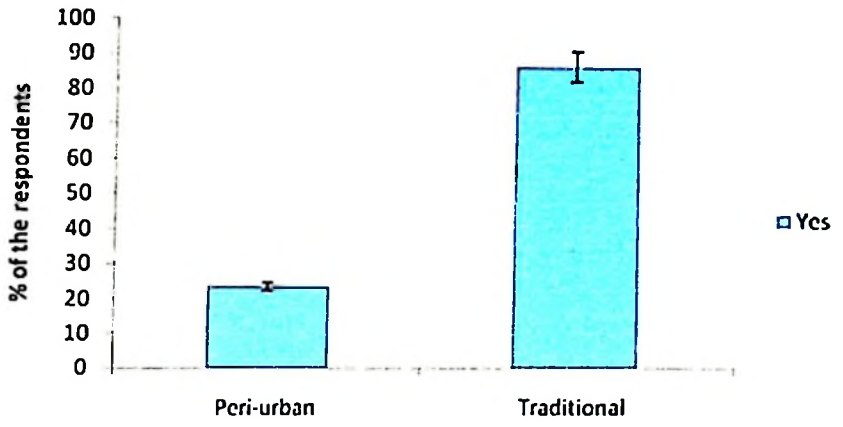
Table 3: Care of other animals

Variable	Peri-urban (n=60) n (%)	Traditional (n=60) n (%)	Total (n=120) n (%)
Animal care most			
Dog	55(91.7)**	40(66.7)	95(79.1)
Cat	2(3.3)	6(10)	8(6.6)
Both dog and cat	3(5)	5(8.3)	8(6.6)
Reasons for caring most			
Security	42(70)	56(93.3)	98(81.6)
Rat control	6(10)	4(6.7)	10(8.3)
Save money for paying watchman	3(5)	0(0)	3(5)
Utility of animals			
Hunting	0(0)	4(6.7)	4(6.7)
Rescue animals from thieves	26(43.3)	23(38.3)	49(40.8)
Protect family properties	20(33.3) **	7(11.7)	27(22.5)
Age of comfort in years			
15-20	4(6.6)	3(5)	7(5.8)
21-30	4(6.6)	11(18.3)	15(12.5)
31-40	14(23.3)	17(28.3)	31(25.8)
41-50	15(25)	1(1.7)	16(13.3)
51 and above	6(10)	0(0)	6(5)
All age in my life	3(5)	0(0)	3(2.5)
When I was young	0(0)	2(3.3)**	2(1.6)

Note: ** = significant at ($p<0.05$).

4.4 Stockman Knowledge of Animal Husbandry and Welfare

Stockman traditional sector were not well trained about the knowledge of animal husbandry and welfare. For the case of peri–urban very few beat animals and in traditional animals were significantly beaten.



Only 23.3% of the peri-urban livestock keepers said yes whereas 86.7% said yes for the traditional fellows. These results could be caused by poor behaviour/knowledge of stock workers that lead to the use of excessive force towards the required place (Grandin, 2000). Generally there is less care of welfare from traditional cattle keepers compared to peri urban. This could be due to education and religion imparted into the peri urban cattle keepers.

4.5 Importance of the Five Freedoms to Cattle Keepers

According to Fig. 2, more than 90% peri-urban respondents showed extreme importance of the animals to be free from physical discomfort compared to 60% of traditional cattle keepers. This was associated with difference in education between the two sectors. Heleski *et al.* (2004) in United States found that 97% of respondents agree/strongly agree that animal should be free from physical discomfort. Furthermore, case of expressing normal behaviour, peri-urban cattle keepers' scored higher compared to traditional cattle keepers. Traditional cattle keepers attach more than 80% Freedom from pain, injury and diseases to their animals while peri-urban cattle keepers remain below 71%. This is contributed by the fact that owners of peri-urban cattle keepers are Christian, employed and had other economic activities other than keeping animals. Their cattle and other

animals are managed by untrained and less educated employed stock workers who are not keen to the handling of the animals. But traditional cattle keepers spend most of the day near to their cattle and other animals. These results were also proved by Deemer and Lobao (2011) who found that dominion orientation; Church attendants are related to less concern with animal agriculture while spiritual /traditional are related to more concern with animals.

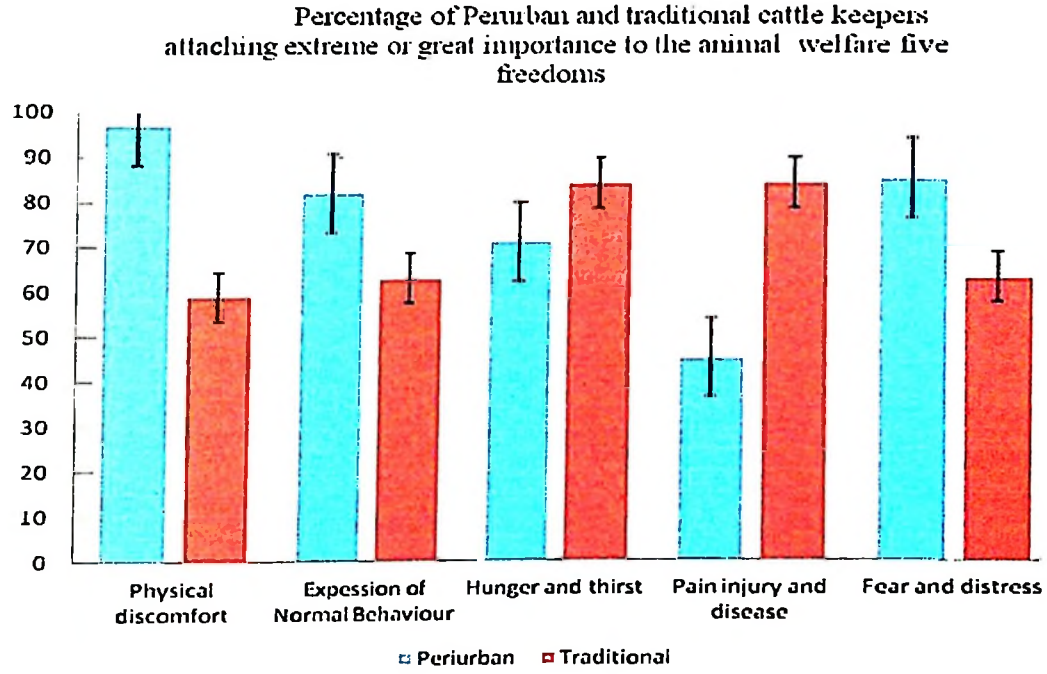


Figure 2: importance of the five freedoms to cattle keepers in the study area.

Respondents of peri-urban cattle keepers scored 80% high in relation to traditional 63%cattle keepers about fear and distress. There were different levels of understanding on how importance of each of the five freedoms to the respondents of the two groups of cattle keepers. Peri-urban cattle keepers had higher level of concerned for welfare of their animals compared to their fellow traditional cattle keepers because, peri-urban cattle keepers are more knowledgeable about the five freedoms compared to traditional cattle keepers Heleski *et al.* (2004).

4.6 Inputs that Are Associated With Welfare of Farm Animals (n=120)

Table 4 below summarizes about the inputs that are associated with welfare of farm animals. There is significant difference $p< 0.05$ between peri-urban cattle keepers and traditional cattle keepers in supplying additional feeds for cattle. Generally additional feed and water provision are done by smaller proportion of traditional farmers. Peri-urban cattle keepers show more positive concerned than traditional cattle keepers. Traditional cattle keepers don't provide additional feed to cattle. Dryden (2008) found and suggested that additional feed are essential for growth, maintenance and synthesis of products like milk and eggs, source of energy for work done walking and feeding.

The attitudes of traditional cattle keepers not proving additional feed could be an indicator of poor animal welfare (Dryden, 2008). The reason for not providing additional feed could be poor or lack of knowledge and lack of enough funds especially during dry periods. Peri-urban livestock keepers were more aware of signs of thirst in cattle than tradition cattle keepers and stockman employed in peri-urban sector. This show that traditional cattle keepers are still behind concerning issues of animal welfare, unavailability of veterinary officers and poor knowledge of respondents could be the reasons for traditional cattle keepers to remain behind concerning animal welfare issue. Peri-urban kept few cattle due to low space for grazing, but supplied additional feeds to their animals and hence produced more milk compared to traditional. Knowledge about the importance of additional feed and adequate provision of water is absent in traditional sector and should be planned and implemented (Hall, 1999).

Table 4: Comparison of peri urban and traditional cattle keepers on provision of additional feed, disease prevention and housing

Input and description	Peri-urban n (%)	Traditional n (%)	Total
Additional Feed and Water			
Provision of Concentrates	52(86.7)	1(1.7) **	53(44.1)
Additional Fodder	48(80)	1(1.7) **	49(40.8)
Minerals	38(71.7)	6(10) **	44(36.6)
Protein supplements	43(63.3)	1(1.7) **	44(36.6)
Awareness of signs of thirst in cattle	40(66.7)	22(26.7)**	62(46.7)
Disease prevention			
Vaccination against prevailing diseases	47(78.3)	23(38.3)**	70(58.3)
Deworming	47(78.3)	20(33.3)**	67(55.8)
Tick control	49(81.6)	38(63.3)**	87(72.5)
Medical attention to cattle when sick	59(98.3)	49(81.6)**	108(90)
Stockman awareness of disease signs	5(8.3)	3(5)**	8(6.6)
Intervention to disease Delay after 24 hours.	4(6.6)	57(95)**	61(50.8)
Housing			
House/roof or shade for cattle.	60(100)	0(0) **	60(50)
Special ban for sick cattle	29(48.3)	0(0) **	29(48.3)
Separate house for calves	60(100)	28(46.7**)	88(73.3)
Soft bedding.	14(23.3)	0(0) **	14(11.6)
Feed trough.	53(88.3)	0(0) **	53(44.1)
Present of floor for cattle	5(8.3)	0(0) **	5(4.1)
Floor type: Concrete	53(88.3)	0(0) **	53(44.1)
Earth	5(8.3)	60(100) **	32(26.6)
Bedding provided	40(66.7)	1(1.7) **	41(34.1)

** *P<0.05; * P>0.05*

4.6.1 Disease prevention

Vaccination against prevailing diseases is also shown in Table 4. There is significant difference p< 0.05 between peri-urban cattle keepers and traditional cattle keepers. Vaccination, deworming tick control, and medical attention to cattle when sick are practices that are common and well known to peri-urban cattle keepers compared to that of traditional cattle keepers. Medical attention to cattle when sick in both sectors is well known. However, awareness of disease signs is unknown in both sectors, though peri-urban cattle keepers report the intervention of the disease within 24 hours compared to traditional cattle keepers who report late after 24 hours from the onset of the sign of

disease. Delay taking preventive and reporting about the disease occurs may cause complication in treatment and sometimes may cause death of animal due to tick borne diseases and worms (Hesterbeg *et al.*, 2007).

4.6.2 House/shade for cattle

House/shade for cattle is another input, which is associated with animal welfare. There is significant difference $p < 0.05$ between peri-urban cattle keepers and traditional cattle keepers. House/roof or shade for cattle and its infrastructures are predominantly for peri-urban cattle keepers only. All respondents in peri-urban sector had house/shade for their cattle while traditional had no houses or shade to protect cattle from adverse conditions. This practice of shade construction is not common in traditional sector because they don't have permanent settlement and they are less educated. Shifting different places searching water and pasture could be the result of poor education and knowledge of animal welfare management. Special bans for sick cattle were poor for both sectors of cattle keepers. Separate house for calves was practiced in peri-urban and few respondents of traditional cattle keepers know the importance of separating calves (Table 4). Concrete floor, soft beddings and feed trough were practiced in peri-urban sector. Cattle of traditional sector lied on earth without beddings or feed troughs in the byre. Harder surfaces restrict animal to express its normal behaviour (Herlin, 1997).

4.6.3 Milking techniques

Milking technique is a practice that is also summarized in Table 5 and is associated with welfare of farm animals. The way this practice is done for both sectors are quite different. This is beyond the five freedoms, which are the key component of animal welfare. It seems that stockmen or cattle owners don't know the milking procedures or sometimes it was negligence. The use of force during milking by pulling teats and tying the animal

legs is not conducive to good animal welfare; hence owners/stockmen in traditional sector should be trained.

Table 5: Comparison of milking techniques, ban cleaning and social needs of animals as welfare inputs

Input and description	Peri-urban n (%)	Traditional n (%)	Total
Tie legs during milking	32 (53)	57(95) **	89 (74.1)
Pull teats	7 (11.7)	59(98.3)**	66 (55)
Squeeze teats	53 (88.3)	1(1.7)**	54(45)
Applying jelly to teats	41(68.3)	0(0)	41(34.1)
Clean udder before milking	57(95)	28(46.7) **	85(70.8)
Frequency of removing of slurry			
Once a day	25(41.7)	NA	
Twice a day	20(33.3)	NA	
Thrice a day	11(18.3)	NA	
Occasionally	4(6.7)	NA	
Shift the byre to a new open space	NA	29(48)	
Care for Social behaviour needs			
Mixing different groups of animals	4(6.7)	56 (93.3) **	60 (100)
Common space for animals for social contact.	23(38.3)	0(0)**	23(19.1)

NA =Not applicable in the management system: ** P<0.05 Significant.

4.6.4 Frequent of removing slurry

Table 5 clarify briefly how frequency of removing slurry in a ban or byre. Accumulation of slurry in byres is a condition that may influence animals to welfare problems. The study found that removing of slurry in byres is not applicable in the management system in traditional sector instead some of respondents 48% shift the byre to a new open space. This is not applicable in peri-urban sector because they do regular slurry removal from the byre. Andreae and Smidt (1982) reported that accumulation of slurry, wet or slippery condition may lead into difficulties in standing or lying of animals and can result in various diseases like foot lameness, tail-tip necrosis, and mastitis sometimes causes limb injury.

4.6.5 Care for social behaviour need to animals

During the study care for social behaviour need were studied, it was found that 93.3% traditional cattle keepers mix different groups of animals in the same space. This may cause conflicts among cattle and results into skin bruises, distress and discomfort. Metz and Mekking (1984) found that cattle need spaces to retreat so as to avoid confrontation and fail to express its normal behaviour. However, few respondents 38.3% in peri-urban sector have common space for Social contact while traditional sector does not bear in mind as idea of importance to welfare of animals. Poor knowledge of animal welfare could be the source for traditional sector.

4.6.6 Treatment, training and essential needs provision to dogs and cats kept by the Peri-urban and Traditional cattle keepers

Mistreatment of animals

Treatment, training and essential needs provision to dogs and cats kept by the peri-urban and traditional cattle keepers are summarized in Table 6. Generally these animals are misconduct, beaten and isolated by traditional cattle keepers compared to Peri-urban. Peri-urban are statistically significant $p< 0.05$ more concerned compared to traditional on training and socializing dogs and cats especially for the medical attention of dogs and cats. Dogs are cared more than cats due to their importance to owners. Peri-urban is statistically significant $p< 0.05$ more concerned compared to traditional in provision of the essential needs.

Table 6: Percentages for treatment, training and essential needs provision to dogs and cats kept by the Peri-urban and Traditional cattle keepers

Description	Peri-urban n (%)	Traditional n (%)	Total
Mistreatment of dogs	57 (95)	49(81.6) **	106 (88.3)
Mistreatment of cats	52 (86.6)	49(81.6) **	101(84.1)
Treatment of misconduct in animals			
Beating the animal to discipline it	24(40)	60(100)	84(70)
Isolate from other animals	2 (3.3)	0 (0)	2 (1.6)
Consult a Veterinarian	18(30)	0(0)	18(15)
Tie/Confinement	16(26.7)	0(0) **	16 (13.3)
Training and Socializing dogs and cats			
Command and beating during training	24(40)	5(8.3)	29(24.1)
Giving names	7(11.7)	6(10) **	13(10.8)
Fear or worry of dogs and cats	9(15)	15(25) **	24(20)
Medical attention to dogs	48 (80)	15 (25) **	63(52.5)
Medical attention to cats	12 (20)	2 (3.3) **	14 (11.6)
Provision of essential needs			
House / coop for dogs	38 (63.3)	1 (1.7) **	39 (32.5)
House / coop for Cats	4(6.7)	3 (5) **	8(6.6)
Provision of food for dogs	55 (91.6)	42 (70) **	97 (80.8)
Provision of food for cats	48 (80)	35 (58.3) **	83 (69.1)
Water provided to dogs	49 (81.6)	11(18.3) **	60 (50)
Water provides to cats	21 (35)	9(15) **	30 (25)

Dogs are more provided with essential needs such as coop, food and water compared to cats in both sectors. Peri-urban is more concerned in provision of essential needs to dogs and cats compared to that of traditional. Jones *et al.* (2011) in Southern Ethiopia found that there was no (0%) coop/house for dogs in rural area and (100%) respondent share the same house with the owners and livestock. The reason that leads to mistreatment of these animals is poor knowledge of animal welfare to peri-urban cattle keepers and lack of both education and knowledge of animal welfare to traditional cattle keepers.

4.7 Results from Observation

Observation was done to structures that are associated with welfare of animals. The structures are cattle house/shades, roof, soft beddings, slurry accumulation, and cubicles, feed trough, floor, drainage systems and space for animal social contacts. It was found that all structures were not practiced in traditional cattle keepers. These were practiced in peri-urban sector, but are in poor management system.

4.8 Results from Group Discussion

Apart from observations gained from conducted study; researcher conducted group discussion to capture non quantifiable in formations. Among other findings from discussion, there was random increase of incoming herds of cattle from Arusha, Mwanza and Shinyanga to coast region for searching water and pasture this caused over grazing and overstocking in the studied areas.

Results from group discussion also showed those traditional cattle keepers' concepts are similar i.e. to have a large number of cattle as an indicator of wealth and prestige to other livestock keepers rather than good husbandry and management to increase animal productivity in order to change their life pattern. From the findings above it is clear that attitudes towards animals differ from both traditional and peri-urban livestock keepers. However, there are some cases where both of the groups of farmers from these two sectors had similar behavior in treating animals and their perception towards animals. The education differences, exposure and lack of relevant knowledge were found to be the cause for traditional livestock keepers to behave the way they do to their animals compare to the peri -urban farmers.

Finally, the benefit with which the particular animals provides to the farmers becomes the bases for which it is perceived and taken care of this follows the findings that show that greater attention is given to cattle and in some ways dogs compared to cats. Cattle were ranked highly followed by dogs then cats at the bottom.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Both peri-urban and traditional cattle keepers recognized the awareness of animals' welfare but they were different in some aspects like disease prevention, input associated with welfare and attitudes towards handling and treatment of farm animals. Generally the welfare was good in peri-urban than in traditional cattle keepers. Cattle, dogs and cats were handled differently in both sectors. Good handling was observed in peri-urban cattle keepers. Cattle were well handled followed by dogs and cats were least handled. This kind of handling was based on economic benefits obtained from these animals. There was poor treatment of cattle in traditional group especially for dipping, vaccination, and deworming. Input supply such as concentrates, fodder, protein, minerals, and water supply was practiced in the peri-urban cattle keepers. Peri-urban livestock keepers had good education; knowledge and exposure compared to the traditional livestock keepers. These were key factors led for the bad treatment of animals in the traditional sector.

5.2 Recommendations

The welfare of animals needs to be advocated with all efforts thus negative attitudes and perception towards animals could be eliminated. Good scientific trained professionals that they actually work to reduce animal suffering, should implement animal welfare laws, policies and practices. The education campaign, seminars and workshop plus any other relevant methods that can help to eliminate completely if not to minimize to greater extent the bad attitudes are to be used for the purpose. Thus, the government through the ministry of livestock and fisheries need to take this as an exclusive important issue if it is expected to bear good products for the benefit of the country.

i. Cattle owners should improve management practices through putting animal welfare inputs such as constructing shades, separate cubicle for calves, putting soft beddings for calves and milking cows as an essential component of animal welfare needs.

ii. The Ministry of Livestock and Fisheries should prepare education programs of animal welfare to Veterinary and Extension officers so that they will enlighten cattle owners about modern cattle keeping for the purpose of maintaining animal welfare issues in their working areas.

iii. The government should supervise effectively the laws/legislation concerning animal welfare so that handling, various operations and treatment of cattle and other animals are done as advocated by experts.

iv. The government should prepare a public education campaign on animal welfare issues for the purpose of increasing animal welfare productivity

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APPENDICES

Appendix 1: Questionnaire

Title: Attitudes towards Animals and Their Welfare among Cattle Keepers in Morogoro and Coast Region.

Section: A

General information

1. Number of respondent.....Sex.....
2. Name of village.....
3. Ward.....
4. Division.....
5. What is your age in years?.....
6. What is your marital status? Married..... Single.....
7. What is your family size?.....
8. What is your highest level of education?.....
9. Are you a religious believer?..Yes/No...Which religion?

Section B: Animal related experiences

1. Have you or your family ever had any animals apart from cattle?.....Yes/No.....
2. What kind of animals.....(a) Dog(s)..... Number.....

(b) Cat(s)..... No.....

(c) Donkey ..... No.....

(d) Others specify....No.....

3. Do you have dog or cat now?.....Yes/No.....How many.....

4 . Who takes care of your dogs or cats?.....

5. Which animal do you care most.?.....

Why?.....

6. Has an animals ever been a source of comfort or support to you even if you did not own the dog or cat e.g. when you were sad or scared?....Yes/No.....

How old were you?.....

Tell me about the animal?.....

7. Has your animals ever been hurt?.....Yes/No.....

8. What happened.....

(a) Hit by car, attacked by human beings, fell, ate something.

(b) Deliberate kicked, punched, thrown, not fed. (Tick one)

9. Have you ever felt afraid for your animals or worried about bad things happening to your animals...Yes/No..

10. How do you teach your animals to be a good?.....

11. What happens when your dog or cat misbehave?.....

12. Have you ever lost a dog or cat you really care about?.....Yes/No.....

13. What is the course of loss.....(a) died..... (b) run away.....

14. If died, was the death (a) Natural..(b)Accidental (c) Deliberate (d) Cruel or violent.

15. Have you ever seen someone hurt an animal?..Yes/No

16. What happened?.....

17. Have you ever seen an organized dog fight?.....Yes/No .....

How old were you?.....

Tell me about it?.....

.....

.....

What would you do if you see it now?.....

18. Have you ever hurt an animal?.....Yes/No.....

How old were you?.....

Tell me about it?.....

.....

What kind of an animal?.....

Were you alone when you did this ? Yes/No.....

Did anyone know you did this ?.Yes/No.....

What happened afterwards?.....

19 Have you ever been frightened- really scared or hurt by an animal?.Yes/No..

What happened.....

Are you still afraid of this kind of animal or other animals?.....

Section C: Farm details:

1. Concentrates/Additional feed

a. Do you feed the animals with concentrates? Yes/No

b. Where is the ration from? Commercial/Farm-made

c. What amount do you give the cows? Kgs per cow

d. What's the feeding frequency? Regular/Occasional daily

e. Which category of animals is fed? All/milked cows only

2. Fodder

a. Which fodder do you use to feed the animals on? Nappier/Hay/Silage/other

b. How do you feed this fodder? Chopped/ Whole

c. How many times a day do you administer fodder to the animals- Adlib/1/2/3 times per day

d. Is this fodder mixed with other plants (weeds) – Yes/ No

e. Which are these unwanted materials?

f. Do your animal's select (reject) some types of fodder you offer to them? Yes/No

g. What do you do if this happens/

3. Minerals

a. Do you supply minerals to the animals? Yes/ No

b. What is the name of the supplement/

c. What amount do you give? adlibitum/measured daily

d. What is the feeding frequency of the mineral supplements? adlibitum/Once per day/Occasional (less daily)

4. Additional Protein (Cotton seed, Sorghum, Fish meal, Alfafa, Lucerne)

a. Do you supply proteins to the animals? Yes/ No

b. What amount do you give? Kgs per cow

c. What is the feeding frequency of the protein? Adlibitum/once per day/Occasional

5. Water

a. Is it supplied on a regulated basis? Regulated/Adlibitum.

b. How do you know when your animals are thirsty?

c. Observation: Hygiene status of water in the water trough? Clean/dirty

6. Housing

a. Are cubicles present in the hosing structure? Yes. No

b. Do the animals have a common space for social contact? Yes/ No

7. **What is the animal;** cubicle ratio 1:1, 1:2, 1:3, other ration specify.....

   a. Is there presence of cubicle kerb Yes/No

   b. What is the Kerb height in cm

8. **Cubicle soft beddings**

   a. A re there cubicle (soft) beddings in the cubicles? Yes/ No

   b. Which type of bedding is present? Earthen/Concrete/Straw/Sawdust/Any other

   c. What's the Bedding quality? - Good (straw) Poor (Earthen or concrete)

   d. What is the Stocking rate? – Number of cubicle/animals? Under/Capacity/Over

9. **Floor**

   a. What is the Surface floor type/ Concrete/Earthen/Slatted

   b. What is the Surface quality/ - Rough/Smooth/Worn out

   c. Is the walking area adequate? – Narrow/Adequate

   d. How is the floor drainage? – Good/ Poor

10. **Feed bunks (feed trough)**

   a. Are there feed bunks (feed trough) present in the housing? – Yes/No

   b. How is the feeding bunk space? Small/Adequate

   c. What material is it made of – Concrete/Wooden/ Iron sheet

   d. What is the surface quality? – Smooth/Rough

   e. Are there neck rails present? – Yes/No

   f. Is the neck rail height optimal? Yes/No

11. **Stall roofing/Shade during sunny or rainy days**

    a. Do the cubicles have roofing? Yes/No

    b. Do the feed bunks have roofing? Yes/No

    c. Does the whole House have roofing? Yes/No

12. **Stall walls**

    a. Are there stall walls? Yes/No

    b. What are they made of? Wood/concrete/iron sheets

    c. What's its surface quality/ Even/Uneven (Protruding surface that could cause trauma).

13. **Milking parlour**

    (a) Is there a milking parlour? Yes/No

    (b) What is its surface quality? – Even/Uneven

    (c) What are the dimensions for its

        (a) Length meters.....

        (b) Width meters.....

14. **Slurry**

    (a) What is the current slurry status? None/Acceptable/Excessive (completely overlying the floor)?

    (b) What is the depth of the slurry accumulation? (vertical diameter of a stick in the slurry will be taken)

    (c) How many times a day is the slurry removed? -1/2/3 occasional

15. Are different age groups mixed? Yes/ No

16. Is there a maternity area/stall? –Yes/No

17. Is there a fodder chopper?- Yes/No

    (a) What alternate chopping method is us

    (b) Is there a chopping area? Yes/No

18. Milking

    (a) Are the animals legs tied during milking yes/No

    (b) Is milking jelly used before milking? – Yes/No

    (c) What milking technique is used? Squeeze/Pull/Machine

    (d) Are Udders cleaned before milking? –Yes/No

    (e) What temperature of water is used? Cold/Warm

    (f) What is the hygiene of the udder wiping cloth –Clean/Dirty

    (g) Do you use individual or common wiping towels? –Common/Individual

    (h) What is the texture of the udder wiping cloths? – Smooth/Rough

19. Disease Prevention and Control

    (a) Do you spray the animals? Yes/No

    (b) How often do you spray the animals? – Occasional/Once per week

    (c) What acaricide application method do you use? Spray/Dip/Pour on

    (d) Do you Practice routine vaccination? Yes/No

        (i) Which diseases do you vaccinate against_____

    (e) Do you practice claw trimming at least once per year? Yes/No

20. Calf housing

    (a) Are the calves housed separately? – Yes/No

    (b) What is the floor type? –Slatted/Concrete/Earthen

(c) Are beddings provided? – Yes/No

(d) What is the bedding type? - Earthen/Straw/Sand/Concrete/Other

21. Health

(a) Is there any animal sick? Yes/No

(b) What is the state of its demeanour –Bright/Dull

(c) What is the nature of the sickness – Systemic/Localized infection

(d) Are the Farmer/Stockmen aware – Yes/No Not applicable

(e) What is the stat of the rumen? – Hollow/Bloated

22. Is there any agonistic/ abnormal behaviour among the animals? (Fighting, aggression) – Absent/Mould/Medium/Severe

23. Animal –human interaction

(a) What is the avoidance distance/Flight distance (distance animal maintains while approached by stockmen at 90^0)

(b) Do the stockmen/Farmer beat the animal/ Yes/No

24. Do you keep any records? Yes/No

(a) If yes do you keep health records Yes/No

(b) If yes do you keep reproductive/breeding records Yes/No

25. Is the Intervention in case of a disease Prompt (within 24 hours)/ Delayed after 24 hours)

26. Who attends to the case Vet/AHA (Animal health assistant) Not sure of qualification

27. **Which of the identification methods do practice**

(a) Branding Yes/No

(b) Ear tagging Yes/No

(c) Other specify.....

28 Do you routinely deworm the animals? Yes/No

29 Do you practice dehorning? Yes/No

(a) Which method do you use –Rubber ring/Surgical using wire saw/ hot iron/Other

(b) Who performs the procedure? Vet/Animal Health Assistant/Owner/Not sure of qualification

(c) Is it done under anaesthesia? Yes/No

(d) At what age do you dehorn the animals

30 What of the following do you think is essential for the cows and other animals at all times (tick where applicable

		Caws		dogs		Cats	
		Yes	No	Yes	No	Yes	No
31	(a) Food						
32	(b) Water						
33	(c) Housing						
34	(d) Medical attention						
35	(e) Space to rest and play						
36	Do you think animals can be mistreated?						
37	Should people who mistreat animals be punished?						

SECTION D:

Instruction: Indicate the degree to which each statement implies to perceptions of livestock keepers towards Strongly Agree; Agree; Disagree; Strongly Disagree; Neutral.

S/N	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral
1	Transportation of cattle on foot to the market has no effect.					
2	Cleaning of cattle house and feedlots is a daily task.					
3	Shade is not necessary to cattle.					
4	Distance from home to source of water affect cattle.					
5	Cattle have individual temperament					
6	Cattle feel hunger					
7	Cattle have mind and ability to think					
8	Cattle experience something akin to boredom					
9	Cattle feel pain					
10	Castration without anaesthetic is common phenomenon					
11	Cattle should have enough space to move freely					
12	Cattle should have to express a majority of their normal behaviour					
13	Cattle must have freedom from fear and distress					
14	Cattle should have freedom from hunger and thirst most of the time					
15	Cattle have free from pain, injury and diseases					
16	Prolonged standing of cattle has no effect to cattle					
17	Poor cubicle house design has no effect to your cattle					
18	Also stocking density has no impact to your cattle					
19	Cattle social grouping do not affect your cattle					
20	It upset me to see somebody harassing cattle					
21	I will be comfortable to see sick cattle					
22	I don't feel sympathy when I see a person slaughtering a cow without stunning.					