UNDERSTANDING COMMUNITY PARTICIPATION IN WILDLIFE CONSERVATION IN AMBOSELI ECOSYSTEM, KENYA

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DECLARATION AND RECOMMENDATION

DECLARATION

This thesis is my original work and to the best of my knowledge has not been presented before for the conferment of any other degree.

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RECOMMENDATION

This thesis has been submitted for examination with our approval as the university supervisors.

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DEDICATION

This thesis is dedicated to my daughters Vivian and Sonia for the support, understanding and encouragement given during my studies.

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ABSTRACT

This study examined the extent to which the local community participated in wildlife conservation in Amboseli Ecosystem guided by three objectives: to examine the effect of land tenure and land use systems on community participation in wildlife conservation; to assess the implication of wildlife policies and legal framework on community participation in wildlife conservation; and to identify incentives for enhanced community participation and securing more space for wildlife conservation. This study was conducted through a cross sectional study design in two group ranches (Olgulului and Kimana). This study was informed by the Social Exchange Theory and supported by the General Systems Theory. The population of this study consisted of all the 1,342 households in two group ranches. A sample of 134 households was drawn with the unit of analysis being the household head (adult male aged 26 to 68 years). Both quantitative and qualitative data were collected using semi structured interviews. Statistical Package for Social Sciences (SPSS) was used to analyze the data. Study findings indicated that the existing land tenure and land use systems appear not to encourage community participation in wildlife conservation. The respondents observed that the existing Kenyan wildlife policies and legal framework moderately influence community participation in wildlife conservation. This study established that with proper incentives and adopting land use practices compatible with wildlife conservation; enumerating benefits and liabilities of wildlife outside Amboseli National Park; creating enabling institutional arrangements that enhance wildlife conservation; enhanced benefit sharing and developing land use plan which will guide land use types within certain areas are measures that can create more space for wildlife conservation. This study concluded that communities living around Amboseli National Park will seek to experience a sense of reciprocation through their involvement in conservation activities to ensure that they receive returns for leasing or putting easements on their land for wildlife use only, while the conservation agencies have to ensure that payment for easement and leases is sustained. For policy and practical considerations, it is recommended that the government should to revise the revenue allocation mechanism with a focus on communities hosting wildlife on their lands, operationalize Land Management Acts, aid the establishment of ecotourism ventures, initiate land banking and direct land purchases, strengthen community based enterprises, and implement regulatory frameworks for funding conservation initiatives.

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ABBREVIATIONS

AE	Amboseli Ecosystem
ANP	Amboseli National Park
ATRGCA	Amboseli/Tsavo Group Ranches Conservation Association
AWF	African Wildlife Foundation
CRA	Commission for Revenue Allocation
CSR	Corporate Social Responsibility
CBD	Convention on Biological Diversity
CBC-PA	Community Based Conservation – Protected Areas
CBO	Community Based Organizations
CBNRM	Community Based Natural Resource Management
FPIC	Free, prior and informed consent
GDP	Gross Domestic Product
GOK	Government of Kenya
GST	General System Theory
KWS	Kenya Wildlife Service
KM	Kilometer
MA	Masters of Arts
NGO	Non Governmental Organizations
ROK	Republic of Kenya
SPSS	Statistical Package for Social Sciences
SQ	Square
UNEP	United Nations Environmental Programme

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

This study examined the extent to which the local community participated in wildlife conservation in Amboseli Ecosystem. Conflicts in the developing world between wildlife conservation objectives and indigenous livelihood practices have severely threatened the sustainability of each enterprise (Cernea and Schmidt- Soltau, 2006). In East Africa, most important protected areas are found adjoining pastoral land use systems. Extensive forms of land use are to a greater degree compatible with wildlife management where wildlife, livestock and local resources users are part of a complex social and natural resource management system.

Over the last four decades, the realization dawned that the real threat to wildlife was not the illegal or commercial hunting, but wildlife's inability to compete economically with alternative uses of the land. Wildlife conservation is being replaced significantly by agriculture, even in areas where one would expect a diverse and robust spectrum of indigenous animals to have a comparative advantage (Child, 1995). Therefore, the fundamental cause of decline in wildlife populations and biodiversity loss is attributed to Maasai communities who live around Amboseli National Park.

The realization that most biodiversity and large portions of representative ecosystems in Kenya are located outside the current protected area network, where land is shared with the local communities, has become apparent in recent years (Seno and Shaw, 2002; Bergstrom and Skarpe 1999). However, the boundaries of protected areas were not necessarily drawn based on scientific principles, and thus do not encompass all ecosystems and wildlife ranges (Okello, 2005). This was a natural consequence of the model adopted by Kenya's protected area system. Since the 1940's, the conservation of natural resources in Kenya has largely been based on the 'Yellowstone Model' (Okello, 2005). Under this model, the boundaries of protected areas are set by the government or local agencies based on resource endowment

criteria of an area, displacing the local people, outlawing human settlement and designating it as a protected area (Wishitemi and Okello, 2003).

The Amboseli landscape is mainly a rangeland of outstanding aesthetic appeal and beauty dominated mainly by the world's highest free standing mountain (Mount Kilimanjaro), accompanied by the scenic Chyulu Hills (Okello, 2005a). The area also has one of the most abundant free ranging wildlife (especially large mammals) concentrations (Okello, 2005b), which together with spectacular landscapes, inspired the creation and appeal of the world famous Tsavo, Chyulu Hills and Amboseli national parks (Okello *et al.*, 2003). It is still common to see herds of zebra, wildebeest and gazelle grazing side-by-side with Maasai livestock harmoniously. Wildlife live and move freely among the parks, group ranches, community wildlife sanctuaries and other dispersal areas in the ecosystem covering an area greater than 6,000 km^2 (Western, 1982).Therefore space, pasture, plant resources and water are critical resources in this area are critical for the survival of people, their livestock and wildlife.

The Amboseli landscape is a lived-in working rural landscape that supports socio-economic and cultural livelihoods and the lifestyle of the Maasai. The Maasai are a renowned indigenous people whose adherence to their cultural practices have won them international fame (Galaty, 1992; Wishitemi and Okello, 2003) and made them a focus of cultural tourism in Kenya. Land and its resources are very critical for rural people's livelihoods, and are based on different land ownership regimes: privately owned lands, formal protected areas e.g., national parks, community owned wildlife sanctuaries, and communal lands managed by the Maasai in different group ranches (Lamprey and Reid, 2004).

The ecosystem comprises Amboseli National Park (ANP), six surrounding group ranches, and small individual ranches covering an area of 5,700 sq. km. The National Park covers 392 sq.km or about 7% of the ecosystem. The park serves as a dry season concentration area due to its series of swamps (Ntiati, 2002). The park is however too small and is therefore dependent on the surrounding community lands for wildlife dispersal. If the ecosystem is to continue supporting viable populations of wildlife and retain its ecological character, the Park must be maintained and the surrounding strategic dispersal areas protected.

This ecosystem is renowned for its abundance and diversity of wildlife. However, the ANP is small, and not ecologically viable to sustain the current wildlife populations which rely on larger ecosystem than protected within the national park. Securing more space for wildlife conservation without compromising the livelihood of the local population will entail a series of strategies that this study will attempt to explore. It is a fact that the existence and ecological integrity of the Amboseli ecosystem is increasingly threatened. To assure viability, it will be necessary to explore modalities for enhancing community participation in wildlife conservation by sustaining community rights and benefit sharing in the Amboseli ecosystem.

Amboseli National Park is a perfect example of the problems of conserving the spectacular large mammal communities found in a protected area. As in many other parks, Amboseli's wildlife migrates seasonally beyond the park boundaries into land owned by Maasai pastoralists. There is an increasing realization that, the management of wildlife resource needs to be inclusive and involve the local communities. Conservation authorities are increasingly becoming aware of the need to involve local communities in managing natural resources to safeguard and secure more space for wildlife conservation (KWS, 2012). Similarly, the local communities are now seeking ways of getting benefits from the wildlife resources on their lands particularly through wildlife-based eco-tourism ventures that have the potentials for direct benefits.

1.2 Statement of the Problem

This study examined the extent to which the local community participates in wildlife conservation in Amboseli Ecosystem. Amboseli National Park is regarded as one of the most economically significant parks in Kenya owing to high tourist visitation and revenue streams. Despite the economic significance of the Park, there is no national policy framework to provide guidance for making wildlife conservation a viable land use option. The wildlife dispersal areas outside the park boundaries are shrinking at an alarming rate due to changing land use activities and the growing human population pressure, aggravating human–wildlife conflicts as well as creating unviable ecosystem for wildlife. The park cannot support the current wildlife populations without the dispersal areas offered by the community land. The

ecological limitation of the park calls for the management of wildlife resource in the ecosystem to be inclusive and involve the local communities. This study therefore aimed to provide these linkages and fill the existing gap.

1.3 Objectives of the Study

1.3.1 Broad Objective

The broad objective of the study was to examine the extent to which local community participates in wildlife conservation in Amboseli Ecosystem.

1.3.2 Specific Objectives

The specific objectives of the study were: -

i) To examine the effect of land tenure and land use systems on community participation in wildlife conservation in the Amboseli ecosystem
ii) To assess the implication of Wildlife policies and legal framework on community participation in wildlife conservation in the Amboseli ecosystem
iii) To identify incentives for enhanced community participation and securing more space for wildlife conservation in the Amboseli ecosystem.

1.4 Research Questions

This study was based on the following research questions.

i) How do land tenure and land use systems affect community participation in wildlife conservation in Amboseli ecosystem?
ii) What is the implication of wildlife policies and legal framework on community participation in wildlife conservation in Amboseli ecosystem?
iii) Are there incentives for enhanced community participation and securing more space for wildlife conservation in the Amboseli ecosystem?

1.5 Justification of the Study

This study has contributed to the general understanding of community participation in wildlife conservation. First, there existed gaps in knowledge on how to win space and reclaim the fragmented dispersal areas for wildlife conservation. Similarly, there had been no national policy framework to provide guidance for making wildlife conservation a viable

land use option. It was an acknowledged fact that the protected areas, Amboseli national park inclusive cannot support the current wildlife population levels without the wildlife dispersal areas offered by the community land. The ecological limitation of the ecosystem therefore called for an integrated and adaptive ecosystem management approach to sustain wildlife and habitat diversity which this study aimed to explore.

Secondly, conservation areas in Kenya have suffered from array of systemic and historical habitat loss and fragmentation in many areas, which has led to islands of nature surrounded by a landscape of limited value to wildlife. In Amboseli, wildlife conservation must be delivered in a more successful way alongside other land uses in the wider landscapes, to ensure increasing or stable wildlife populations in the changing climate of land uses in the rangelands.

Thirdly, information generated by this study will contribute to the development of more effective strategies for influencing institutional changes that empower the local community to take control of their natural resource, secure their livelihoods and protect their communal land and environment. In addition this study aims at providing additional information to the existing legal, institutional, policy and economic framework that encourages, promotes and supports the use of appropriate progammes for conserving wildlife habitat outside protected areas in Kenya. This study's findings will therefore be relevant to law and policy makers, Government of Kenya, non-governmental organizations (NGOs), community based organizations (CBOs) and landowners in wildlife areas.

1.6 Scope and Limitations of the Study

This study was carried out in two group ranches namely; Olgulului /Ololorashi and Kimana group ranches which are adjacent to ANP for a period of three months. The group ranches are part of the Tsavo-Amboseli ecosystem and are situated between Amboseli National Park, Tsavo West National Park and the Chyulu Hills. Together, these group ranches create wildlife corridors and dispersal areas that connect the park islands, allowing the parks to support large populations of seasonally migratory mammals. The group ranches also support large populations of wildlife on their own.

This study envisaged various limitations. First, the area has been subjected to various commercial studies aimed at community developments. This has led to the community members expecting monetary returns for information given. As such, it was challenging for the researcher to conduct this academic study perceived to have no financial returns. Secondly, in terms of accessibility, the rugged terrain of the ecosystem was very challenging, requiring four wheel drive vehicles, which were available full time at the time of data collection. In addition, some respondents were not willing to reveal information pertaining to land sales in their group ranches for fear of reprisals from the group ranch officials..

Despite the aforementioned limitations, the following were done to ensure this study captured the necessary data to achieve the stated objectives. First, to enable movement within the ecosystem, KWS provided a vehicle to be used by the Researcher and research assistant. Regarding respondents' limitations, personal interviews and assurances were enhanced by the researcher with help from the research assistant who understood the local language to enable the target respondents provide the required information without fear and also to rapport between the respondents and the research assistants.

1.7 Definition of Terms

Human-Wildlife Conflict: Any and all disagreements or contentions relating to destruction, loss of life or property, and interference with rights of individuals or groups that are attributable directly or indirectly to wild animals.

Community: Users of land and wildlife who hold a set of clearly defined rights and obligations over land and wildlife

Participation: A process through which stakeholder's influence and share control over development initiatives and the decisions and resources which affect them

Entitlements: A guarantee of access to benefits based on established rights or by legislation

Benefit Sharing: A commitment to channel some kind of returns -- whether monetary or non-monetary -- back to the range of designated participants

Easements: An agreement between parties granting the right to use all or part of a Landowner's property for a specific purpose

Migratory corridor: A wildlife corridor is the joining of fragmented habitats. This helps to increase the gene flows between the individual habitats which improve the fitness of species. Wildlife corridors are created as a means of conservation or general improvement of the environment. In this plan it refers to continuous stretch of natural area that the animals use as they move between the park and other relatively natural areas outside the park.

Fortress Conservation: Conservation based on the premise that the only way to preserve the natural character of the environment is to remove all human influence from the area, often forcibly, in order to create wilderness areas.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter presents review of literature on previous research done on enhancement of community participation in wildlife conservation through sustained community rights and benefits sharing in the Amboseli ecosystem taking cognizance of the fact that the ecosystem is under threat from competing and conflicting land uses. This section provides a framework to determine the relevance of this study. Also covered in this section are the study's theoretical framework and the resultant conceptual framework indicating the dependent and independent variables for the study.

2.2 Community Participation in Wildlife Conservation

The concept of national parks was devised in North America as a cultural by product of industrialization (Bergin, 1995). The world's first national park Yellowstone was established in America in 1872 (Mackenzie, 1988) and it was adopted as a model for the establishment of national parks in Africa. As in Europe and North America, the essence of conservation practice in Africa was the preservation of certain selected areas, their landscapes and species (Adams and Hulme, 2001). Protection of wildlife, habitats and landscape, and enhancement of tourism were the primary objectives of creating protected areas.

Most of Africa's protected areas were curved out of lands with long histories of occupancy and use (Neumann, 1998). The creation of the parks and reserves largely involved displacement of people for national interests but resulted in significant negative social, cultural and economic effects. There were no clear linkages between the parks and reserves, and local land use plans and economies. Local people had little place in this vision of conservation (Adams and Hulme, 2001) and were regarded as a threat to the wildlife (Mackenzie, 1988).The creation of national parks in North America was premised on sensitization of a majority of the population as well as by a population whose basic needs was met to a fairly high level (Lelo, 1994). This was not the case in Africa. The legal decrees setting aside land for conservation in Africa polarized local communities and governments

(Pearl, 1994). Moreover, wildlife conservation policies were dominated by an underlying assumption about the separation of nature from people (Lelo, 1994).

Although the establishment of national parks was central to efforts to conserve the natural environment, many questions have been raised in recent years about their absolute value to society (Bergin, 1995). Over the years, the social and economic prosperity of people neighbouring the protected areas has been on the decline resulting in people's inability to provide for themselves the basic needs. Quoting a report from the Central Bureau of Statistics (Daily Nation of 22nd June, 2004) reported that 40-60% of people living around wildlife conservation and dispersal areas in Kenya lived below the poverty line. Many residents of Maasai Mara region in Kenya considered wildlife as an awesome burden to them given that they did not benefit from its conservation, and they also felt that the government was putting the needs of wildlife before theirs (Omondi, 1994).

In a survey of farmers living around Ol Donyo Sabuk National Park in Kenya, Lelo (1994) reported that 94% of them considered that wildlife from the park was the greatest disadvantage to them. Interestingly, Lelo (1994) reported that when he posed the question what benefits the farmers derived from the park only 25% of them said the park was an important watershed for the community. When he posed the same question and replaced the word park with hill, 90% of the farmers cited the springs from the hill an important water sources. This indicated the resentment the people had for the national park concept. The people visualized the hill as being of much benefit to them compared to the park. Ironically, the national park encompasses the hill.

A perception that governments are more concerned with protection of wildlife than with the needs of people results in uneasy relationships between communities and protected area staff. In some instances, the frustrations of the communities result in acts of revenge directed at habitats or animals. In Tanzania, local community resentment and antagonistic feelings towards protected 11areas, and conservation policies culminated in various forms of local resistance that included illegal hunting and natural resources extraction (Neumann 1998, Haslerig, 2000). The omission of local people's livelihood needs from the national park concept was costly to both the wildlife and the surrounding communities for parks are

surrounded by hostile [human] populations, and wildlife is gradually being squeezed into the limits of the parks (Lelo, 1994). Lelo (1994) further observed that people living around Ol Donyo Sabuk National Park in Kenya illegally crossed into the park to collect wild fruits, medicinal plants, thatch grass and posts, water, firewood, graze, and to perform traditional religious rites such as offering sacrifices at shrines inside the park. Protected areas are now forced to address a range of social objectives, namely, rural poverty, gender inequality, plight of indigenous people, market failures, economic and social injustices (Haslerig, 2000). Pearl (1994) argued that in practicing conservation in Papua New Guinea, benefits must accrue to local people or they (people) will choose another option for the use of their land. Lelo (1994) observed that the long term conservation of Ol Donyo Sabuk National Park in Kenya depended on the establishment of linkages between the park management and local people in a manner that would in addition to conserving the park's resources ensure that the social and economic needs of the park adjacent people were addressed.

The management of wildlife cannot be separated from the control of its benefits and costs (Metcalfe, 1994). As a result, the 'biocentric' concept to conservation (Adams and Hulme, 2001) also referred to as 'fortress' conservation (Bergin 1998, Haslerig 2000, Adams and Hulme, 2001) is getting increasingly challenged by an 'anthropocentric' concept to conservation (Adams and Hulme, 2001) that is underpinned by the need to involve and allow active participation of local people in the planning and decision making in conservation as well as in receiving benefits from conservation. This relatively new approach to conservation seeks to integrate the social, economic, cultural and development needs of indigenous people with conservation. The 'anthropocentric' approach to conservation is based on the premise that if local people participate in wildlife management and benefit from this participation, then a situation will arise whereby wildlife is conserved at the same time as community welfare improves. The attempts to redress the protectionist approach to conservation have collectively been referred to as community conservation.

Western and Wright (1994) described community-based conservation as a reversal of top-down, centre-driven conservation by focusing on the people who bear the costs of conservation and that it included natural resources or biodiversity protection by, for and with

the local people. Bergin (1995) defined community conservation as a strategy for the attainment of conservation objectives, which is based on the inclusion, rather than exclusion, of local peoples' needs and aspirations. Haslerig (2000) stated that community based conservation called for community participation, local decision-making, and equitable means of sharing economic, social, cultural, or ecological benefits from protected areas. Adams and Hulme (2001) defined community conservation as those principles and practices that argue that conservation goals should be pursued by strategies that emphasize the role of local residents in decision making about natural resources. Metcalfe (1994) recognized the need for integrating conservation with development so as to harmonize the needs of rural people with those of ecosystems as the basis for community based-conservation.

This broad sharing of benefits associated with the presence of wildlife is an approach to dealing with human-wildlife conflict (Muruthi, 2005). But Emerton (2001) opined that whether or not communities have economic incentives to conserve wildlife, and whether or not they are economically better of in the presence of wildlife, goes beyond ensuring that a proportion of wildlife revenues are returned to them as broad development or social infrastructure. She argued that the form in which benefits accrue to communities rarely provided subsistence, income or secure livelihoods and thus may not generate incentives for community conservation. Benefits from wildlife conservation should ensure that communities are better off in livelihood terms with than without wildlife. A study by Wambuguh (1998) in Laikipia District of Kenya indicated that even with a fully developed wildlife utilization program, it was doubtful that the level of wildlife benefits would ever exceed the cost landowners endured as a result of wildlife in the County.

However, published accounts of community conservation indicate that it embraces a wide spectrum of activities that are dictated by land tenure, land ownership, policies and legislation, potential and actual benefits, opportunity costs of conservation, authority, responsibilities, cohesion, demarcation, legitimacy, resilience and active participation by all players among other considerations (Metcalfe 1994, Western 1994. Western and Wright 1994, Little 1994, Pearl 1994, Bergin 1995, Seno 1998, Haslerig 2000, Hulme and Murphree 2001, Adams and Hulme 2001, Barrow and Murphree 2001). But Bergin (1995) cautioned

that true community conservation is rare and the term is frequently misapplied and he opined that community-based conservation is one type of community conservation in which natural resources are owned and sustainably managed by a local community or institutions. Emerton (2001) also gave a cautionary note that the majority of wildlife conservation activities implemented over recent years in east and southern Africa were at least nominally community based, aiming to overcome inequities in wildlife benefit distribution. While Neumann (1998) observed that community conservation has in some instances served to extend state control over resources. Lelo (1994) commented that there was hardly any government that would allow community development projects to be carried out without some form of government involvement. Indeed, Wambuguh (1998) observed that in no country has the government fully relinquished its responsibilities for wildlife to other authorities.

According to Emerton (1999), community-oriented approaches to wildlife conservation usually have a strong economic rationale. They are typically based on the premise that if local people participate in wildlife management and economically benefit from this participation, then a "win-win" situation will arise whereby wildlife is conserved at the same time as community welfare improves. While most community conservation activities have the ultimate goal of maintaining wildlife populations, they simultaneously aim to improve the socio-economic status of human communities in wildlife areas.

As Child (1995) pointed out, over the last four decades ago the realization dawned that the real threat to wildlife was not the illegal or commercial hunting, but wildlife's inability to compete economically with alternative uses of the land. It was being replaced significantly by agriculture, even in areas where one would expect a diverse and robust spectrum of indigenous animals to have a comparative advantage. Thus began a search for solutions that in many ways brought it back to incept underlying the ancient protected areas-that wildlife and natural resource must satisfy the community needs.

During this period, different approaches have provided the basis for the interventions to conserve wildlife. From the 1950s-80s the dominant approach was to create or revitalize national parks and other protected areas as the basis for conserving declining numbers of

wildlife species. Recently termed “fortress” conservation by Adams and Hulme (1998), these areas were established with the expectation that enhanced park management would improve wildlife conservation and assure sustainability. Nevertheless, the number of many charismatic species both within and outside the designated protected area continued to decline. A key cause can be traced to the exclusion of important stakeholders such as pastoralists, and agro-pastoralists, who live in, or near, these protected areas, from customary sources of livelihoods assets particularly land and water. Many of these local people withheld their support for this initiative, and some went further viewing wildlife as legitimate quarry for poaching and /or a threat to be eliminated (Coupe, et al., 2002).

Brown (1998) observed that this failure of fortress conservation to achieve its objectives has resulted in the institutionalization over the last decade of a counter-narrative, community conservation. Conservation practitioners now link wildlife conservation with sustainable development using participation as the new driving force to give beneficiaries (often communities rather than individuals) a greater opportunity to voice their preferences, needs and concerns about initiatives.

Most conservationists are now convinced that if wildlife resource is to survive outside the protected areas, local communities must be able to profit from wildlife and have a much greater say in management decisions (Getz et al., 1999; Hulme and Murphree, 1999). These community-based approaches are based on the principle that for wildlife to survive local people must be able to profit from and manage the animals living around them as a form of land use, taking the initiative in conserving the resource out of their own economic interest (Child, 1995; Rihoy, 1995; Western and Wright, 1994). While this more grassroots and decentralized approach has considerable potential for better-reconciling wildlife conservation with human needs and economic realities, it nevertheless involves complex ecological, economic, cultural, and political factors and rarely leads to easy answers.

Over the years, Amboseli has been a focus of research looking at a range of issues within the ecosystem that may be relevant but not specifically aimed at examining the aspects of community needs and aspiration with regard to wildlife conservation within this region. However, the studies do not provide a sustainable guide on practical wildlife conservation in

Amboseli Ecosystem which will ensure stable wildlife populations alongside other competing land uses.

While parks and protected areas have been the traditional approach to conservation, many protected areas worldwide are rapidly becoming "Islands" as the wild lands around them are converted to alternative, often incompatible, uses in the face of relentless pressures from the expanding scale of human activities outside the protected areas (Western, 1994). This is the case with Amboseli. The African continent is specifically most affected by conflicts between people and wildlife often related to competition for land due to the ever increasing human populations which has led to increased pressure on marginal land around protected areas such that the migratory corridors and dispersals areas are being constrained (Wilcove, 1998). Conservation thus requires a perspective that stretches well beyond the boundaries of the parks and involves national policies as well as programs affecting rural communities which has not been emphasized by many of the studies done within the Amboseli Ecosystem.

Wildlife protected areas in the Amboseli ecosystem such as Amboseli National Park, Kimana Wildlife Sanctuary and Selengei Conservation Area are all surrounded by human activities such as permanent and semi-permanent settlements, electric fences, agricultural plots and burgeoning commercial centers (Harvey et al, 2007). Irrigated agriculture, often done up to the edge of watercourses, invariably removes all riverine vegetation to make room for crops.. As agriculture uses up more of the water in the dispersal areas, the land becomes less viable for wildlife use. This is occurring along virtually all the major rivers and swamps in the ecosystem, such as the Nolturesh and Selengei rivers and the Kimana, Namelok, and Olng'arua le Nger swamps. According to Wishitemi and Okello (2003), fencing of the swamp areas of Namelok and Kimana to prevent elephants in particular from destroying crops displaces elephants and other wildlife species from their traditional grazing areas, blocks their dispersion and denies them access to water. Despite this, land use changes in the ecosystems resulting into insularization of the Park warrants sustaining of the surrounding community's rights and livelihoods in support of wildlife conservation.

Previous studies done have not been anchored within the premise of Kenya's vision 2030 which hinges on three pillars of economic, social and cultural diversity. Biodiversity

resources and the associated processes support sectors such as energy, food, fibers, drinks, medicines, fishery and agriculture among other resources. As such it has been identified as one of the important resources in attaining this vision**.** Biodiversity also forms the basis for national and regional tourism. For example, the faunal component contributes substantially to Kenya's national economy; with wildlife being the single most important attraction for tourists contributing 75% of the gross tourism earnings - largest sources of foreign exchange earnings, 5% of total GDP and 10% of total formal sector employment (GOK, 2007, Norton-Griffiths, 1998). Income from tourism related activities has continued to be a reliable source of revenue for both the central and local Government.

Over the years, despite its small size Amboseli national park has come to be one of the top three visited parks in the Kenya National Park system, along Tsavo and Lake Nakuru. The 80-100,000visitors a year make Amboseli a major contributor to foreign exchange earnings. In 2012, Amboseli grossed some Ksh.935 million in gate takings (KWS Data Base, 2012). Tourism earnings has increased progressively since 2004 and generated Ksh 73.7 billion in 2010 which constitutes 11% of the GDP and supports 18% of all wage employment (GOK, 2007). Kenya mainly exploits her biodiversity through primary industry including food, tourism and ecosystem services. It supports many livelihoods and lifestyles as it provides genetic reserves and sustains ecosystems upon which the said livelihoods and lifestyles depend.

Despite the identified economic significance of the Amboseli ecosystem, the displacement occasioned by erection of electric fences to deter elephants and other wildlife species from their traditional grazing areas warrants adoption of other land use systems in the region compatible with wildlife conservation which is the motivation for this study.

2.3 Wildlife Conservation and Land Tenure in Amboseli

Land ownership and resource access are critical issues that determine use of natural resources and, therefore, their conservation. Communal lands are administered and managed by an elected leadership over a period of time, and are mandated to grant temporary ownership and user rights for members on diversity of plant, water and land resources. They also regulate human settlement and movement in communal lands, and ensure free access to pasture and

water for all members in various grazing blocks and areas appropriately for different seasons, especially the critical dry season.

Wildlife and other natural resources are often unharmed and allowed to share the land with people and their livestock. This has been the case for most pastoral communally-owned lands in Kenya for ages, but increasing human population and changing land uses is increasing competition and making harmonious co-existence challenging. Group ranches which have been communally owned are now also in the process of sub-dividing land and reverting to individual ownership of land. This mosaic of land ownership regimes and competition for resources is a leading challenge to environmental conservation and eradication of poverty for the resource-dependent rural communities.

The land tenure system operating in the area has changed several times since independence. First, in the late 1960s, Kenyan Government's policy was to promote the formation of group ranches. For the first time this gave groups of pastoralist people joint freehold title to large parcels of land. The intention was that it would be collectively managed for the benefit of all the group ranch members, although livestock holdings remained private (Kiyiapi et al, 2005). The local Maasai communities eagerly embraced the group ranch approach, seeing it as a means of preventing further encroachment on their traditional land. Acquiring legal title also meant they had a tangible asset against which they could borrow to raise funds to improve the ranch infrastructure, such as drilling bore holes or building cattle dips.

Communal lands are administered and managed by an elected leadership over a period of time, and are mandated to grant temporary ownership and user rights for members on diversity of plant, water and land resources. They also regulate human settlement and movement in communal lands, and ensure free access to pasture and water for all members in various grazing blocks and areas appropriately for different seasons, especially the critical dry season. Wildlife is allowed to share the land with people and their livestock. This has been the case for most pastoral communally-owned lands in Kenya for ages, but increasing human population and changing land uses is increasing competition and making harmonious co-existence challenging. Group ranches which have been communally owned are now in the process of sub-dividing land and reverting to individual ownership of land. This mixture of

land ownership regimes and competition for resources is a leading challenge to environmental conservation and eradication of poverty for the resource-dependent rural communities.

However, the group ranch system also brought with it real problems as the members struggled to address the thorny, apparently intractable, issue of equitable benefit sharing. All too often powerful elites emerged within the group ranches who came to dominate decision making and grabbed the benefits for themselves. There followed an increasing demand to subdivide the group ranches and allocate individuals with title to the resulting relatively small parcels of land. Initially the intention in the Amboseli/ Tsavo area was to confine sub-division to the wetter parts, such as those higher up the slope, that were best suited to settled farming, but eventually sub-division was extended to include the entire group ranch, including the dry rangeland.

The Maasai of the Amboseli area live in communally-owned group ranches established in the early 1960s to discourage loss of pastoral tribal lands (Galaty, 1992; Fratkin, 1994). There are six of these group ranches (Mbirikani, Kuku, Kimana, Eselenkei, Ololorashi-Olgulului, and Rombo) where local communities live and work. These group ranches lie in a dispersal area between Tsavo and Chyulu national parks, Amboseli National Park, Private and Community Wildlife Sanctuaries, and represent one of the major remaining wildlife conservation blocks in Kenya. However, the traditional Group Ranch system is breaking down through adjudication and subdivision. Irrigated agriculture has virtually gained stronghold in swampy areas in the ecosystem and rain-fed agriculture is marching down the slopes of Kilimanjaro into important seasonal wildlife habitat. Seno and Shaw (2002) adds that water resources are being heavily used, diverted or polluted in major springs and swamps. In general, there is virtually no planning and management control to what's going on the ecosystem, indeed in most public lands across the country.

Subdivision is becoming a key topic of discussion as Maasai demand land security as well as equitable land use and benefit distribution, which many feel are absent in the group ranch system. However, if subdivision occurs, it is likely that the individual parcels of land will

support an insufficient number of livestock for a family. It is estimated that across the group ranches, each member would receive 1- 2.5 hectares of irrigated land and 20-60 ha of grazing land (AWF, 2005). Additionally, as the population increases, parcel size per member decreases. Subdivision threatens the sustainability of pastoralism as well as the Maasai lifestyle by destroying the communal livestock management strategies traditionally utilized by the Maasai.

2.4 Wildlife Conservation and Land Use Systems in Amboseli

Recognizing the threats posed to community livelihoods and their natural resources as a result of changes in land tenure and land use in the Amboseli Ecosystem, and in an effort to secure wildlife habitat while allowing the community members to practice sustainable land use activities, some of the land owners where land has been subdivided are pulling together to combine their land parcels to community conservancies (Western and Manzolillo-Nightingale, 2006). With the assistance from KWS and other NGOs, some are entering into lease agreements to have their land managed as one entity and get financial returns from ecotourism activities. Notable among those who have pooled land together is in Kimana Tikondo group ranch where three community conservancies – Osupuko, Nailepu and Kilitome have been formed and management structures put in place. This land is situated in the wildlife corridor between Amboseli and Kimana Community Wildlife Sanctuary, onwards to Tsavo-Chyulu National Parks.

Pastoralism is the traditional land use within the group ranch. However, many residents have been forced to diversify as a result of significant loss of cattle during drought periods. The viability of pastoralism as a livelihood is further threatened by imminent subdivision. Pastoralism of the semi-nomadic has been the land use of choice for hundreds of years in the region (Campbell et al., 2003). Emerging land use activities in the ecosystem, whether agriculture- or wildlife-based, will have to compete not only economically, but culturally and spiritually with ‘having herds’. For wildlife to have a sustainable future in Amboseli, two ‘fronts’ of potential conflict with pastoralism have to be addressed urgently. One, the economic front, squarely rests on the issue of distribution of benefits from wildlife. The Maasai quite reasonably ask, “Why should we tolerate the presence of wildlife on our lands if

only a small portion of the benefits are going to only a few of us?" The benefits, of course, range from short term cash in hand to longer term development of the region and alleviation of poverty. The other arena has to do with day to day competition for essentials particularly pasture, water and living space in addition to conflicts through loss of human life, livestock predation and property damage.

The group ranches were traditionally used for pastoralism with a very limited amount of agriculture around the wetter margins. In recent years, agriculture on the group ranches has increased, as many Maasai are practicing agro-pastoralism, employing non- Maasai to cultivate their land. Landowners also lease land to or cost-share with non- Maasai. Most crops are irrigated, and water is often diverted from rivers and swamps. This causes competition for scarce water resources, another result is that many Maasai become more sedentary, rather than migrating with their livestock. Agricultural expansion has also intensified human-wildlife conflict as animals (primarily zebra and elephants) destroy crops. Additionally, the government has encouraged the development of market towns in an attempt to incorporate the Maasai community into the national economy. The blossoming of these markets, such as Kimana, has been poorly planned and has had a negative environmental impact through poor waste management (especially plastic bag littering) and increased energy demand (charcoal from acacia trees is the main fuel source).

Ntiati (2002) argued that despite the subdivisions, the ecosystem still has a high potential for tourism. There are a number of highly successful enterprises that are generating significant revenues for Group Ranch members and providing important centers of conservation away from the Core of Amboseli National Park. Communities gain predominantly from tourism activities both directly and indirectly. Tourism in the area generates the bulk of employment with an estimated 10,000 people being employed by the lodges and camp sites. Of these, 40% of the employees are drawn from the local community. The lodges and camp sites that dot the ecosystem thrive because of the wildlife conservation initiatives in the Amboseli National Park and the surrounding group ranches. There is therefore a strong link between tourism and conservation in the area. Loss of wildlife may directly affect tourism activities in the area. The changing land uses in the ecosystem are attributable to various factors and they

include population growth, land use policy changes, as well as cultural changes of the Maasai community living in the region.

Agriculture is expanding in the region due to a number of political and economic reasons. Traditionally, the Maasai, whose pastoral lifestyle is very compatible with wildlife conservation, inhabit the arid and semi-arid lands (ASALs) of southern Kenya. However, seizure of grazing land in the 1940s by the government for conservation areas has legally restricted the Maasai from using these areas to graze and water their livestock, fueling negative attitudes towards wildlife conservation (Akama, 1998; Sindiga, 1995). The Maasai were forced to relocate into the dispersal areas where natural resources were lacking (Seno and Shaw, 2002). In the 1960s, the government created group ranches in attempt to replace nomadic pastoralism with a sedentary agricultural lifestyle and to salvage the remaining natural resources for the Maasai (Campbell et al, 2000, 2003).

Land tenure is further fueling the conversion to agriculture as the increase in subdivision and privatization of land makes access to communal grazing lands extremely difficult (Seno and Shaw, 2002). In an attempt to generate more food, many Maasai have adopted subsistence farming in addition to pastoralism, creating an agro-pastoral lifestyle (Thompson and Homewood, 2002). People have begun to cultivate for economic gain from local markets such as Kimana and Loitokitok markets, while others travel as far as Nairobi and Mombasa to generate incomes. It was estimated that 71% of all herders in the Kajiado district have attempted crop cultivation (Campbell et al., 2000, 2003; Okello, 2005a; Sindiga, 1995). Agriculture is an income-generating activity that is still possible in subdivided land and, consequently, has become extremely popular in the Amboseli ecosystem. Pastoralism is the traditional land use within the group ranch; however, many residents have been forced to diversify as a result of significant loss of cattle in the severe drought in 2000. The viability of pastoralism as a livelihood is further threatened by imminent subdivision.

Tourism development in the Amboseli Ecosystem has, and continues to play an important role in the socio-economic development of the local people through generating revenues and employment. Wildlife based tourism has been adopted by some land owners as an alternative land use option through the establishment of sanctuaries and leasing of concession areas to

private investors. Nevertheless, tourism derived benefits have not been distributed among stakeholders in a manner commensurate with the costs of tolerating wildlife. Most of the leases and tenancy agreements of the lodges, campsites, and tourist enterprises outside the park have been poorly negotiated and prepared, with the result that they are in favour of the lessee rather than the landowners. Since a viable and sustainable wildlife tourism sector depends primarily on maintaining connectivity between the Park and adjacent ranches to allow wildlife to access forage, it is vital that local communities receive tangible benefits for them to continue supporting wildlife tourism.

The previous management plan for the Amboseli Ecosystem covered the period 1991-1996. The plan mainly focused on the management of the Amboseli National Park, but it also recognized the dependence of the park on the larger dispersal area. In recognizing this interdependence, the management plan defined a strategy whose aim was to win cooperation and participation of the park adjacent landowners. The plan implementation strategy, however, failed to put in place a sustainable resource management structure to secure the ecological integrity of the park and critical wildlife dispersal areas. As a result, the Amboseli National Park and the wider Amboseli Ecosystem have continued to face many threats, both internal and external.

The current management (Plan 2008-2018) developed and approved in 2009 aimed to define the principles and strategies for creating, implementing and managing a sustainable future for the Amboseli Ecosystem by addressing wildlife conservation and management issues in the entire ecosystem. This 10-year (2008-2018) management plan for the Amboseli Ecosystem (AE) is yet to be operationalized when funding for development programmes is secured. Planning is an issue which needs to be addressed within the group ranch as tourism facilities require water and resources and can have a negative environmental impact if waste is not properly managed. It is hoped that the creation of the conservation areas will increase the attractiveness of the group ranches to tourists; however, additional tourism development needs to be well-planned so as to provide maximum benefit to the community while minimizing environmental impact.

2.5 Conservation, Benefit Sharing and Community Rights

According to Springer, Campese and Painter (2011), rights of indigenous people are often particularly relevant for conservation and sustainable use of natural resources, due to the frequent overlap of high biodiversity areas and indigenous lands, and the vulnerability of natural resources-dependent customary livelihoods to changes in access or use. Indigenous peoples' tradition ecological knowledge, traditional system control, use and management of lands and resources, and traditional institutions for self governance also contribute substantially to conservation.

Springer, Campese and Painter (2011) further noted that indigenous rights also relate to rights to control and management of lands and resources through customary institutions and laws; rights to development and equal benefit sharing including to determine the development or use priorities and strategies on their lands, territories and resources and to benefit equitably from conservation and sustainable use of such areas; rights to traditional knowledge and indigenous heritage; redress for deprivation peoples' means of subsistence and development, and for land taken without free, prior, informed consent.

While a myriad of community rights related issues can arise in conservation, there are some particularly common and/or challenging issues that call for attention. These include: participation in decision making; free, prior, informed consent; tenure security, especially conflicts between customary and statutory tenure. Other issues are cultural rights and bio-cultural diversity; sustainable development and equitable benefit –sharing; displacement and restrictions on resource access; and law enforcement. Review of various studies from a conservation perspective don't provide a practical framework for engaging local communities at a policy level to inform and advise on measures to increase participation in decision-making regarding conservation matters and enhanced livelihoods which this study has made efforts to address.

It is thus necessary to examine relationships between rural resource users and conservation. Communities will be motivated to conserve wildlife if the benefits exceed the perceived costs. Policies which reduce benefits and increase costs create disincentives to conserve wildlife. Communities which feel that they do not derive any benefits from wildlife on their

land have little incentive to conserve that wildlife (Irandu, 2003). A strategy for addressing the economic incentives and disincentives for community based wildlife conservation starts with an understanding of what motivates to do what they do.

2.6 Policy and Legal Implications on Community Participation in Conservation

Making conservation policy involves making decisions about the relationship between a society and natural resources on which it depends on for a livelihood. Policies can be legislated into laws, which govern protection, management and use of natural resources. Wildlife conservation, construed as preservation of wildlife, was not known in the pre-colonial African societies. Nomsa (1992) observed that Conservation concerns were however, introduced into African laws as early as 1990's as a result of declining wildlife populations. The most notable international agreement applicable to conservation in Africa is the 1933 convention Relative to the Preservation of Fauna and Flora in their natural state signed by colonial powers and premised on setting up conservation areas.

In the late 1960s, Kenyan Government's policy was to promote the formation of group ranches. This gave groups of pastoralist's joint freehold title to large parcels of land (Okello, Seno and Wishitemi, 2003). They noted that the intention was that it would be collectively managed for the benefit of all the group ranch members, although livestock holdings remained private. The local Maasai communities eagerly embraced the group ranch approach, seeing it as a means of preventing further encroachment on their traditional land. Ntiati (2002) added that acquiring legal title also meant they had a tangible asset against which they could borrow to raise funds to improve the ranch infrastructure. However, the group ranch system brought with it real problems as the members struggled to address the issue of equitable benefit sharing.

The conservation and management of wildlife in Kenya is governed by the wildlife policy contained in the sessional paper No 3 of 1975, 'Statement of the Future of Wildlife Management Policy in Kenya' (Republic of Kenya 1975). It spells out a modified approach to 'fortress' conservation of wildlife through policies that justify a new integrated approach to wildlife conservation based on local participation in all forms of wildlife management and utilization. This is an important shift in wildlife conservation policy that is intended to

harmonize conservation with economic and social development. It presents an approach to conservation that accepts wildlife management as a legitimate form of land use in protected areas as well as in the dispersal areas. The policy recognized that wildlife needed space outside the protected area to flourish without intensive management and ecological impoverishment .It only envisioned that additional space for wildlife management would be secured from landowners willing to accommodate wildlife on the basis of their reaping the benefits. It failed to address mechanisms of benefit sharing and it never catered for the communities living with wildlife

The Kenya Wildlife Service is a state cooperation established by the Act of parliament, CAP 376, with a mandate for wildlife conservation and management in Kenya. The Act spells out the functions of the organization both within and outside protected areas. A key function is to establish linkages and gain support for wildlife conservation with stakeholders and communities co-existing with wildlife. A lot has been achieved through community mobilization, education and awareness creation and activities towards 'Reaching Out to the communities' since the establishment of KWS in 1990. However, with the Promulgation of The Constitution of Kenya and the new wildlife act 2013, the organization needs to re-examine its strategies in carrying out its key functions outside the protected area system. Without proper mechanisms of benefits accruing to land owners or communities living with wildlife, it would be difficult for KWS to seek solutions to conflicts arising between the demand for the wildlife conservation and the competing interests of the land owners and the local communities living within or near wildlife protected and dispersal areas.

Article 69(1) a, d, & h of The Constitution of Kenya, 2010 provides for the encouragement of public participation in the management, protection and conservation of the environment. The Constitution further provides that every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources for the benefit of the people of Kenya. Similarly article 69.2 of The Constitution of Kenya, 2010 provides for sustainable exploitation, utilization, management and conservation of the environment and natural resources. The Constitution of Kenya places the protection of wildlife on the government and Kenya's

Vision 2030 shows Tourism as a major vehicle in getting Kenya on to the Developed Countries path; and Wildlife is a Key player. Despite the provisions in the constitution, there is no proper mechanism and guidelines to enhance community participation in wildlife conservation. The Amboseli ecosystem has seen cases of antagonism between the local community with the government on conservation agenda leading to human wildlife conflicts resulting from spearing of predators in the region.

The Constitution of Kenya contains indirect wildlife protection provisions such as The Land Act (2012); The Agriculture, Fisheries and Food Authority Act (2013) and the Forests Act (2005) relevant in wildlife conservation and management. This is because wildlife found on agricultural land and forests is under the control of the Agriculture and Forests departments respectively. The Forests Act provides the legal framework for the conservation of forests. It governs the conservation, management, and utilization of forests and forest products. The killing of wild animals in a nature reserve is prohibited. Under the Agriculture Act, the Minister is authorized to make preservation rules that can play a crucial role in ensuring that wildlife on such land is conserved. It is noteworthy that good husbandry of agricultural land does not include adoption of tenets of wildlife conservation. There remains, however, the wider question of compatibility of settled agriculture as a land use with wildlife conservation.

2.7 Wildlife Conservation outside Protected Areas

From the available literature, a number of issues stand clear. First, protected area systems however vital they may be, are not sufficient in themselves to conserve the Kenya's large migratory herds or biodiversity. It is also clear that land use change is a major driver of habitat modification and can have important implications for the distribution of species and therefore entire ecosystems. Amboseli ecosystem is renowned for its abundance and diversity of wildlife; however, the Amboseli National Park is too small, fragmented and not viable to maintain the current wildlife populations which rely on larger ecosystem than protected within the national park.

The threats against wildlife in Amboseli ecosystem continue to escalate due to an increase in habitat fragmentation, change in land use and human population pressure in areas outside the park. Loss of wildlife habitat outside the protected area should be halted to ensure: the

viability and large abundance and diversity of species; maintaining existing and provide additional new areas for the growing tourism industry to operate; and sufficient space to provide resilience to critical ecosystems as well as species as climate changes and climate variability poses new threats.

To secure or claim more space for wildlife conservation without compromising on the livelihood of the local population will entail a series of strategies that this study will attempt to explore. It is a fact that the existence and ecological integrity of the Amboseli ecosystem is increasingly threatened. To assure viability, it will be necessary to explore modalities for enhancing community participation in wildlife conservation by sustaining community rights and benefit sharing in the Amboseli ecosystem.

To contribute to long-term conservation goals, these projects must improve local livelihoods in the near term and thereby reduce levels of encroachment and conflict. Community development is valuable in its own right, and for reasons of fairness and justice, it might be of particular salience in areas where already poor communities suffer as a result of the proximity of nature reserves. Evidence from both theory and practice in development suggests that rights, capacity, and governance are critical to success. Sen (1999) provided a theoretical foundation for a focus on these variables by arguing that the essential indicator of human development is the extent to which substantive freedoms are expanded. A major challenge for contemporary conservation policies and practices is formulating workable compromises between wildlife conservation and the people who live with wildlife. This is always difficult because conflicts expand as human populations increase, and each situation has its own peculiar dimensions.

Various ecological, social, political and economic factors impinge on virtually all human-wildlife interactions, but the weight of each factor varies from one case to another. Thus, despite the attractive advantages of integrating conservation with human development, many obstacles remain. Currently, there are inadequate incentives to motivate communities and land owners to adopt land use practices that are compatible with wildlife conservation and management. Indeed, the situation is aggravated by the existence of incentives in other sectoral policies that distort land use decisions.

This study attempted to address the gaps in the knowledge base that needed to be addressed by researchers and practitioners to give communities the impetus to natural resource conservation taking cognizance that good governance and economic value derived from the presence of protected areas will give the communities the propensity to engage in CBC-PA (Community Based Conservation – Protected Areas). This will lead to the communities being empowered, becoming relevant and feeling that their rights as local communities have been respected.

2.8 Theoretical Framework

This study was informed by Social Exchange Theory as advanced by Blau (1964) when analyzing interactions between two parties by examining the costs and benefits to each. The key point of the theory is that it assumes the two parties are both giving and receiving items of value from each other. Under this theory, interactions are only likely to continue if both parties feel they are coming out of the exchange with more than they are giving up–that is, if there is a positive amount of profit for both parties involved.

The need to reciprocate for benefits received in order to continue receiving those serves as a "starting mechanism" of social interaction. Rewards and costs are important concepts that form the basis of most social exchange theories. Rewards are exchanged resources that bring pleasure and satisfaction, while costs are exchanged resources that are perceived as a loss or punishment. The social exchange framework applies to this study and is useful for understanding that the land owners in Amboseli ecosystem would benefit directly from leasing their land for biodiversity conservation and by way of reciprocity would forfeit all other rights to use the leased land for conservation only and not engage in other activities that are detrimental to their coexistence and provide space for wildlife conservation to thrive.

This theoretical orientation is reinforced by the General Systems Theory (GST) proposed in the 1936 by Bertalanffy which tends to view both economic and social elements on the one hand and ecological aspects on the other as interrelated. All these elements and aspects are in a continuous process evolving into a complex system. Wildlife conservation ecosystems tend to be complex and their planning requires the integration of all these components. Effective wildlife conservation programs involve an interface between the natural environment and

human aspects and may have some dysfunctional consequences on the intended beneficiaries if appropriate measures are not taken at all in the planning stages. The uses of these wildlife resources need to incorporate measures safeguarding them from the degrading consequences of human activities.

In the context of GST, a wildlife conservation program is made up of different parts that function in harmony to maintain the whole system. At the same time, the GST explains the working of conservation programs at the national and regional levels, and even the global level (the biosphere). Any disruption in any part of the system will eventually lead to disruption of the operation of the system. This theory when utilized in the planning and management of a wildlife conservation ecosystem takes into consideration the interrelatedness of the different components that wildlife conservation systems in Amboseli are made up of. This could only be done when a multidisciplinary team composed of government agencies; NGOs, CBO, as well as community representatives are involved in the wildlife conservation planning processes. The Maasai community living around Amboseli National Park will seek to experience a sense of reciprocation through their involvement in conservation activities to ensure that they receive reasonably equal returns for leasing or putting easements on their land for wildlife use only, while the conservation agencies will ensure that payment for easement and leases is sustained for the exchange to be beneficial.

2.9 Conceptual Framework

The framework conceptualized community participation in wildlife conservation as the **dependent variable**. It is evident from the literature that community participation in wildlife conservation depend on various factors such as recognition and respect for cultural values and indigenous knowledge; improved capacity, benefit sharing and self sustaining community livelihoods and rights; good policy and governance practices for wildlife conservation outside protected areas; and land tenure and land use systems compatible with wildlife conservation. For the purposes of this study, the factors that influence community participation in wildlife conservation were treated as the **independent variables**. The relationship is as shown in the Conceptual framework in Figure 2.1.

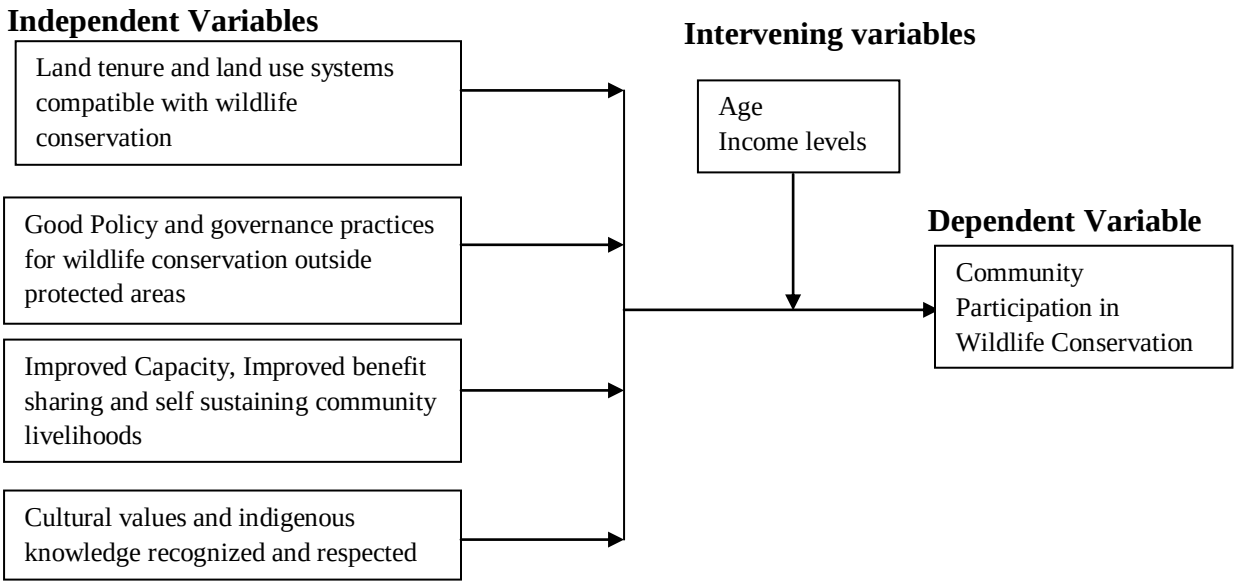

Figure 2.1 Conceptual Framework

There are four variables to long term success of community participation in wildlife conservation as shown in the conceptual framework Figure 2.1. Community entitlements with autonomy of management and decision making, good governance, good management capacity combined with incentives for conservation will probably result in strong community participation that ensures ownership of wildlife resource. For instance if communities living adjacent to conservation areas attach an intrinsic value to ecological conservation to their culture, this is bound to enhance their participation on wildlife conservation. These communities are likely to ensure conservation of the wildlife resource through cultural and social bonds, and traditional practices. In addition, to contribute to long-term conservation goals, conservation must improve local livelihoods in the near term and thereby reduce levels of encroachment into wildlife zones and conflict resulting from competition between humans and wildlife for space.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter aimed at describing the study areas, the research design and methodology used in this study. It contains a description of the study design, target population, sample design and size, data collection instruments and procedure as well as data analysis technique.

3.2 Research Design

This study was conducted through a cross sectional survey. This type of design gathered information from selected local community living in Kimana/Tikondo and Olgulului group ranches and it was useful in assessing practices, attitudes, knowledge and beliefs of the community in relation to wildlife conservation in the area. The results from this survey gave an indication of the extent to which community participated in wildlife conservation at this particular point in time, and provided a basis for designing appropriate measures to enhance community participation in wildlife conservation.

3.3 Study Area

The Amboseli ecosystem is an area of 8,000 square kilometer area that straddles the Kenya-Tanzania boundary and comprise of six group ranches namely; Kimana/Tikondo, Olgulului/Ololarrashi, Selengei, Mbirikani, Kuku and Rombo. This study was carried out for a period of three months in two (2) group ranches namely; Olgulului /Ololarrashi and Kimana which are directly adjacent to the park. The group ranches are part of the Tsavo-Amboseli ecosystem and are situated between Amboseli National Park, Tsavo West National Park and the Chyulu Hills. These group ranches create wildlife corridors and dispersal areas that connect the park islands, allowing the parks to support large populations of seasonally migratory mammals (Western, 1975). The group ranches also support large populations of wildlife on their own. Kimana and Ololarrashi/Olgulului group ranches are situated within the ecosystem as shown in the map Figure 3.

All the six (6) Group Ranches are owned by Maasai who have been pastoralists and relied primarily on cattle, goats and sheep for their economic, social and political interactions.

Much of the landscape is arid and semiarid and rainfall is scarce and unpredictable. Here livestock herding was an efficient form of land use.

Livestock keeping for beef production is the dominant socio-cultural and economic activity in this ecosystem and centers around cattle, goats and sheep. This is at both subsistence and commercial level. Crop farming is becoming an economic activity in the dispersal area particularly in Eastern part of ANP where irrigated agriculture is practiced along the swamps and rivers, Commercial agriculture is done in a very limited way along the slopes of Kilimanjaro (Gichohi, 2000). Some members of the local Maasai community are changing lifestyles from nomadic pastoralism to sedentary subsistence mixed farming. The diversity of the ecosystem enables a wide variety of natural resource utilization systems. The major activities are correlated to the area's geographical location or geological characteristics.

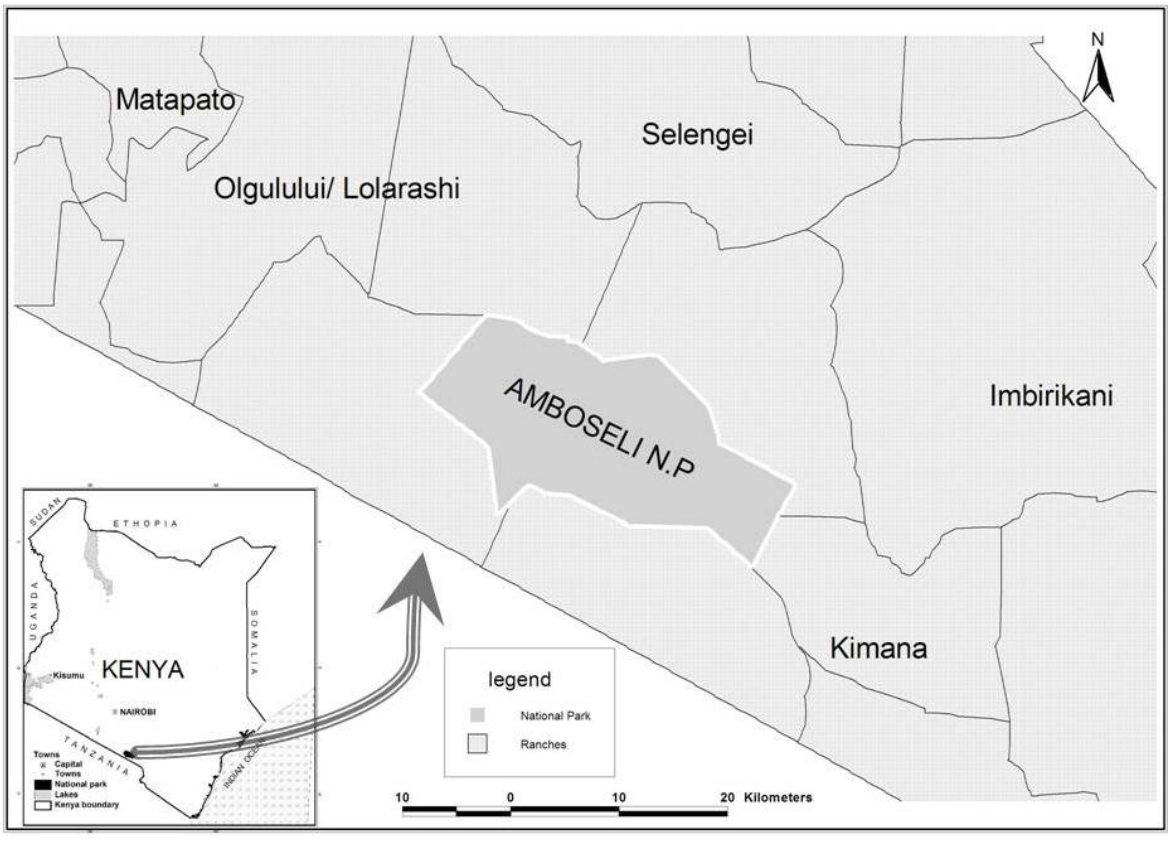

Figure 3.1: Map of the Study Area: Source: Amboseli Ecosystem Management Plan 2008-2018

3.4 Target Population

The population of this study consisted of all households in Kimana/ Tikondo and Olgulului/Ololarrashi group ranches. According to the census report (2009), there were 1,342 households. Olgulului/Ololarrashi group ranch had a population of 11,500 registered members and 1,250 households. For Kimana/ Tikondo group ranch, the report indicates that the group ranch had 843 registered members and 92 households. For ease of analysis, the unit of analysis was the household head from each of the two group ranches.

3.5 Sampling Procedure and Sample Size

According to Kothari (1999), an optimum sample is one that fulfils the requirements of efficiency, representativeness, reliability and flexibility. This sample should be in the range of 10-30% of the total population. For this study, a representative sample of 10% was drawn which translates into 134 households randomly selected. Interview participants were purposively selected based on place of residence and only adult men, ranging in age from 26 to 68 years, were chosen to participate as they traditionally make the land use decisions.

3.6 Methods of Data Collection

This study used a semi structured interviews with the household heads from each of the two group ranches. The interview was conducted with the help of a local research assistant and translator fluent in the local language. The interview was either conducted in English or in the traditional Maa language depending on the participant's preference and comfort level. For the structured questions, respondents were subjected to a ten point likert scale on which they rated their perceptions on the given variables. Four Focus group discussions of ten people each were used to supplement and verify the data gathered from the interviews.

3.7 Data Analysis

Data collected from different sources was summarized and presented using frequency tables and charts. For the descriptive data, descriptive statistics were used for analysis utilizing frequency distributions, percentages and mean scores. Statistical Package for Social Sciences (SPSS) computer technique was used to analyze the data. A summary of data and analysis types adopted for this study is shown in Table 3.1. Focus group discussions' results were presented using narratives and summarized in boxes.

Table 3.1: Data Analysis Schedule

Objective	Question	Data	Analysis
To examine the effect of land tenure and land use systems on community participation in wildlife conservation in the Amboseli ecosystem	What are the existing land tenure systems	Quantitative	Descriptive statistics
	Which land tenure systems are compatible with conservation	Quantitative	Descriptive and inferential statistics
	How do land tenure and land use systems affect community participation in wildlife conservation in Amboseli ecosystem	Quantitative	Descriptive and inferential statistics
To assess the implication of Wildlife policies and legal framework on community participation in wildlife conservation in the Amboseli ecosystem	What are the people's attitudes towards conservation	Quantitative	Descriptive statistics
	How has the polices affected the people's attitudes	Quantitative	Descriptive and inferential statistics
To identify incentives for enhanced community participation and securing more space for wildlife conservation in the Amboseli ecosystem	1. List of benefits accruing from wildlife conservation 2. List of measures	Quantitative	Descriptive statistics

3.8 Ethical Considerations

The study involved collection of data an interview guide and group discussions. It was therefore to obtain a research permit from the Kenya wildlife Service. To enhance research ethics, the researcher adhered to the principle of voluntary participation in which interview participants were not coerced into participating in this research. Prospective research participants were informed about the procedures and objectives for this research and gave their consent to participate. In addition, the researcher guaranteed participants confidentiality

in that they were assured that information would not be made available to anyone who is not directly involved in this study.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This study focused on the modalities for enhancing community participation in wildlife conservation in Amboseli Ecosystem. This chapter presents the profiles of respondents that formed this study. The frequencies, means, standard deviations are presented, interpreted and findings discussed as per the study objectives.

4.2 Results

In order for the study instrument to measure what it has to measure, pilot testing was done before the instrument was used in actual data collection. A sample questionnaire was given to twenty respondents who were involved in the study after which it was checked for completeness, ambiguity and language. Necessary adjustments were done before the actual data collection exercise. Prior to the survey, a critical review of the study instrument was done in comparison with the literature review was done to ensure that that semi structured interview schedule captured all the necessary facets to facilitate a precise understanding of community participation in wildlife conservation. This section presents the study findings.

4.2.1 Profile of Respondents

Out of the 134 target households, 100 were interviewed bringing this study's response rate to 75%. The interview schedule covered aspects of age, distance from Amboseli national park boundary, type of homestead, primary source of livelihood, sources of household income and the average annual household income.

Distribution of Respondents by Age

This study considered members of the Maasai community aged 26 years and above as its respondents. The results are presented in Table 4.1.

Table 4.1: Distribution by Age of the Respondents

Age Bracket	Frequency	Percent
26-45 Years	58	58
45-55 Years	27	27
55-65 Years	14	14
> 65 Years	1	1
Total	**100**	**100**

Source: Field data (2013)

Findings in Table 4.1 shows that persons aged 26-45 had the highest representation as they accounted for 58 percent of the total respondents. This age bracket was followed by those aged between 45-55 years with 27 percent while those aged between 55-65 years accounted for 14 percent of the total respondents surveyed in this study. In all, one percent of the respondents interviewed were over 65 years. In the Maasai community, as in any African community, age determines roles, duties and responsibilities. Legally and culturally, certain age groups are prohibited from engaging in certain activities or assuming certain responsibilities. For instance, persons under the age of 26 years are not considered capable of making sound mature decisions including land use patterns. It is from this stand point that this study considered persons aged 26 years and above as respondents. This implied that few persons aged over 55 years were still actively involved in land use decisions. This explains the weak representation of persons aged over 55 years in the study sample as active land use decisions are majorly common among persons aged between 24-55 years. Table 4.1 shows that 75 percent of the respondents were aged between 24-55 years thus confirming the fact that the age group was probably the most concerned with land use decisions in the ecosystem.

Distribution of Respondents by Distance from Park Boundary

Kimana and Olgulului group ranches are not independent of each other. The group ranches are part of the Tsavo-Amboseli ecosystem and are situated between Amboseli National Park, Tsavo West National Park and the Chyulu Hills. These group ranches create wildlife corridors and dispersal areas that connect the park islands. Thus a need to establish the distance of the households' home from the ANP boundary. In the interview schedule, the respondents were requested to indicate their distance from the park and they responded as shown in Table 4.2.

Table 4.2: Distribution of the Respondents by Distance from Park

Distance From Park Boundary	Frequency	Percent
< than 5 Km	38	38
5-10 Km	13	13
> 10 Km	49	49
Total	**100**	**100**

Source: Field data (2013)

As indicated in Table 4.2, 49 percent of the respondents live more than 10 kilometers from the park boundary with 38 percent living between less than 5 kilometers. This study showed high (49%) representation of persons living over 10 kilometers from the park boundary. It is worth noting that it is almost equal representation for persons living less than or more than 10 kilometers from the park boundary.

Distribution of Respondents by Type of Homestead

Land use decisions are not limited to age and distance from the park boundary only. The choice for homesteads was also noted as an important element in land use decisions in the Amboseli ecosystem. While some preferred residing in *manyattas*, others chose to live in permanent homesteads while others resided in semi-permanent homesteads. Table 4.3 provides information on type of homestead within the study area.

Table 4.3: Distribution of the Respondents by Type of Homestead

Type of homestead	Frequency	Percent
Manyattas	61	61
Permanent	26	26
Semi-permanent	13	13
Total	**100**	**100**

Source: Field data (2013)

Analysis shows that the majority, 61 percent of the respondents resided in *manyattas* with 26 percent residing in permanent homesteads while 13 percent resided in grass semi-permanent homesteads. The fact that 26 percent reside in permanent homesteads points to the fact that people have settled into historical wildlife areas and encroached onto wildlife corridors and migratory routes. The national park is therefore faced with serious human encroachment as depicted by permanent and semi-permanent settlements and mushrooming of commercial centers which have blocked dispersion of wildlife species from their traditional grazing areas.

It's also a pointer on the level of human encroachment, concentration and sedentarization of the local communities living adjacent to the park boundary, which threatens the future of pastoralism and wildlife in the in the strategic dispersal areas. With increase in human population outside the park, cases of human wildlife conflicts would rise and this would pose a big challenge to park authorities.

Distribution of Respondents by Sources of Household Income

Table 4.4 shows the different sources of household income.

Table 4.4: Distribution of the Respondents by Household Income Sources

Income Sources	Frequency N = 100	Percent
Pastoralism	34	34
Pastoralism, Farming & Ecotourism	29	29
Pastoralism & Ecotourism	19	19
Pastoralism & Farming	8	8
Ecotourism	4	4
Business	3	3
Farming	2	2
Farming & Ecotourism	1	1

Source: Field data (2013)

From Table 4.4, 90 percent of the respondents engage in pastoralism which is the traditional land use among the Maasai Community and the group ranches. However, many are diversifying into other forms of house hold income sources as a supplement to traditional nomadic pastoralism. Findings show that 53 percent of the respondents are engaged in ecotourism while 40 percent at least practice farming on their lands. However, from the analysis, the emerging land use activities in the ecosystem will have to compete not only economically, but culturally with having herds mainly comprising of cattle, goats and sheep.

Distribution of Respondents by Average Annual Household Income

Annual household income in these households ranged from Kshs. < 20,000 to Kshs. > 100,000. Distribution of respondents as per their annual household income is presented in Table 4.5.

Table 4.5: Distribution of the Respondents by Average Annual income

Average annual Income	Frequency	Percent
Kshs. < 20,000	17	17
Kshs. 20,000 - 50,000	35	35
Kshs. 50,000 - 100,000	25	25
Kshs. > 100,000	23	23
Total	**100**	**100**

Source: Field data (2013)

Table 4.5 shows that, 35 percent of the respondents said that their annual household income ranges between Kshs. 20,000 - 50,000 with 25 percent of them indicating that their annual household income ranges between Kshs. 50,000 - 100,000. Those who reported their annual household income to be more than Kshs. > 100,000 accounted for 23 percent of the respondents surveyed in this study. Analyzed jointly with results in Tale 4.4, this implies that pastoralism, which is the traditional land use among the Maasai Community and the group ranches is not a commercial venture but mostly practiced for cultural values and only a few of these heads are converted into cash explaining the low annual income levels in the households.

4.2.2 Community Participation in wildlife Conservation

The broad objective of this study was to examine the modalities for enhancing community participation in wildlife conservation in Amboseli Ecosystem. A ten point Likert scale was used to measure the extent to which the local community was involved in wildlife conservation in this ecosystem where 1-3 represented 'Low' and 4-7 'Moderate' and 8-10 'High'. Selection of the land use types for measurement was informed by both theoretical considerations and descriptions found in the literature.

The scores "Low" represented community participation in wildlife conservation to a "Low Extent" (LE), equivalent to 1 to 3.9 on the continuous Likert scale ($1 \leq LE < 3.9$). The scores of "Moderate" represented community participation in wildlife conservation to a "Moderate Extent" (ME). This was equivalent to 4.0 to 6.9 on the Likert scale ($4.0 \leq ME < 7.9$). The score "High" represented community participation in wildlife conservation to a "High Extent" (HE). This was equivalent to 8.0 to 10.0 on the Likert scale ($8.0 \leq LE < 10.0$). Aggregation of community participation in wildlife conservation was carried out to obtain statistics for

further analysis. A summary of the descriptive statistics for analysis of community participation in wildlife conservation in the Amboseli ecosystem is presented in Table 4.6.

Table 4.6: Community Participation in Wildlife Conservation

Land Use Type	Percentage				Mean Scores
	Low	Moderate	High	Total	
Community involvement in wildlife conservation in the ecosystem	68	29	3	**100**	3.1
Communities take initiative in conserving wildlife out of their own economic interest	38	49	23	**100**	4.9
Community involvement in preparation of General Management Plans for the ecosystem	70	28	2	**100**	2.4
CBO have the authority to manage wildlife on village land.	64	32	4	**100**	3.4
Community involvement in conservation education and awareness	29	61	10	**100**	4.9
Government supports formation of community ecosystem management committees	67	27	6	**100**	2.9
The local community participates in policy-making for wildlife conservation in the ecosystem	68	29	3	**100**	3.1
Average	**58**	**36**	**7**	**100**	**3.5**

Source: Field data (2013)

Overall, findings indicate that community participation in wildlife conservation in the Amboseli ecosystem is to a low extent with a composite mean score of 3.5 ($1 \leq LE < 3.9$) out of a possible 10. These findings show that 58 percent, 36 percent and 7 percent of the respondents asserted community participation in wildlife conservation in the Amboseli ecosystem to a low, moderate and high extent respectively.

Findings in Table 4.6 indicate that communities are involved in wildlife conservation in the ecosystem; communities are involved in preparation of General Management Plans for the

ecosystem; CBOs have the authority to manage wildlife on village land; Government supports formation of community ecosystem management committees and that the local community participates in policy-making for wildlife conservation in the ecosystem but to a low extent as the mean scores were within this range ($1 \leq LE < 3.9$) equivalent to 1 to 3.9 on the continuous Likert scale. It was established that communities take initiative in conserving wildlife out of their own economic interest and that communities are involved in conservation education and awareness but to a moderate extent as the mean scores were within this range ($4.0 \leq ME < 6.9$) equivalent to 4.0 to 7.9 on the Likert scale. This implies that most community needs and aspirations might have been ignored on developing conservation programmes which could lead to difficulties in enforcing conservation policies in the Amboseli ecosystem as the policies may not be respected by local community, illegal activities may become common and/or locals may be dissatisfied with management of the ecosystem.

4.2.3 Effect of land tenure and land use systems on community participation in wildlife conservation

The first specific objective of this study was to examine the effect of land tenure and land use systems on community participation in wildlife conservation in the Amboseli ecosystem. This section presents findings on this with a focus on land ownership, land use type, land subdivision, consequences of land subdivision on pastoralism, fencing, opinion on wildlife conservation and tourism, appropriateness of wildlife conservation in the region as well as the land use types compatible with wildlife conservation in wildlife conservation in the Amboseli ecosystem.

Land Ownership

The local Maasai communities embraced the group ranch approach, seeing it as a means of preventing further encroachment on their traditional land. However, the group ranch system brought with it problems as the members struggled to address the issue of equitable benefit sharing. Table 4.7 shows the form of land ownership within the study area.

Table 4.7: Form of Land Ownership

Land Ownership	Frequency	Percent
Individual	42	42
Communal	7	7
Group Ranch	50	50
Lease	1	1
Total	**100**	**100**

Source: Field data (2013)

As Table 4.7 shows, 50 percent of the respondents owned land collectively managed as a group ranch, with 42 percent owning it individually while 1 percent had leased it. A cross tabulation of land ownership in the ecosystem was done in relation to the communities' social economic aspects of age, average annual income and the income sources and the results were as presented in Tables 4.8, 4.9 and 4.10 respectively.

Table 4.8: Age Bracket and Form of Land Ownership

Age	Land Ownership				Total
	Individual	Communal	Group Ranch	Lease	
24-45 Years	22	6	29	1	58
45-55 Years	12	1	14	0	27
55-65 Years	8	0	6	0	14
> 65 Years	0	0	1	0	1
Total	**42**	**7**	**50**	**1**	**100**

Source: Field data (2013)

These findings show that persons aged 26-45 had the highest representation as they accounted for 58 percent of the total respondents. Analysis in Table 4.8 show that 29 percent of these respondents owned land collectively managed as a group ranch, with 22 percent owning it individually, 6 percent owning communally, while 1 percent had it on lease. From the Table, those aged between 45-55 years were 27 percent. Within this age bracket, 14 percent owned land collectively managed as a group ranch, 12 percent owned it individually while 1 percent owned it as a community holding. For those aged between 55-65 years, this group accounted for 14 percent of the total respondents surveyed in this study. Of this, 8 percent owned land individually while percent 6 percent owned it collectively managed as a group ranch. From this study, 1 percent of the respondents surveyed were over 65 years who owned land collectively managed as a group ranch.

Table 4.9: Average Annual Income and Form of Land Ownership

Average Annual Income	Land Ownership				Total
	Individual	Communal	Group Ranch	Lease	
Kshs. < 20,000	10	2	5	0	17
Kshs. 20,000 - 50,000	12	2	20	1	35
Kshs. 50,000 - 100,000	9	2	14	0	25
Kshs. > 100,000	11	1	11	0	23
Total	**42**	**7**	**50**	**1**	**100**

Source: Field data (2013)

Findings in Table 4.9 show that persons with an average annual income of between Ksh. 20,000 - 50,000 had the highest representation as they accounted for 35 percent of the total respondents. From Table 4.9 shows that 20 percent of these respondents owned land collectively managed as a group ranch, with 12 percent owning it individually, 2 percent owning communally, while 1 percent had it on lease.

From the table, those with an average annual income of between Ksh. 50,000 - 100,000 were 25 percent. Within this range, 14 percent owned land collectively managed as a group ranch, 9 percent owned it individually while percent 2 percent owned it as a community holding. For those with an average annual income of over Ksh. 100,000, this group accounted for 23 percent of the total respondents surveyed in this study. Of this, 11 percent owned land individually while percent 11 percent owned it collectively managed as a group ranch. From this study, those with an average annual income of between Ksh. 50,000 - 100,000 were 25 percent. Within this range, 14 percent owned land collectively managed as a group ranch, 9 percent owned it individually while percent 2 percent owned it as a community holding.

Table 4.10: Income Sources and Form of Land Ownership

Income Source	Land Ownership				Total
	Individual	Communal	Group Ranch	Lease	
Pastoralism	11	0	23	0	34
Farming	1	0	1	0	2
Ecotourism	1	0	3	0	4
Combination	20	2	7	0	29
Pastoralism & Farming	2	3	3	0	8
Pastoralism & Ecotourism	7	0	12	0	19
Business	0	1	1	1	3
Farming & Ecotourism	0	1	0	0	1
Total	**42**	**7**	**50**	**1**	**100**

Source: Field data (2013)

As seen in Table 4.10, 90 percent of the respondents engage in pastoralism which is the traditional land use among the Maasai Community and the group ranches. Findings show that 53 percent of the respondents are engaged in ecotourism while 40 percent at least practice farming on their lands. Analysis in this table reveals that most (45 percent) of those whose income source is pastoralism owned land collectively managed as a group ranch, 40 percent owning it individually, with 3 percent owning it as a community holding. While 29 percent of the respondents' source of income was from a combination of pastoralism, farming and ecotourism, 20 percent is composed of those owning land individually, 2 percent owned it as a community holding while 7 percent owned land collectively managed as a group ranch.

Land use Type

This study considered land use systems in the ecosystem with the objectives of establishing land use types compatible with wildlife. These related to agriculture, livestock production, human settlement and wildlife conservation. These land use types were generally considered by the respondents as being correlated to the area's geographical location or geological characteristics. Table 4.11 summarizes the responses on land use systems in the study area.

Table 4.11: Land Use Types

Land Use Types	Frequency	Percent
Livestock Production & Human Settlement	18	18
Livestock Production	17	17
Agriculture, Livestock Production, Human Settlement & Wildlife Conservation	17	17
Livestock Production, Human Settlement & Wildlife Conservation	12	12
Agriculture, Livestock Production & Human Settlement	10	10
Agriculture & Livestock Production	10	10
Livestock Production & Wildlife Conservation	10	10
Human Settlement	2	2
Wildlife Conservation	2	2
Agriculture & Human Settlement	2	2

Source: Field data (2013)

From Table 4.11, livestock keeping is the dominant socio-cultural and economic activity in the Amboseli ecosystem and focuses on cattle, goat and sheep and is used for both subsistence and commercial purposes. However, crop farming (39 percent) is becoming an economic activity in the dispersal area. Despite the fact that the landscape is arid and semi-arid and rainfall is scarce and unpredictable, irrigated agriculture as well as rain-fed agriculture is gaining impetus in the ecosystem. A substantial number of the respondents are engaged in livestock herding as an efficient form of land use accounting for 94 percent of all the respondents. But it was encouraging to learn that about 41 percent of the respondents surveyed were engaged in wildlife conservation. It is, however, regrettable to note that 43 percent of the respondents indicated that they are engaged in human settlement activities such as commercial centers and accommodation facilities. In fact 2 percent of the respondents accounted for human settlements per se, a confirmation of the permanent and semi-permanent settlements, electric fences, agricultural plots and mushrooming commercial centers. Results from this study further show that some members of the Maasai community are changing lifestyles from nomadic pastoralism to subsistence mixed farming, wildlife

conservation as well as erection of market centers for business and human settlements. The diversity of the ecosystem enables a wide variety of natural resource utilization systems.

Land Subdivision

Table 4.12 presents results on subdivision and fencing of land parcels within the dispersal areas.

Table 4.12: Land Subdivision

Land Use Types	Frequency	Percent
Yes	47	47
No	53	53
Total	**100**	**100**

Source: Field data (2013)

Findings in Table 4.12 indicate that parcels of land belonging to 47 percent of the respondents have been subdivided while 53 percent of them still holding free hold titles. This implies that group ranches in the ecosystem are threatened by imminent subdivision. Subsequently this will block wildlife corridors and dispersal areas.

Consequences of Land Subdivision on Pastoralism

This study sought to establish the consequences of land subdivision, on pastoralism by discussing this with focus groups and the results were as shown in Box 4.1.

BOX 4.1: Consequences of Land Subdivision on Pastoralism

Discussions indicated that there is lack of grazing lands as a result of individual land use practices adopted on their lands. Due to diminishing grazing lands, there will be increased competition for essential resources particularly pasture water and living space in addition to human- conflicts through loss of human life, livestock predation and property damage. Ongoing land subdivision is leading to changes in traditions and lifestyles of the local Maasai community as this is encouraging immigrants and human settlements in the ecosystem. Analysis of responses indicated that there is increased human settlement, permanent settlements and market centers.

Source: Field data (2013)

Findings in Box 4.1 confirm earlier findings in section 4.3.2 of the development of permanent and semi-permanent settlements, electric fences, agricultural plots and mushrooming of commercial centers. This is likely to lead to insularization of the Park as the wildlife dispersal areas outside the park boundaries will disappear, aggravating human–wildlife conflicts as well as creating unviable ecosystem for wildlife.

Through land subdivision, this study established that there were reduced livestock herds, land use change to farming as well as limited movement of livestock as access to the subdivided lands is restricted. This has also affected their nomadic lifestyle as they can no longer migrate freely in search of fresh grazing lands, which is seen as a contravention on their community rights.

Fencing

Erection of fences (electric/natural) to deter elephants and other wildlife species from their traditional grazing areas (homesteads) creates displacements of these wildlife species leading to conflicts between wildlife conservation objectives and indigenous livelihood practices severely threatening the sustainability of the ecosystem. One of the outcomes of land subdivision is fencing for personal utilization. This study considered this to be useful in the maintenance of appropriate land use types compatible with wildlife conservation in the region. Given a range of response categories-yes or no, respondents noted that some lands have been subdivided and fenced as shown in Table 4.13

Table 4.13: Fencing

Fencing	Frequency	Percent
Fenced	32	32
Not Fenced	68	68
Total	**100**	**100**

Source: Field data (2013)

From Table 4.13, those whose lands were fenced were 32 percent of the respondents. 68 percent of the respondents said that their lands were not fenced. When asked to indicate the type of fence, 30 (94) percent of the respondents asserted that their lands had natural fences while 2 (6 percent) had electric fences.

This study found it necessary to examine whether presence of wildlife has been a cost to the community in the Amboseli ecosystem so as to identify modalities of enhancing conservation in the region. Table 4.14 summarizes the responses on this.

Table 4.14: Wildlife as a Cost in the Ecosystem

Fencing	Frequency	Percent
Yes	95	95
No	5	5
Total	**100**	**100**

Source: Field data (2013)

From Table 4.14, it was found out that 95 percent of the studied population asserted that presence of wildlife due to human-wildlife conflict cases. They alluded to the fact that the region experiences high cases of human wildlife conflicts with more of their shoats being predated upon by wildcats such as lions, leopards, jackals, hyenas and wild dogs with no compensation. This study sought to establish the cost of wildlife by discussing this with focus groups and the results were as shown in Box 4.2.

BOX 4.2: Wildlife as a Cost in the Ecosystem

In addition, analysis of the qualitative data gathered from focus group discussions indicated that wildlife has also led to diminishing grazing lands. This in turn affects their nomadic pastoralism as they are forced to reduce their herds, which to them contravenes their rights in the ecosystem. Results from this study show that members of the community have lost their loved ones as a result of attacks by wildlife animals as a result of human-wildlife interaction. It was also indicated that wildlife conservation in the region was a cost due to inadequate benefit sharing mechanisms for the accruing revenues from the high revenue generating Amboseli National Park. As a result, the community felt disenfranchised by the government and therefore encouraged to diversify into other alternative land uses. This study established that wildlife was a source of insecurity in the region as the locals cannot freely engage in their daily activities in fear of attack from the roaming wild animals. This was supported by allegations of human injuries and death as a result of buffalo and elephant attacks in the villages, a fact blamed for poverty levels in the ecosystem. Presence of wildlife in the region is limiting the large herds of cattle, shoats and donkeys access to protected areas and water sources heightening human wildlife conflicts as the people felt constrained on their right of access to natural resource particularly pasture and water resources.

Source: Field data (2013)

As earlier shown in Table 4.11, livestock keeping is the dominant socio-cultural and economic activity in this ecosystem and centers around cattle, goat and sheep. However, respondents indicated that wildlife in the region was a cost due to transmission of diseases by wild beasts especially malignant catarrhal fever when they give birth on the community lands leading to death of livestock, of which the pastoralists are not compensated. Despite the fact that there is emerging land use activities in the ecosystem such as farming, farmers suffer crop destruction occasioned by raids by elephants and buffaloes. However, it is worth noting that 5 percent of the respondents felt that presence of wildlife has not been a cost to them as they earn alternative livelihood from tourists visiting the park as they buy ornaments.

Opinion on Wildlife Conservation and Tourism

Opinions on wildlife conservation and tourism in the ecosystem are important in ensuring sustained community participation in wildlife conservation. The respondents had a divided opinion on status of wildlife conservation and tourism with 95 percent feeling that wildlife conservation and tourism were costs to the community in the region while 5 percent felt it was not a cost to them.

It was observed that wildlife conservation and tourism is both beneficial and costly in the ecosystem. The local Maasai community feels that wildlife conservation and tourism is a source of employment where the locals are employed in hotels and lodges. In addition, it was asserted that the locals are self employed by engaging in business dealing in traditional Maasai artifacts fancied by tourists in the ecosystem. It was further established that residents viewed wildlife conservation and tourism positively as a revenue generating land use as tourists paid to view the abundant wildlife in their natural state. Moreover, the region has benefited from multiplier effects of wildlife conservation and tourism in the region through construction of schools and hospitals uplifting the socioeconomic status of the locals.

There is a perception that wildlife conservation and tourism is not beneficial. The main challenge here is benefit sharing as most wildlife is found in the community lands leading to increased cases of human wildlife conflicts. Respondents alluded to Kenyan policy framework which does not provide for compensation for loss of livestock through predation.

As pastoralists with large herds of cattle, shoats and donkeys, the community experienced high numbers of predation from lions, hyena, leopards and jackals.

On an impartial view, it was established that wildlife conservation and tourism is good but need to accommodate Maasai cultures and lifestyles so as to address potential conflict with pastoralism, which is the most appropriate land use for the locals. Respondents pointed out that if well managed, wildlife conservation and tourism can be source of livelihood in the region and that wildlife managers need to establish modalities for protecting locals from animals while ensuring mutual coexistence.

In order to establish the varying opinions on wildlife conservation and tourism, a cross tabulation of the resulting opinions on wildlife conservation and tourism in the ecosystem land ownership in the ecosystem was done in relation to the communities' social economic aspects of age, average annual income and the income sources and the results were as presented in Tables 4.15, 4.16 and 4.17 respectively.

Table 4.15: Age bracket and opinion of Wildlife Conservation and Tourism

Age Bracket	Wildlife as a Cost (n =100)		Total
	Yes	No	
24-45 Years	54	4	58
45-55 Years	26	1	27
55-65 Years	14	0	14
> 65 Years	1	0	1
Total	**95**	**5**	**100**

Source: Field data (2013)

This study shows that persons aged 26-45 had the highest representation as they accounted for 58 percent of the total respondents. Findings in Table 4.15 show that 54 percent of these respondents asserted that wildlife conservation and tourism was a cost to them while 4 percent said it was not a cost to them in the ecosystem. From the table, those aged between 45-55 years were 27 percent. Within this age bracket, 26 percent asserted that wildlife conservation and tourism was a cost to them while 1 percent said it was not a cost to them in the ecosystem. For those aged between 55-65 years, this group accounted for 14 percent of the total respondents surveyed in this study. Of this, they all asserted that wildlife

conservation and tourism was a cost to them. From this study, 1 percent of the respondents surveyed were over 65 years who said that that wildlife conservation and tourism was a cost in the ecosystem. Overall, this study shows that 95 percent felt that wildlife conservation and tourism were costs to the community in the region while 5 percent felt it was not a cost to them.

Table 4.16: Average Annual Income and opinion of Wildlife Conservation and Tourism

Average Annual Income	Wildlife as a Cost (n =100)		Total
	Yes	No	
Kshs. < 20,000	16	1	17
Kshs. 20,000 - 50,000	35	0	35
Kshs. 50,000 - 100,000	22	3	25
Kshs. > 100,000	22	1	23
Total	**95**	**5**	**100**

Source: Field data (2013)

Findings in Table 4.16 show that persons with an average annual income of between Kshs. 20,000 - 50,000 had the highest representation as they accounted for 35 percent of the total respondents. From Table 4.16, they all asserted that wildlife conservation and tourism was a cost to them in the ecosystem. Analysis of the findings in Table 4.16 indicates that those with an average annual income of between Kshs. 50,000 - 100,000 were 25 percent. Within this range, 22 percent asserted that wildlife conservation and tourism was a cost to them while 3 percent said it was not a cost to them in the ecosystem. For those with an average annual income of over Kshs. 100,000, this group accounted for 23 percent of the total respondents surveyed in this study. Of this, 22 percent asserted that wildlife conservation and tourism was a cost to them while 1 percent said it was not a cost to them in the ecosystem. From this study, those with an average annual income of less than Kshs. 20,000 accounted for 17 percent of the total respondents surveyed with 16 confirming that that wildlife conservation and tourism was a cost to them while 1 percent said it was not a cost to them in the ecosystem.

Table 4.17: Income Sources and opinion of Wildlife Conservation and Tourism

Income Sources	Wildlife as a Cost (n =100)		Total
	Yes	No	
Pastoralism	34	0	34
Farming	2	0	2
Ecotourism	3	1	4
Combination	29	0	29
Pastoralism & Farming	6	2	8
Pastoralism & Ecotourism	18	1	19
Business	2	1	3
Farming & Ecotourism	1	0	1
Total	**95**	**5**	**100**

Source: Field data (2013)

As seen in Table 4.17, 90 percent of the respondents engage in pastoralism which is the traditional land use among the Maasai community and the group ranches. Findings show that 53 percent of the respondents are engaged in ecotourism as their income source while 40 percent at least practice farming on their lands as a source of income. Findings in this table reveal that 89 percent of those whose income source is pastoralism viewed wildlife conservation and tourism as a cost with only 1 percent stating otherwise. While 29 percent of the respondents' source of income was from a combination of pastoralism, farming and ecotourism, they all asserted that wildlife conservation and tourism was a cost to them in the ecosystem. Of the 40 percent that practiced farming on their lands as a source of income, 38 percent viewed wildlife conservation and tourism as a cost to them with 2 percent stating otherwise.

Appropriateness of Wildlife Conservation in the Region

This study also sought to establish whether wildlife conservation is the appropriate land use type in this area and the results were as presented in Table 4.18.

Table 4.18: Appropriateness of Wildlife Conservation in the Region

Fencing	Frequency (n =100)	Percent
Appropriate	88	88
Not Appropriate	12	12
Total	**100**	**100**

Source: Field data (2013)

Results in Table 4.18 shows that, wildlife conservation is an appropriate land use type as indicated by 88 percent of the respondents. The reasons given were that the area is richly endowed with wildlife, wildlife migration is compatible with nomadic pastorism as it allows replenishment of pasture, wildlife conservation attracts tourists and has co-existed with nomadic pastorism since time immemorial, land in the region is not arable for agriculture and water is scarce for farming activities, and that there is plenty of pasture for both livestcok and wildlife.

However, (12 percent) of the respondents noted that wildlife conservation is not the appropriate land use type, implying that they perceive other land use types to be the most appropriate in the region due to competition for essentials particularly pasture, water and living space in addition to conflicts through loss of human life, livestock predation and property damage.

This study sought to establish whether wildlife conservation is the appropriate land use type in this area in relation to the communities' social economic aspects of age, average annual income and the income sources. To achieve this, a cross tabulation of the resulting opinions on the appropriateness of wildlife conservation as a land use type in this area in relation to the communities' social economic aspects of age, average annual income and the income sources was done in relation to and the results were as presented in Tables 4.19, 4.20 and 4.21 respectively.

Table 4.19: Age and Appropriateness of Wildlife Conservation

Age Bracket	Appropriateness of Wildlife Conservation (n =100)		
	Appropriate	Not Appropriate	**Total**
24-45 Years	50	8	58
45-55 Years	25	2	27
55-65 Years	12	2	14
> 65 Years	1	0	1
Total	**88**	**12**	**100**

Source: Field data (2013)

Analysis of findings in Table 4.19 indicates that shows that persons aged 26-45 had the highest representation as they accounted for 58 percent of the total respondents. From the Table, 50 percent of this group asserted that wildlife conservation was an appropriate land use type in this area while 8 percent said it was not appropriate. From the table, those aged between 45-55 years were 27 percent. Within this age bracket, 25 percent asserted that wildlife conservation was an appropriate land use type while 2 percent said it was not appropriate in the ecosystem. For those aged between 55-65 years, this group accounted for 14 percent of the total respondents surveyed in this study. Of this, 12 percent said that wildlife conservation was an appropriate land use type in this area while 2 percent said it was not appropriate. From this study, 1 percent of the respondents surveyed were over 65 years who said that wildlife conservation was an appropriate land use type in the ecosystem. Overall, wildlife conservation is an appropriate land use type as indicated by 88 percent of the respondents. However, (12 percent) of the respondents noted that wildlife conservation is not the appropriate land use type.

Table 4.20: Average Annual Income and Appropriateness of Wildlife Conservation

Average Annual Income	Appropriateness of Wildlife Conservation (n =100)		Tota
	Appropriate	**Not Appropriate**	**l**
Kshs. < 20,000	15	2	17
Kshs. 20,000 - 50,000	29	6	35
Kshs. 50,000 - 100,000	22	3	25
Kshs. > 100,000	22	1	23
Total	**88**	**12**	**100**

Source: Field data (2013)

Findings in Table 4.20 show that persons with an average annual income of between Kshs. 20,000 - 50,000 had the highest representation as they accounted for 35 percent of the total respondents. From Table 4.20, 29 percent said that wildlife conservation was an appropriate land use type in this area while 6 percent said it was not appropriate. Analysis of the findings in Table 4.20 indicates that those with an average annual income of between Kshs. 50,000 - 100,000 were 25 percent. Within this range, 22 percent asserted that wildlife conservation was an appropriate land use type in this area while 3 percent said it was not appropriate. For those with an average annual income of over Kshs. 100,000, this group accounted for 23 percent of the total respondents surveyed in this study. Of this, 22 percent asserted that wildlife conservation was an appropriate land use type in this area while 1percent said it was not appropriate. From this study, those with an average annual income of less than Kshs. 20,000 accounted for 17 percent of the total respondents surveyed with 15 confirming that wildlife conservation is an appropriate land use type in this area while 2 percent said it was not appropriate.

Table 4.21: Income Sources and Appropriateness of Wildlife Conservation

Income Sources	**Appropriateness of Wildlife Conservation**		
	Appropriate	Not Appropriate	**Total**
Pastoralism	30	4	34
Farming	2	0	2
Ecotourism	4	0	4
Combination	26	3	29
Pastoralism & Farming	8	0	8
Pastoralism & Ecotourism	16	3	19
Business	1	2	3
Farming & Ecotourism	1	0	1
Total	**88**	**12**	**100**

Source: Field data (2013)

As seen in Table 4.21, 90 percent of the respondents engage in pastoralism which is the traditional land use among the Maasai community and the group ranches. Findings show that 53 percent of the respondents are engaged in ecotourism as their income source while 40 percent at least practice farming on their lands as a source of income.

Analysis of findings in Table 4.21 indicate that most (80 percent) of those whose income

source is pastoralism viewed wildlife conservation as an appropriate land use type in this area while 4 percent said it was not appropriate. Of the twenty nine percent of the whose source of income was from a combination of pastoralism, farming and ecotourism, 26 percent said that wildlife conservation was an appropriate land use type in this area while 3 percent said it was not appropriate. Of the 40 percent that at least practiced farming on their lands as a source of income, 37 percent viewed wildlife conservation as an appropriate land use type in this area while 3 percent said it was not appropriate.

This study also sought the opinion of the respondents to indicate whether they believed that the land use types in the Amboseli ecosystem are compatible with wildlife conservation in this ecosystem and the findings are summarized in Table 4.22.

Table 4.22: Compatibility of wildlife conservation and land use types in the area

Fencing	**Frequency**	**Percent**
Compatible	81	81
Incompatible	19	19
Total	**100**	**100**

Source: Field data (2013)

Many (81%) respondents considered the land use types in the study area compatible with wildlife conservation in this ecosystem, citing Maasai culture that allows integration with conservation in addition to the benefit from ecotourism ventures as supplement to livestock production. However, it was pointed out that there was need for conservation education on how to live with wild animals to enhance compatibility of wildlife conservation and land use types in the area. Some respondents, however, noted that the land use types in this area are not compatible with wildlife conservation in this ecosystem. This concern was pointed out by 19 percent of the respondents surveyed due to water scarcity to allow for other activities, increased cases of human wildlife conflicts and lack of benefits from wildlife conservation to a majority of the locals.

In order to establish the compatibility of wildlife conservation and land use types in the area in relation to the communities' social economic aspects of age, average annual income and the income sources, a cross tabulation of the resulting opinions on the compatibility of wildlife conservation and land use types was done in relation to the communities' social

economic aspects of age, average annual income and the income sources and the results were as presented in Tables 4.23, 4.24 and 4.25 respectively.

Table 4.23: Age and Compatibility of wildlife conservation and land use types in the area

Age Bracket	Compatibility with Wildlife Conservation		
	Compatible	**Incompatible**	**Total**
24-45 Years	49	9	58
45-55 Years	21	6	27
55-65 Years	10	4	14
> 65 Years	1	0	1
Total	81	19	100

Source: Field data (2013)

As shown in Table 4.23, persons aged 26-45 had the highest representation as they accounted for 58 percent of the total respondents. From the Table, 49 percent of this group asserted that wildlife conservation was compatible with land use types in this area while 9 percent said it was incompatible with land use types in this area. From the table, those aged between 45-55 years were 27 percent. Within this age bracket, 21 percent asserted that wildlife conservation was compatible with land use types in this area while 4 percent said it was incompatible with land use types in this area. For those aged between 55-65 years, this group accounted for 14 percent of the total respondents surveyed in this study. Of this, 10 percent said that wildlife conservation was compatible with land use types in this area while 4 percent said it was incompatible. From this study, 1 percent of the respondents surveyed were over 65 years who said that was compatible with land use types in this area. Overall, wildlife conservation is compatible with land use types in this area as indicated by 81 percent of the respondents. However, (19 percent) of the respondents noted that wildlife conservation is incompatible with land use types in this area.

Table 4.24: Average Annual Income and Compatibility of wildlife conservation and land use types in the area

Age Bracket	Appropriateness of Wildlife Conservation		
	Compatible	**Incompatible**	**Total**
Kshs. < 20,000	15	2	17
Kshs. 20,000 - 50,000	29	6	35
Kshs. 50,000 - 100,000	18	7	25
Kshs. > 100,000	19	4	23
Total	81	19	100

Source: Field data (2013)

Findings in Table 4.24 show that persons with an average annual income of between Kshs. 20,000 - 50,000 had the highest representation as they accounted for 35 percent of the total respondents. From Table 4.24, 29 percent said that wildlife conservation was compatible with land use types in this area while 6 percent said it was incompatible with land use types in this area. Analysis of the findings in Table 4.24 indicates that those with an average annual income of between Kshs. 50,000 - 100,000 were 25 percent. Within this range, 18 percent said that wildlife conservation was compatible with land use types in this area while 7 percent said it was incompatible. For those with an average annual income of over Kshs. 100,000, this group accounted for 23 percent of the total respondents surveyed in this study. Of this, 19 percent said that wildlife conservation was compatible with land use types in this area while 4 percent said it was incompatible. From this study, those with an average annual income of less than Kshs. 20,000 accounted for 17 percent of the total respondents surveyed with 15 confirming that wildlife conservation was compatible with land use types in this area while 2 percent said it was incompatible.

Table 4.25: Income Sources and Compatibility of wildlife conservation and land use types in the area

Age Bracket	Compatibility with Wildlife Conservation		
	Compatible	**Incompatible**	**Total**
Pastoralism	28	6	34
Farming	1	1	2
Ecotourism	4	0	4
Combination	24	5	29
Pastoralism & Farming	5	3	8
Pastoralism & Ecotourism	17	2	19
Business	1	2	3
Farming & Ecotourism	1	0	1
Total	81	19	100

Source: Field data (2013)

As seen in Table 4.25, 90 percent of the respondents engage in pastoralism, which is the traditional land use among the Maasai community and the group ranches. Findings show that 53 percent of the respondents are engaged in ecotourism as their income source while 40 percent at least practice farming on their lands as a source of income.

Analysis of findings in this table reveals that most (74 percent) of those whose income source is pastoralism viewed wildlife conservation as being compatible with land use types in this area while 16 percent said it was incompatible. While 29 percent of the respondents' source of income was from a combination of pastoralism, farming and ecotourism, 24 percent said that that wildlife conservation was compatible with land use type in this area while 5 percent said it was incompatible. Of the 40 percent that at least practiced farming on their lands as a source of income, 31 percent viewed wildlife conservation as being compatible with land use type in this area while 6 percent said it was incompatible.

Relationship between Types of Land Use and Wildlife Conservation

As stated earlier in this section, the first specific objective of this study was to examine the effect of land tenure and land use systems on community participation in wildlife conservation in the Amboseli ecosystem. The Pearson's Product moment correlation, which is a non-parametric measure of the strength and direction of association that exists between two variables, was used to measure the existing relationship between land tenure and land

use systems and community participation in wildlife conservation in the Amboseli ecosystem. Tables 4.26 and 4.27 present findings in respect to this.

Table 4.26: Relationship between Land Tenure and Community Participation in Wildlife Conservation

		Community Participation in Wildlife Conservation
Land Tenure	Pearson Correlation	0.608**
	Sig. 2-tailed	.000
	N	100

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

From the correlations presented in Table 4.26, land tenure ($r = 0.608$, $P<.01$) yielded strong and significant positive relationships with community participation in wildlife conservation. This implies that the existing land tenure strongly influence community participation in wildlife conservation.

Table 4.27: Relationship between Land use Systems and Community Participation in Wildlife Conservation

		Community Participation in Wildlife Conservation
Land use Systems	Pearson Correlation	0.515**
	Sig. 2-tailed	.000
	N	100

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

Findings in Table 4.27 indicate that land tenure use systems ($r = 0.515$, $P<.01$) yielded strong and significant positive relationships with community participation in wildlife conservation. This implies that the existing land use systems strongly influence community participation in wildlife conservation.

This study further sought to establish land use systems compatible with wildlife conservation in the Amboseli ecosystem. A ten point Likert scale was used to measure compatibility where 1-3 represented 'Low' and 4-7 'Moderate' and 8-10 'High'. The objective was to measure the extent to which land use types in this area were recommended to be compatible with wildlife conservation in this ecosystem. Selection of the land use types for measurement was informed by both theoretical considerations and descriptions found in the literature.

The scores "Low" represented a land use type recommended to be compatible with wildlife conservation in this ecosystem to a "Low Extent" (LE), equivalent to 1 to 3.9 on the continuous Likert scale (1≤SE<3.9). The scores of "Moderate" represented a land use type recommended to be compatible with wildlife conservation in this ecosystem to a "Moderate Extent" (ME). This was equivalent to 4.0 to 6.9 on the Likert scale (4.0≤ME<7.9). The score of "High" represented land use type recommended to be compatible with wildlife conservation in this ecosystem to a "High Extent" (HE). This was equivalent to 8.0 to 10.0 on the Likert scale (8.0≤LE<10.0). Aggregation of the data for the land tenure and land use systems was carried out to obtain statistics for further analysis. A summary of the descriptive statistics for analysis of land tenure and land use systems compatible with wildlife conservation in the Amboseli ecosystem is presented in Table 4.28.

Table 4.28: Land Use Types compatible with Wildlife Conservation

Land Use Type	Percentage				Mean Scores
	Low	Moderate	High	Total	
Farming	44	30	26	**100**	3.8
Livestock Production	11	12	77	**100**	8.1
Human settlement and centers	20	55	25	**100**	5.7
Farming, Livestock Production, Human settlement and centers	6	7	7	**20**	5.7

Source: Field data (2013)

Results in Table 4.28 show that, farming is compatible with wildlife conservation in the Amboseli ecosystem to a low extent, with 44 percent, 30 percent and 26 percent saying that it was compatible to a low, moderate and high extent respectively. This implies that farming has no significant compatibility with wildlife conservation in the Amboseli ecosystem. The mean score was 3.8 (1≤SE<3.9) indicating that farming was compatible with wildlife conservation in the Amboseli ecosystem but to a limited extent. This implies that the ecosystem is not ideal for agriculture due to the aridity nature of the ecosystem and insecurity reasons due to impending attack of humans by wildlife.

Livestock production is compatible with wildlife conservation in the Amboseli ecosystem to a high extent, with 11 percent, 12 percent and 77 percent saying that it was compatible to a low, moderate and high extent respectively. This was confirmed by the overall average

response being (mean = 8.1). This means that the respondents highly recommended livestock production to be compatible with wildlife conservation in this ecosystem. This implies that livestock production has a significant compatibility with wildlife conservation in the Amboseli ecosystem. This in effect confirmed that coexistence between Maasai pastoral culture and wildlife in the ecosystem for over a long time and that livestock production is more compatible as it is easier to manage and integrate with wildlife.

As shown in Table 4.28, human settlement and centers were compatible with wildlife conservation in the Amboseli ecosystem to a moderate extent, with 20 percent, 55 percent and 25 percent saying that it was compatible to a low, moderate and high extent respectively. The mean score was 5.7 ($4 \leq SE < 7.9$) indicating that human settlement and centers were compatible with wildlife conservation in the Amboseli ecosystem but to a moderate extent. This implies that although the ecosystem is ideal for human settlement, it is not ideal for agricultural activities due to impending attacks of humans by wildlife and this requires controlled human settlements to engage in tourism activities.

4.2.4 Implication of Wildlife policies and legal framework on community participation in wildlife conservation

The second specific objective of this study was to assess the implication of wildlife policies and legal framework on community participation in wildlife conservation in the Amboseli ecosystem. This section presents study findings in relation to this objective.

Benefits and Liabilities of Wildlife Conservation

The presence of wildlife has benefits/liabilities associated with it. This study considered this to be useful in ascertaining perceptions towards wildlife conservation wildlife conservation in the region. Table 4.29 is an illustration of respondents' take on benefits/liabilities associated with wildlife conservation in the ecosystem.

Table 4.29: Benefits of Wildlife Conservation in the Region

Fencing	Frequency	Percent
Beneficial	89	89
Not Beneficial	11	11
Total	**100**	**100**

Source: Field data (2013)

Wildlife conservation is beneficial in the ecosystem as indicated by 89 percent of the respondents with reasons given being that wildlife conservation is economically beneficial as community members earn income from ecotourism ventures and sell artifacts to tourists, take photos with tourists and sing cultural songs for a fee and that the arid land is poor for any other practices. In addition, it enhances conservation of nature which attracts tourists to the region who offer grants for development of the area in addition to construction of schools, health facilities and provision of bursaries to school going children from the region. This has economically empowered some members of the community.

However, 11 percent of the respondents noted that wildlife conservation is not beneficial in the ecosystem due to competition for essentials particularly pasture, water and living space in addition to conflicts through loss of human life, livestock predation and property damage and that benefits not reaching the community.

Effect of Kenyan policy and legal framework on community participation in wildlife conservation

A ten point Likert scale was used to measure the extent to which the Kenyan policy and governance practices has affected the community's participation in wildlife conservation in the Amboseli ecosystem where 1-3 represented 'Low' and 4-7 'Moderate' and 8-10 'High'. Selection of the land use types for measurement was informed by both theoretical considerations and descriptions found in the literature.

The scores "Low" represented an item of the Kenyan policy and governance practices perceived to be affecting the community's participation in wildlife conservation in the Amboseli ecosystem to a "Low Extent" (LE), equivalent to 1 to 3.9 on the continuous Likert scale ($1 \leq SE < 3.9$). The scores of "Moderate" represented an item of the Kenyan policy and governance practices perceived to be affecting the community's participation in wildlife conservation in the Amboseli ecosystem to a "Moderate Extent" (ME). This was equivalent to 4.0 to 7.9 on the Likert scale ($4.0 \leq ME < 7.9$). The score of "High" represented an item of the Kenyan policy and governance practices perceived to be affecting the community's participation in wildlife conservation in the Amboseli ecosystem to a "High Extent" (HE). This was equivalent to 8.0 to 10.0 on the Likert scale ($8.0 \leq LE < 10.0$). A summary of the

descriptive statistics on the extent to which the Kenyan policy and legal framework has affected the community's participation in wildlife conservation in the Amboseli ecosystem is presented in Table 4.30.

Table 4.30: Effect of Kenyan policy and legal framework on community participation in wildlife conservation

Policy Framework	Percentage				Mean
	Low	Moderate	High	Total	Scores
Supports formation and operation of group ranches	16	54	30	**100**	6.94
Provides guidelines for establishment of community conservancies	17	51	32	**100**	6.31
Provides framework for lease agreements for land management structures in the ecosystem	18	49	33	**100**	6.02
Provides guidelines for establishment of eco-tourism ventures	18	47	35	**100**	6.68
Provides guidelines for formation of conservation associations to promote rights of conservancies in the ecosystem.	19	42	39	**100**	6.31
Provides guidelines for management planning for the ecosystem	24	47	29	**100**	6.4
Average	**19**	**48**	**33**	**100**	**6.4**

Source: Field data (2013)

Overall, findings indicate that respondents perceived that Kenyan policy and governance practices support community participation wildlife conservation to a moderate extent with a composite mean score was 6.4 ($4.0 \leq ME < 7.9$) out of a possible 10. These findings show that 16 percent, 54 percent and 30 percent of the respondents perceived that Kenyan policy and governance practices support formation and operation of group ranches to a low, moderate and high extent respectively. The mean score was 6.94 ($4.0 \leq ME < 7.9$) indicating that that Kenyan policy and governance practices support wildlife conservation in the Amboseli ecosystem but to a moderate extent. Table 4.30 reveals that Kenyan policy and governance practices provides guidelines for establishment of community conservancies, provides framework for lease agreements for land management structures in the ecosystem, provides guidelines for establishment of eco-tourism ventures, provides guidelines for formation of

conservation associations to promote rights of conservancies in the ecosystem, provides guidelines for management planning for the ecosystem but to a moderate extent as the mean scores were within this range (4.0≤ME<6.9) equivalent to was equivalent to 4.0 to 7.9 on the Likert scale. This implies that there is a perception that the national policy framework does not conclusively provide guidance for making wildlife conservation a viable land use option. However, this confirms guidelines contained in Sessional paper No 3 of 1975, (Republic of Kenya 1975) which provides for a shift in wildlife conservation policy that is intended to harmonize conservation with economic and social development. This therefore calls for an integrated and adaptive ecosystem management approach to sustain wildlife and habitat diversity by empowering the local community to take control of their natural resource, secure their livelihoods and protect their communal land and environment.

Many variables influence individuals' perceptions and expectations of wildlife utilization. Historical tensions between conservation authorities and local Maasai have led to ill feelings over who should benefit from Amboseli national park revenues and other local conservation initiatives within the ecosystem. Respondents felt that there were no significant benefits to local community from tourism or wildlife resources and that the government and tourism investors were the sole beneficiaries.

To examine the relationship between Kenyan wildlife policies and legal framework and community participation in wildlife conservation, the Pearson's Product moment correlation, which is a non-parametric measure of the strength and direction of association that exists between two variables, was used to measure and the results were as shown in Table 4.31.

Table 4.31: Relationship between Kenyan policy and legal framework and Community Participation in Wildlife Conservation

		Community Participation in Wildlife Conservation
Kenyan policy and legal framework	Pearson Correlation	0.339**
	Sig. 2-tailed	.000
	N	100

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

From the correlations presented in Table 4.31, Kenyan wildlife policies and legal framework ($r = 0.339$, $P<.01$) yielded moderate and significant positive relationships with community participation in wildlife conservation. This implies that the existing Kenyan wildlife policies and legal framework moderately influence community participation in wildlife conservation.

4.2.5 Incentives for enhanced community participation and securing more space for wildlife conservation

The third and final specific objective of this study was to identify incentives for enhanced community participation and securing more space for wildlife conservation in the Amboseli ecosystem. This section presents study findings in relation to this objective.

Wildlife Utilization Options

A ten point Likert scale was used to measure the ways in which the respondents would like to see wildlife utilized in this area where 1-3 represented 'Low' and 4-7 'Moderate' and 8-10 'High'. Selection of the land use types for measurement was informed by both theoretical considerations and descriptions found in the literature. A summary of the descriptive statistics on ways in which the respondents would have liked to see wildlife utilized in this area is presented in Table 4.32.

Table 4.32: Wildlife Utilization Options

Wildlife Utilization Options	Percentage			
	Low	**Moderate**	**High**	**Total**
Revenue sharing from government controlled Park	10	12	72	**100**
Community Sanctuary	16	16	68	**100**
Traditional uses	17	39	44	**100**
Cultural Manyatta's	12	26	62	**100**
Lodge and Camps	24	43	33	**100**
Hunting	95	0	5	**100**

Source: Field data (2013)

From Table 4.32, majority of the respondents (72 percent) considered revenue sharing from the government controlled Park as the most viable option to utilize wildlife in the area. Community sanctuaries and cultural *manyattas* were cited by 68 percent and 62 percent of the respondents respectively. This study concurs that community sanctuaries and establishment cultural Manyatta's are determinants in individuals' coexistence with wildlife as they collectively create a tourism package in the ecosystem. Development of lodges and

camps is moderately recommended by 43 percent of the respondents as an option for wildlife utilization in the area. The lodges and camp sites that dot the ecosystem thrive because of the wildlife conservation initiatives in the Amboseli National Park and the surrounding group ranches. It is worth noting that hunting was the less option recommended as an option for wildlife utilization in this area. This implies that with proper land use policies in the area, the local community would like to continue having wildlife on their lands.

Equitable Sharing of Benefits from Wildlife Conservation

This study sought to establish measures that can bring an equitable sharing of benefits from wildlife conservation to the rural community in the Amboseli ecosystem. Analysis of the qualitative data indicated that the respondents asserted the need for Amboseli park management to disseminate information on revenues generated from Amboseli and the expenditures in running the park for appreciation of the benefits and costs of conservation in the ecosystem. It was further established that initiated projects by the government and other conservation NGO's are implemented without knowledge of the entire community and thus proceeds from land leases benefits a few. With proper communication, all community members will believe in the conservation crusade as they will collectively share the accruing benefits /costs of wildlife conservation in the ecosystem. Box 4.3 has findings on Equitable Sharing of Benefits from Wildlife Conservation while Box 4.4 has findings on the future of conservation in the ecosystem as derived from the focus group discussions.

Box 4.3: Equitable Sharing of Benefits from Wildlife Conservation

Focus group discussions revealed that equitable sharing of benefits from wildlife conservation to the rural community in the Amboseli ecosystem would be enhanced by ensuring that benefits from wildlife conservation should be used to develop the region through enhanced corporate social responsibility activities leading to infrastructural development in the area. It was established that such activities need to focus on road construction, construction and equipping of schools and health facilities, provision of bursaries to needy school going children and drill water boreholes to enhance reliability in the region.

It was established that equitable sharing of benefits from wildlife conservation would be enhanced through enactment of compensation programs in which the government compensates livestock predation based on the market values in addition to compensation for property damages. Maasai pastoralism is highly compatible with wildlife and the potential for the local communities to sustainably manage and benefit from this resource is promising. Implementation of an effective compensation programs in the area is critical in determining the outcomes of both conservation and community development efforts in Maasailand.

From the discussions, equitable sharing of benefits from wildlife conservation would be enhanced through employment of community members, direct payment of cultural services rather than through drivers, revenue sharing from park collections, establishing conservancies as most dispersal areas are in community lands and quick response to incidences of human wildlife conflict.

Source: Field data (2013)

Box 4.4: Future of Wildlife Conservation

From the focus group discussions, when asked to indicate what the future of wildlife conservation in this ecosystem was, it was established that there were varied stand points. Some of the respondents asserted that the future looked bright owing to the fact that there is enhanced Stakeholder engagement in the ecosystem bringing together the Central government, County government and other conservation NGO's in the region whose concerted efforts are likely to see an organized wildlife industry governance systems in the ecosystem. The future of wildlife conservation in the Amboseli ecosystem is bright owing to the fact that Amboseli national park is among the most visited parks in Kenya. Respondents indicated that they expect management of the wildlife resource in the ecosystem to be inclusive and involve the local communities hence continued wildlife existence in the area. In addition, the future of wildlife conservation in this ecosystem is bright as a result of the corporate social responsibility activities by the Kenya wildlife Service whose thematic areas in the region include water, education and health. This, as a benefit for having wildlife on their lands is encouraging the locals to continue hosting the wildlife. This qualifies the social exchange framework that the land owners in Amboseli ecosystem would benefit directly from leasing their land for biodiversity conservation and by way of reciprocity would forfeit all other rights to use the leased land for conservation only and not engage in other activities that are detrimental to their coexistence and provide space for wildlife conservation to thrive.

On the contrary, some respondents indicated that the future of wildlife conservation in the ecosystem was bleak due to lack of community involvement and direct benefit from conservation programs, prolonged compensation procedures human death and human injuries caused by wildlife, increased poaching and human wildlife conflicts in the area, climate changes, water scarcity in the protected areas as well as changing land uses and increasing human populations and settlements which are leading insularization of Amboseli national park. It is true that despite the great costs of allowing wildlife on their communal lands, the locals continue to shoulder wildlife –related damages without compensation. As such, the community is likely to switch to other forms of land use as they see wildlife conservation as not being beneficial. Findings indicated that some respondents were not in a position to state the future of wildlife conservation in the ecosystem as they had no information on status of wildlife conservation in the ecosystem.

Source: Field data (2013)

This study further sought responses in relation to the options for creating more space for wildlife conservation in the Amboseli ecosystem. This study then asked the respondents to indicate the options for creating more space for wildlife conservation in the Amboseli ecosystem. A ten point Likert scale was used to measure the extent to which various options for creating more space for wildlife conservation in the Amboseli ecosystem were recommended where 1-3 represented 'Low' and 4-7 'Moderate' and 8-10 'High'. The scores "Low" represented an option preferred for creating more space for wildlife conservation in the Amboseli ecosystem to a "Low Extent" (LE), equivalent to 1 to 3.9 on the continuous Likert scale ($1 \leq SE < 3.9$). The scores of "Moderate" represented an option preferred for creating more space for wildlife conservation in the Amboseli ecosystem to a "Moderate Extent" (ME). This was equivalent to 4.0 to 7.9 on the Likert scale ($4.0 \leq ME < 7.9$). The scores of "High" represented an option preferred for creating more space for wildlife conservation in the Amboseli ecosystem to a "High Extent" (HE). This was equivalent to 8.0 to 10.0 on the Likert scale ($8.0 \leq LE < 10.0$). A summary of the descriptive statistics on options for creating more space for wildlife conservation in the Amboseli ecosystem are summarized in Table 4.33.

Table 4.33: Options for Creating More Space for Wildlife Conservation

Options for More Wildlife Space	Percentage				Mean Scores
	Low	Moderate	High	Total	
Adopt land use practice compatible with wildlife conservation	9	12	79	**100**	8.26
Enumerate the Benefits/liabilities of wildlife outside Amboseli	8	13	79	**100**	8.21
Enabling Institutional arrangements that enhance wildlife conservation	18	24	58	**100**	8.01
Enhanced Benefit sharing and community rights	4	21	75	**100**	8.24
Adoption of land use plan which guide land use types within certain areas	14	29	57	**100**	8.13

Source: Fieldwork, August (2013)

From Table 4.33, Adopting land use practices compatible with wildlife conservation, enumerating benefits/liabilities of wildlife outside Amboseli, enabling institutional arrangements that enhance wildlife conservation, enhanced benefit sharing and community rights and adoption of land use plan which guide land use types within certain areas are highly recommended measures for creating more space for wildlife conservation in the Amboseli ecosystem as the mean scores were within this range ($8.0 \leq ME < 10.0$) equivalent to was equivalent to 8.0 to 10.0 on the Likert scale. It was established that more space for wildlife conservation is required so as to secure the ecosystem for sustainability to provide resilience to critical ecosystems as well as species as climate change and climate variability poses new threats. This calls for an integrated and adaptive ecosystem management approach to sustain wildlife and habitat diversity by empowering the local community to take control of their natural resource, secure their livelihoods and protect their communal land and environment.

4.3 Regression Analysis

A multivariate regression mode was applied to determine the relative importance of each of the variables with respect to community participation in wildlife conservation. Table 4.34 presents the regression model summary.

Table 4.34: Regression Model

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	**Sig.**
1	.887[a]	.787	.790	.368	0.00

a. Predictors: (Constant), Land Tenure , Land use Systems and Kenyan policy and legal framework

b. Dependent Variable: Community Participation in Wildlife Conservation

Source: Fieldwork, August (2013)

Analysis in Table 4.34 shows that the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variable) R-Squared was 0.787. This implies that 78.7 percent of the variation in community participation in wildlife conservation is explained by land tenure, land use systems and Kenyan policy and legal framework leaving only 21.3 percent unexplained. The P –value of 0.000 (less than

0.05) implies that the model of community participation in wildlife conservation is significant at the 5 percent significance.

The regression model was as follows: -

$Y=\beta_o+ \beta_1X_1+ \beta_2X_2+ Є$

Where:

Y = Community Participation in Wildlife Conservation

β_o = Constant term (y intercept)

β = Coefficients of determinants

X_1 = land tenure

X_2 = land use systems

X_3 = Kenyan policy and legal framework

$Є$ = Error term

A summary of the coefficients of regression equation is presented in Table 4.35.

Table 4.35: Coefficients of Regression Equation

		Unstandardized Coefficients		Standardized Coefficients	T	R	R2	p-value
		B	Std. Error	Beta				
(Constant)		2.332	0.085		27.455			.000
Land Tenure	X_1	0.558	0.026	0.608	-0.536	0.608	0.370	.000
Land use Systems	X_2	0.469	0.031	0.515	-0.712	0.515	0.265	.000
Kenyan policy and legal framework	X_3	0.339	0.025	0.390	3.265	0.390	0.152	.000

Source: Fieldwork, August (2013)

The established multiple regression equation becomes:

$Y=2.332+ 0.558X_1+ 0.469X_2+ 0.339X_3$

From the findings, land tenure in the ecosystem negatively influences community participation in wildlife conservation in the ecosystem. The regression results showed that land tenure in the ecosystem have a direct effect upon community participation in wildlife

conservation in the ecosystem with a positive standardized beta coefficient (0.608). The results show that 37 percent (R^2 = 0.370) of the variation in community participation in wildlife conservation in the ecosystem is explained by land tenure systems in the Amboseli ecosystem. However, increased application of the existing the land tenure systems (T = -0.536) appear not to encourage community participation in wildlife conservation due to reducing lands for wildlife arising from land subdivisions in the ecosystem.

As shown in Table 4.35, land use systems in the ecosystem have a direct effect upon community participation in wildlife conservation in the ecosystem with a positive standardized beta coefficient (0.515). The results show that 26.5 percent (R^2 = 0.265) of the variation in community participation in wildlife conservation in the ecosystem is explained by land use systems. However, increased application of the existing land use systems (T = -0.712) appear not to encourage community participation in wildlife conservation due conflicts with pastoralism (the dominant socio-cultural and economic activity in the Amboseli ecosystem centering on cattle, goat and sheep) and farming. It is therefore appropriate to align these land tenure and land use systems with dimensions of community participation in wildlife conservation to encourage local communities in taking initiatives towards wildlife conservation in the ecosystem.

From the findings, Kenyan wildlife policies and legal framework moderately influences community participation in wildlife conservation in the ecosystem. The regression results (Table 4.35) showed that provisions in the Kenyan wildlife policies and legal framework have a direct effect upon community participation in wildlife conservation in the ecosystem with a positive standardized beta coefficient (0.390). The results show that 15.2 percent (R^2 = 0.152) of the variation in community participation in wildlife conservation in the ecosystem is explained by provisions in the Kenyan wildlife policies and legal framework. Analysis of these findings indicate that implementation of the Kenyan wildlife policies and legal framework would encourage community participation in wildlife conservation (T = 3.265).

An analysis of variance (ANOVA) was conducted to establish the variability or spread of scores in the sample and the results were as shown in Table 4.36.

Table 4.36: ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.670	8	2.806	2.007	.081
Residual	27.967	91	1.398		
Total	**61.636**	**99**			

Source: Research Data (2014)

From the information presented in the ANOVA table, given that the probability of variation, (.081) is more than the critical value (0.05), then the effect of variability is insignificant. Thus, in the two group ranches, there is moderate community participation in wildlife conservation as a result of land use systems and Kenyan policy and legal framework. Furthermore, given that the regression mean *(m = 2.806)* is significantly greater than the residual variability (*m = 1.398)*, it is concluded that the research samples differed on the outcome variable. This is supported by the ratio *F (2.007)*, which serves as a measure of the statistical importance or significance of the differences among the group means. Given that the value of *F (2.007)* is much larger than one, this indicates that some of the groups differed significantly in terms of their mean or average values. This could be attributed to varying perceptions of community participation in wildlife conservation sections of the group ranches in the Amboseli ecosystem.

4.4 Discussion

This study has presented in this section a discussion of its findings based on the objectives it had set out to achieve. It begins with the first objective, which was to examine land tenure and land use systems compatible with wildlife conservation in the Amboseli ecosystem. The discussion proceeds to objective two, which sought to assess the implication of Wildlife policies and legal framework on peoples' attitudes and perceptions towards wildlife conservation in the Amboseli ecosystem. This section concludes with a discussion on ways of securing more space for wildlife and enhances equitable benefit sharing accruing from wildlife conservation in the ecosystem.

4.4.1 Community Participation in Wildlife Conservation

The broad objective of this study was to examine the modalities for enhancing community participation in wildlife conservation in Amboseli Ecosystem. Results in Table 4.6 indicate that community participation in wildlife conservation in the Amboseli ecosystem is to a low

extent with a composite mean score of 3.5 (1≤LE<3.9) out of a possible 10. This study shows that 58 percent, 36 percent and 7 percent of the respondents asserted community participation in wildlife conservation in the Amboseli ecosystem to a low, moderate and high extent respectively. Findings in Table 4.6 reveals that communities are involved in wildlife conservation in the ecosystem; communities are involved in preparation of General Management Plans for the ecosystem; CBOs have the authority to manage wildlife on village land; Government supports formation of community ecosystem management committees and that the local community participates in policy-making for wildlife conservation in the ecosystem but to a low extent as the mean scores were within this range (1≤LE<3.9) equivalent to 1 to 3.9 on the continuous Likert scale. It was established that communities take initiative in conserving wildlife out of their own economic interest and that communities are involved in conservation education and awareness but to a moderate extent as the mean scores were within this range (4.0≤ME<6.9) was equivalent to 4.0 to 7.9 on the Likert scale. These findings lend support to assertions by Okello (2011) that community participation in wildlife conservations entails involvement in formation of community ecosystem management committees and participation in policy-making for wildlife conservation. For instance in the Kenyan context, the KWS policy and strategy 2012-2017 seeks to balance the needs of the people of Kenya with opportunities for sustainable wildlife conservation and management through community involvement for economic benefits as well as securing additional space for wildlife.

4.4.2 Effect of land tenure and land use systems on community participation in wildlife conservation

The first specific objective of this study was to examine the effect of land tenure and land use systems on community participation in wildlife conservation in the Amboseli ecosystem. This study considered land ownership, land use type, land subdivision, consequences of land subdivision on pastoralism, fencing, opinion on wildlife conservation and tourism, appropriateness of wildlife conservation in the region as well as the land use types compatible with wildlife conservation in wildlife conservation in the Amboseli ecosystem. Correlation results (Tables 4.26) and regression results (Table 4.35) showed that the existing land tenure systems in the ecosystem negatively influences community participation in

wildlife conservation in the ecosystem. The regression results (Table 4.35) showed that land tenure systems in the ecosystem have a direct effect upon community participation in wildlife conservation in the ecosystem with a positive standardized beta coefficient (0.608). The results show that 37 percent (R^2 = 0.370) of the variation in community participation in wildlife conservation in the ecosystem is explained by land tenure systems in the Amboseli ecosystem. However, increased application of the existing the land tenure systems (T = -0.536) appear not to encourage community participation in wildlife conservation due to reducing lands for wildlife arising from land subdivisions in the ecosystem.

In relation to land use systems, correlation results (Tables 4.27) and regression results (Table 4.35) showed that the existing land tenure systems in the ecosystem negatively influences community participation in wildlife conservation in the ecosystem. The results show that 26.5 percent (R^2 = 0.265) of the variation in community participation in wildlife conservation in the ecosystem is explained by land use systems. However, increased application of the existing land use systems (T = -0.712) appear not to encourage community participation in wildlife conservation due conflicts with pastoralism (the dominant socio-cultural and economic activity in the Amboseli ecosystem centering on cattle, goat and sheep) and farming. These findings lend much support to those of (Campbell et al., 2003) which found out that day- to- day competition for essentials particularly pasture, water and living space in addition to conflicts through loss of human life, livestock predation and property damage expand as human populations increase which creates challenges for contemporary conservation policies and practices in formulating workable compromises between wildlife conservation and the people who live with wildlife (Sen, 1999).

This study further considered land use systems in the ecosystem with the objective of establishing land use types compatible with wildlife. Results in Table 4.11 indicated that a substantial number of the respondents are engaged in livestock herding as an efficient form of land use accounting for 94 percent of all the respondents, 43 percent of the respondents indicated that they are engaged in human settlement activities such as commercial centers and accommodation facilities while 41 percent of the respondents surveyed were engaged in wildlife conservation.

However, findings in Table 4.12 indicate that parcels of land belonging to 47 percent of the respondents have been subdivided while 53 percent of them still holding free hold titles. Early research conducted in the Amboseli ecosystem suggested that the motivation for subdivision is driven by the community support to secure access to land and property rights (Campbell 1993), the fear of losing more land to outsiders (Western and Manzolillo-Nightingale 2004) and a way to end inequities of the group ranch system (Mwangi 2007; Rutten 1992).

According Okello, Seno and Wishitemi (2003), formation of group ranches gave groups of pastoralist's joint freehold title to large parcels of land with the intention that it would be collectively managed for the benefit of all the group ranch members, although livestock holdings remained private. The local Maasai communities eagerly embraced the group ranch approach, seeing it as a means of preventing further encroachment on their traditional land. This study established that ongoing subdivisions are transferring rights to land use decision from group ranch members to individual persons. These individual land use decisions are leading to poor management of resources embracing changes in land use decisions for individual gains.

Presence of wildlife in the region is limiting the large herds of cattle, shoats and donkeys access to protected areas and water sources heightening human wildlife conflicts as the people feeling constrained in their right of access to natural resource particularly pasture and water resources. This causes resentment among the community on wildlife confirming assertion by Springer, Campese and Painter (2011) that rights of indigenous people are often particularly relevant for conservation and sustainable use of natural resources. This explains the onset of land subdivision and confirms assertions by Seno and Shaw (2002) that the traditional Group Ranch system is breaking down through adjudication and subdivision and that irrigated agriculture has virtually gained stronghold in swampy areas in the ecosystem and rain-fed agriculture is marching down the slopes of Kilimanjaro into important seasonal wildlife habitat.

Table 4.28 shows that livestock production is compatible with wildlife conservation in the Amboseli ecosystem to a high extent with 11 percent, 12 percent and 77 percent saying that it

was compatible to a low, moderate and high extent respectively. This was confirmed by the overall average response being (mean = 8.1). This implies that livestock production has a significant compatibility with wildlife conservation in the Amboseli ecosystem. This in effect confirmed that coexistence between Maasai pastoral culture and wildlife in the ecosystem for over a long time and that livestock production is more compatible as it is easier to manage and integrate with wildlife (Campbell et al., 2003).

As shown in Table 4.28, farming is compatible with wildlife conservation in the Amboseli ecosystem to a low extent, with 44 percent, 30 percent and 26 percent saying that it was compatible to a low, moderate and high extent respectively. This implies that farming has no significant compatibility with wildlife conservation in the Amboseli ecosystem. The mean score was 3.8 ($1 \leq SE < 3.9$) indicating that farming was compatible with wildlife conservation in the Amboseli ecosystem but to a limited extent. These findings are similar to those of Wishitemi and Okello (2003) who reported that irrigated agriculture, often done up to the edge of watercourses, invariably removes all riverine vegetation to make room for crops and because agriculture uses up more of the water in the dispersal areas, the land becomes less viable for wildlife use.

Analysis of findings in Table 4.28 indicted that human settlement and centers were noted to be compatible with wildlife conservation in the Amboseli ecosystem to a moderate extent, with 20 percent, 55 percent and 25 percent saying that it was compatible to a low, moderate and high extent respectively. The mean score was 5.7 ($4 \leq SE < 7.9$). This implies that although the ecosystem is ideal for human settlement, it is not ideal for agricultural activities due to impending attacks of humans by wildlife and this requires controlled human settlements to engage in tourism activities. These findings lend much support to those of (Campbell et al., 2003) which found out that day to day competition for essentials particularly pasture, water and living space in addition to conflicts through loss of human life, livestock predation and property damage expand as human populations increase which creates challenges for contemporary conservation policies and practices in formulating workable compromises between wildlife conservation and the people who live with wildlife (Sen, 1999).

4.4.3 Implication of Wildlife policies and legal framework on community participation in wildlife conservation

The second specific objective of this study was to assess the implication of wildlife policies and legal framework on community participation in wildlife conservation in the Amboseli ecosystem. Statistical results in Table 4.29 on the respondents' take on benefits/liabilities associated with wildlife conservation in the ecosystem showed that wildlife conservation is beneficial in the ecosystem as indicated by 89 percent of the respondents asserting that wildlife conservation is economically beneficial as community members earn income from ecotourism ventures and sell artifacts to tourists, take photos with tourists and sing cultural songs for a fee and that the arid land is poor for any other practices. However, 11 percent of the respondents noted that wildlife conservation is not beneficial in the ecosystem due to competition for essentials particularly pasture, water and living space in addition to conflicts through loss of human life, livestock predation and property damage and that benefits not reaching the community.

However, findings indicated that 95 percent of the studied population asserted that presence of wildlife has been a cost to them alluding to the fact that the region experiences high cases of human wildlife conflicts with more of their shoats being predated upon by wildcats such as lions, leopards, jackals, hyenas and wild dogs with no compensation. As such, this study further sought to assess the implication of wildlife policies and legal framework on peoples' attitudes and perceptions towards wildlife conservation in the Amboseli ecosystem on a nominal scale where 1-3 represented 'Low' and 4-7 'Moderate' and 8-10 'High'. This study then used mean scores to measure the extent to which the Kenyan policy and governance practices have affected peoples' attitudes and perceptions towards wildlife conservation. Overall, findings indicate that respondents perceived that Kenyan policy and governance practices support wildlife conservation to a moderate extent with a composite mean score was 6.4 ($4.0 \leq ME < 7.9$) out of a possible 10. This implies that there is a perception that the national policy framework does not conclusively provide guidance for making wildlife conservation a viable land use option. These findings calls for the operationalization of Sessional paper No 3 of 1975, (Republic of Kenya 1975) which presented an approach to conservation that accepts wildlife management as a legitimate form of land use in protected areas as well as in

the dispersal areas. Despite these provisions, the government has never implemented them since enactment. As a result, the local community perceives wildlife conservation programmes as lacking the requisite policy directions to guarantee optimal benefits for their continued coexistence with wildlife in the region. This therefore calls for an integrated and adaptive ecosystem management approach to sustain wildlife and habitat diversity by empowering the local community to take control of their natural resource, secure their livelihoods and protect their communal land and environment. This implies that there is inadequate policy on the ground that seeks to balance the needs of the local people in the ecosystem with opportunities for sustainable wildlife conservation and management through community involvement for economic benefits as well as securing additional space for wildlife.

Correlation results (Table 4.32) and regression results (Table 4.35) showed that Kenyan wildlife policies and legal framework moderately influences community participation in wildlife conservation in the ecosystem. The regression results (Table 4.34) showed that provisions in the Kenyan wildlife policies and legal framework have a direct effect upon community participation in wildlife conservation in the ecosystem with a positive standardized beta coefficient (0.390). The results show that 15.2 percent ($R^2 = 0.152$) of the variation in community participation in wildlife conservation in the ecosystem is explained by provisions in the Kenyan wildlife policies and legal framework. Analysis of these findings indicate that implementation of the Kenyan wildlife policies and legal framework would encourage community participation in wildlife conservation ($T = 3.265$).

4.4.4 Incentives for enhanced community participation and securing more space for wildlife conservation

The third and final specific objective of this study was to identify incentives for enhanced community participation and securing more space for wildlife conservation in the Amboseli ecosystem on a ten-point nominal scale where 1-3 represented ‘Low’ and 4-7 ‘Moderate’ and 8-10 ‘High’. This study then used mean scores to measure the extent to which various options for creating more space for wildlife conservation in the Amboseli ecosystem were recommended by the respondents.

Results in Table 4.33 indicated that adopting land use practices compatible with wildlife conservation, enumerating benefits/liabilities of wildlife outside Amboseli, enabling institutional arrangements that enhance wildlife conservation, enhanced benefit sharing and community rights and adoption of land use plan which guide land use types within certain areas are highly recommended measures for creating more space for wildlife conservation in the Amboseli ecosystem as the mean scores were within this range ($8.0 \leq ME < 10.0$) equivalent to was equivalent to 8.0 to 10.0 on the Likert scale. These findings supports those by Springer, Campese and Painter (2011) that rights of indigenous people such as rights to development and equal benefit sharing including rights to determine the development or use priorities and strategies on their lands, territories and resources and to benefit equitably from conservation and sustainable use of such areas are often particularly relevant for conservation and sustainable use of natural resources.

Findings indicated that that livestock production has a significant compatibility with wildlife conservation in the Amboseli ecosystem. Findings in Table 4.33 support assertions by McNeely (1993) that enhancing equitable sharing is key in securing more space for wildlife conservation and this calls for adoption of policies that that can necessitate development of marketing facilities for livestock, providing security against raids from wildlife, retain rights to graze an agreed number of livestock in the government controlled park. This in effect confirmed that coexistence between Maasai pastoral culture and wildlife in the ecosystem for over a long time and that livestock production is more compatible as it is easier to manage and integrate with wildlife (Campbell et al., 2003).

Maasai pastoralism is highly compatible with wildlife and the potential for the local communities to sustainably manage and benefit from this resource is promising. However, implementation of effective community participation in the management and conservation of wildlife in the Amboseli ecosystem faces political, cultural, and economic obstacles which will be critical in determining the outcomes of both conservation and community development efforts in the area of this study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study focused on the modalities for enhancing community participation in wildlife conservation in Amboseli Ecosystem with three specific objectives namely to examine land tenure and land use systems compatible with wildlife conservation in the Amboseli ecosystem; to assess the implication of wildlife policies and legal framework on peoples' attitudes and perceptions towards wildlife conservation in the Amboseli ecosystem; and to identify ways of securing more space for wildlife and enhance equitable benefit sharing accruing from wildlife conservation in the ecosystem. Primary sources of data were used in the study. Data was organized and analyzed using descriptive statistics and then presented in tables. This chapter presents a summary of the study findings and explores areas for further research in the field of community participation in wildlife conservation.

5.2 Summary

As discussed in chapter one, the threshold of this study was to examine the modalities for community participation in wildlife conservation through sustained community rights and benefit sharing in the Amboseli ecosystem. In order to fill the gaps in the literature, this study analyzed how to win space and reclaim the fragmented dispersal areas for wildlife conservation. This section presents a summary of the study findings in relation to study objectives.

5.2.1 Community Participation in Wildlife Conservation

The broad objective of this study was understanding community participation in wildlife conservation in Amboseli Ecosystem this was through analyzing levels of community participation in wildlife conservation. Results indicate that community participation in wildlife conservation in the Amboseli ecosystem is to a low extent. However, findings reveals that: communities are involved in wildlife conservation in the ecosystem; communities are involved in preparation of General Management Plans for the ecosystem; CBOs have the authority to manage wildlife on village land; Government supports formation

of community ecosystem management committees and that the local community participates in policy-making for wildlife conservation in the ecosystem but to a low extent. It was established that communities take initiative in conserving wildlife out of their own economic interest and that communities are involved in conservation education and awareness but to a moderate extent.

5.2.2 Effect of land tenure and land use systems on community participation in wildlife conservation

The first specific objective of this study was to examine the effect of land tenure and land use systems on community participation in wildlife conservation. Land tenure and land use systems yielded moderate and significant positive relationships with community participation in wildlife conservation. This implies that the existing land tenure and land use systems have a direct effect upon community participation in wildlife conservation in the ecosystem. However, the existing the land tenure (T = -0.536) and land use systems (T = -0.712) appear not to encourage community participation in wildlife conservation due conflicts with pastoralism (the dominant socio-cultural and economic activity in the Amboseli ecosystem centering on cattle, goat and sheep) and farming.

This study further sought to establish land tenure and land use systems compatible with wildlife conservation in the Amboseli ecosystem. It was established that livestock production has a significant compatibility with wildlife conservation in the Amboseli ecosystem. Findings indicated that the ecosystem is ideal for human settlement but not ideal for agricultural activities due to impending attacks of humans by wildlife and requires controlled human settlements to sustainably engage in wildlife conservation and tourism activities. In relation to farming, findings indicated that it has no significant compatibility with wildlife conservation in the Amboseli ecosystem.

5.2.3 Implication of wildlife policies and legal framework on peoples' attitudes and perceptions towards wildlife conservation

The second specific objective of this study was to assess the implication of wildlife policies and legal framework on community participation in wildlife conservation in the Amboseli ecosystem. The results showed that provisions in the Kenyan wildlife policies and legal

framework have a direct effect upon community participation in wildlife conservation. Analysis of findings indicated that the Kenyan wildlife policies and legal framework moderately influence community participation in wildlife conservation.

It was established that wildlife conservation is beneficial in the ecosystem as respondents pointed out that wildlife conservation is economically beneficial as community members earn income from ecotourism ventures and sell artifacts to tourists, take photos with tourists and sing cultural songs for a fee and that the arid land is poor for any other practices. In addition, it enhances conservation of nature which attracts tourists to the region who offer grants for development of the region in addition to construction of schools, health facilities and provision of bursaries to school going children from the region. However, some respondents noted that wildlife conservation is not beneficial in the ecosystem due to competition for essentials particularly pasture, water and living space in addition to conflicts through loss of human life, livestock predation and property damage and that benefits not reaching the community.

Findings indicate that respondents observed that Kenyan policy and governance practices support wildlife conservation to a moderate extent. This implies that there is a perception that the national policy framework does not conclusively provide guidance for making wildlife conservation a viable land use option. In addition, it was established that the Kenyan policy and governance practices provides guidelines for establishment of community conservancies, provides framework for lease agreements for land management structures in the ecosystem, provides guidelines for establishment of eco-tourism ventures, provides guidelines for formation of conservation associations to promote rights of conservancies in the ecosystem, provides guidelines for management planning for the ecosystem but to a moderate extent.

5.2.4 Incentives for enhanced community participation and securing more space for wildlife conservation

The third and final specific objective of this study was to identify incentives for enhanced community participation and securing more space for wildlife conservation in the Amboseli ecosystem. It was established that more space for wildlife conservation is required so as to secure the ecosystem for sustainability to provide resilience to critical ecosystem services.

Statistical results indicated that adopting land use practices compatible with wildlife conservation, enumerating benefits/liabilities of wildlife outside Amboseli, creating enabling institutional arrangements that enhance wildlife conservation, enhanced benefit sharing and community rights and adoption of land use plan which guide land use types within certain areas are highly recommended measures for creating more space for wildlife conservation in the Amboseli ecosystem.

However, there were no significant benefits to local community from tourism or wildlife resources and that the government and tourism investors were the sole beneficiaries despite assertions that revenue sharing from the government controlled Park is the most viable option to utilize wildlife in the area and that community sanctuaries and cultural Manyatta's are determinants in individuals' coexistence with wildlife as they collectively create a tourism package in the ecosystem.

Equitable sharing of benefits from wildlife conservation to the rural community in the Amboseli ecosystem would be enhanced by ensuring that benefits from wildlife conservation are used to develop the region through enhanced corporate social responsibility activities leading to infrastructural development in the area. It was established that such activities need to focus on road construction, construction and equipping of schools and health facilities, provision of bursaries to needy school going children and drill water boreholes to enhance water reliability in the region.

Equitable sharing of benefits from wildlife conservation would be enhanced through enactment of compensation programs in which the government compensates livestock predation based on the market values in addition to compensation for property damages, employment of community members, direct payment of cultural services rather than through drivers, revenue sharing from park collections, establishing conservancies as most dispersal areas are in community lands and quick response to incidences of human wildlife conflict.

5.3 Conclusions

5.3.1 Theoretical Conclusion

The study measured various objectives developed out of the existing literature on the modalities for enhancing community participation in wildlife conservation with data collected from household heads in Kimana/ Tikondo and Olgulului/Ololarrashi group ranches. In addition, opinion was sought from key informants, direct observations, and researcher's participation in local meetings with community members and local conservation non-governmental organizations.

This study was informed by the Social exchange theory as advanced by Blau (1964) whose premise is that interactions are only likely to continue if both parties feel they are coming out of the exchange with more than they are giving up–that is, if there is a positive amount of profit for both parties involved. The need to reciprocate for benefits received in order to continue receiving those serves as a "starting mechanism" of social interaction. Rewards and costs are important concepts that form the basis of most social exchange theories. Rewards are exchanged resources that bring pleasure and satisfaction, while costs are exchanged resources that are perceived as a loss or punishment. The land owners in Amboseli ecosystem would benefit directly from leasing their land for biodiversity conservation and by way of reciprocity would forfeit all other rights to use the leased land for conservation only and not engage in other activities that are detrimental to their coexistence and provide space for wildlife conservation to thrive.

With proper land use policies in the area, the local community would like to continue having wildlife on their lands. This confirms the view by Irandu (2003) that the fundamental cause of declining wildlife populations and biodiversity loss is that the Maasai communities who live around Amboseli National Park have little economic or social interest in wildlife due to centralized management and financial benefits which are directed primarily to the Kenyan state.

Due to the economic significance of Amboseli National Park, the Kenya government as well the County Government of Kajiado will not watch as wildlife dispersal areas outside the park

boundaries shrink at an alarming rate due to changing land use activities and a growing human population pressure, aggravating human wildlife conflicts as this will affect the socioeconomic status of the population in the area. Results from this study reveal that the future survival of the park to a large extent is dependent upon the collaboration and partnership of Kenya Wildlife Service (KWS), with representatives and members of the group ranches that own land in the areas surrounding the Park. Respondents indicated that they expect management of the wildlife resource in the ecosystem to be inclusive and involve the local communities hence continued wildlife existence in the area.

The study also established that the future of wildlife conservation in the Amboseli ecosystem is bright as a result of the Corporate Social Responsibility (CSR) activities by the Kenya Wildlife Service whose thematic areas in the region include water, education and health. Various CSR projects done by KWS have been initiated within the Amboseli ecosystem which attempted to increase the involvement of local people in natural resource management decisions and in generating economic returns from wildlife based enterprises. This to some extent motivates the local communities to continue hosting wildlife on their land. This qualifies the social exchange framework that the land owners in Amboseli ecosystem would benefit directly from leasing their land for biodiversity conservation and by way of reciprocity would forfeit all other rights to use the leased land for conservation only and not engage in other activities that are detrimental to their coexistence and provide space for wildlife conservation to thrive.

On the contrary, some respondents indicated that the future of wildlife conservation in the ecosystem was bleak due to lack of community involvement and direct benefit from conservation programs, prolonged compensation procedures for human death and human injuries caused by wildlife, increased poaching and human wildlife conflicts in the area, climate changes, water scarcity in the protected areas as well as changing land uses and increasing human populations and settlements which are leading insularization of Amboseli national park. As such, the community is likely to switch to other forms of land use as they see wildlife conservation as not being beneficial. Irandu (2003) noted that, communities which feel that they do not derive any benefits from wildlife on their land have little

incentive to conserve that wildlife. Wildlife conservation in ANP is unlikely to succeed unless it is able to enlist the support of reserve-adjacent dwellers.

5.3.2 Empirical Conclusion

The communities living around ANP will seek to experience a sense of reciprocation through their involvement in conservation activities to ensure that they receive returns for leasing or putting easements on their land for wildlife use only, while the conservation agencies have to ensure that payment for easement and leases is sustained.

Results from this study shows that, human activities within the Amboseli ecosystem have led to widespread habitat fragmentation, reduction in wildlife distribution range, shrinking of dry season dispersal areas, blockage of migratory route/corridors and increased human-wildlife conflicts due to competition for resources such as water, forage and space. The vast areas of pristine wildlife habitats have been lost or degraded as a result of land subdivisions to individual private properties and conversion of rangelands to crop cultivation and subsistence use. In other cases, uncoordinated fences have been erected that have created barriers to seasonal movements of animals. Consequently, the ecological limitation of the ecosystem calls for the management of wildlife resource in an inclusive manner involving the local communities.

5.4 Recommendations

This study makes a number of recommendations for policy that need to be put on place to enhance community participation in wildlife conservation and win more space for wildlife conservation. The study has also made recommendations on areas that more research need to be undertaken on.

5.4.1 General Recommendations

While the Government has accepted community participation approaches in the management of natural resources that provide rural communities with secure tenure of their natural resources, the commitment to develop appropriate supporting legislation and technical capacity has been lacking. In fact, even where legislation is in place, rights of access to and use of natural resources have not been clearly defined. Communities have not received the

necessary assistance to develop capacity to independently carry out their conservation activities. The result is that communities are unable to realize the optimal benefits from the wealth of resources on their lands.

A significant proportion of the Maasai community concurred that wildlife is beneficial to them. This study however found out that some respondents had not fully associated wildlife with any benefits for their livelihoods despite evidence that wildlife had contributed to the economic status of the region. This study recommends increase in public education awareness on conservation and wildlife management matters and also emphasizes the need for consultations with and the consent of landowners when designating areas that need protection as wildlife dispersal areas or migratory routes/corridors within their properties

5.4.2 Recommendations for Policy

- Management of the wildlife resource in the ecosystem has to be inclusive and involve the local communities. In order to meet the conservation goals and local community's livelihood needs, the increase of public education and awareness on conservation and wildlife management is critical.

- Policies and legislation such as the Land Use Policy and the draft Land Act (2012), the draft Land Registration Bill (2012), Wildlife Conservation and Management Draft Bill (2013) should be used to secure conservation areas through easements, leases, outright purchase by the government or other organization, as well as use of economic instruments that ensures payment for ecosystem services.

- Measures for the establishment of more community based conservation projects such as creation of communal conservancies must be explored. Communal conservancies could be a mitigation measure of the current and ongoing land subdivision in Amboseli. These ecotourism investments should be managed to reduce exploitation of the local communities and improve equitable distribution of tourism benefits with investors.

- Empower and enable communities to come up with land use plans within the group ranches where wildlife areas will be zoned and reserved specifically as wildlife management areas

- Initiate land banking and direct land purchases. Land Banking for Conservation programs need to be effected in which land required for present and future needs is reserved to mitigate against fragmentation of wildlife habitats and degradation. Conservation organizations may lease land at market prices from landowners or group ranch members so that it may be set aside for wildlife. Outright land purchase for conservation using the Lake Nakuru Model in which KWS purchased land around Lake Nakuru and amalgamated it into the Deed Plan for the Lake Nakuru National Park.

- Donor funding to support these social development initiatives is needed in almost all the group ranches. The group ranches themselves must however devise their own initiatives for funding. The Amboseli ecosystem and the wildlife resources found therein is their heritage. The group ranches must play a significant role in protecting their own natural resources by establishing a Conservation trust which is nonprofit outfit that can qualify for donor funding if its main objects are to conserve wildlife and wildlife habitats for promotion of sustainable development. The establishment of a conservation trust by all the members of the group ranches will go a long way in promoting conservation.

- Enhanced Inter-departmental Linkages. A mechanism needs to be established to coordinate the efforts of the multiple actors towards securing of the priority corridors and for resource mobilization and accountability.

- Communities who host and interact with wildlife on their lands should be considered by the national exchequer in the revenue sharing formula for resource allocation and revenue sharing as a reward for continued existence and conservation of wildlife for a sustained tourism sector.

5.4.3 Areas for Further Research

It is clear that there is changed land use in the ecosystem which is likely to lead to rangeland degradation and displacement of wildlife in the ecosystem. Further research need to be done to specifically identify remedies to the ongoing rangeland degradation and displacement of wildlife in the ecosystem.

Owing to the fact that the ecosystem is witnessing establishment of human settlements and commercial centers, trends in human population and development, and monitoring of human settlement cluster expansion around Amboseli should be consistently done so that appropriate recommendations can be made to limit the effects of development on wildlife dispersal areas.

Results indicated that adopting land use practices compatible with wildlife conservation, enumerating benefits/liabilities of wildlife outside Amboseli, creating enabling institutional arrangements that enhance wildlife conservation, enhanced benefit sharing and community rights and adoption of land use plan which guide land use types within certain areas are highly recommended measures for creating more space for wildlife conservation in the Amboseli ecosystem. Research on benefit sharing and impacts on livelihoods is necessary to adapt policies and devise strategies that bring genuine and more equitable distribution of wealth.

Finally, different ecosystems have unique land use types reminiscent of the adjacent communities. Thus, it is recommended that similar studies to be done are customized to other terrains for comparison and generalization of findings applicable to all wildlife ranges and ecosystems.

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APPENDICES

Appendix I: Interview Schedule

1. Category
   a) Group Ranch ( )
   b) NGO ( )
   c) CBO ( )
2. If group ranch, state distance from park boundary.....
3. Age of the head of the household
   a) 24 - 45 years ( )
   b) 45 – 55 years ( )
   c) 55 – 65 years ( )
   d) >65 years ( )
4. Type of homestead:
   a) Permanent ( )
   b) Thatched ( )
   c) Manyatta ( )
5. What is your primary source of livelihood strategy
   (Explain)……
   ……
   …….
6. What are the sources of the house hold income (tick as many as possible)
   a) Pastoralism ( )
   b) Farming ( )
   c) Ecotourism ( )
   d) Others
   (Explain)……
   ……

7. Average annual household income:
    a) Kshs. <20,000 ( )
    b) Kshs. 20,000 – 50,000 ( )
    c) Kshs. 50,000 – 1000,000 ( )
    d) Kshs. >100,000 ( )
8. Land ownership:
    a) Individual ( )
    b) Communal ( )
    c) Group Ranch ( )
    d) Lease ( )
9.
    a. Is your land subdivided/under subdivision?
        a) Yes ( )
        b) No ( )
    b. If yes, what are/were the reasons for subdivision?

    ……

    ……

    ……

    ……

    ……..

    c. What are the consequences of the land subdivision on pastoralism in Amboseli?
        a) .....
        b) .....
        c) .....
        d) .....

10. On a scale of 1-10 (where 8-10 – High; 4-7 – Moderate; 1-3 – Low) how would you rate the consequences of the land subdivision on Wildlife Conservation in Amboseli?

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Increased cases of human wildlife conflict										
Diminished livestock grazing areas										
Inaccessibility of dry seasons grazing										

Statement	1	2	3	4	5	6	7	8	9	10
areas										
Going long distances in search of water and pasture										
Reduced herd sizes										
Frequent droughts and livestock deaths										
Land degradation										
Combination (specify)										
Others (Specify)										

11. How has land subdivision altered customary way of resource governance among the community in Amboseli Ecosystem?
    a) .....
    b) .....
    c) .....
    d) .....
12. Is the parcel of land fenced?
    a) Yes ( )
    b) No ( )
13. If yes, what is the type of fence around the land parcel?
    a) Natural ( )
    b) Electric ( )
14. What are the land use types on your land parcel?
    A) Agriculture ( )

Crop type	Acreage

    B) Livestock production ( )
    Cattle ( ) Shoats ( ) Donkeys ( ) Camel ( ) Others:
    Please Specify.....
    C) Human Settlement ( )
    D) Wildlife conservation ( )
15. Has presence of wildlife been a cost to you……..

(Explain)……

……

……..

16. What is your opinion on wildlife conservation and tourism in this region
(Explain)……

……

……..

17. Do you believe that wildlife conservation is the appropriate land use type in this area?
    a) Yes ( )
    b) No ( )

    Give reasons for your opinion.....
    .....
    .....

18. Do you believe that the land use types in this area are compatible with wildlife conservation in this ecosystem?
    a) Yes ( )
    b) No ( )

    Give reasons for your opinion.....
    .....
    .....

19. On a scale of 1-10 (where 8-10 – High; 4-7 – Moderate; 1-3 – Low), to what extent is the local community involved in wildlife conservation in this ecosystem?

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Community involvement in wildlife conservation in the ecosystem										
Communities take initiative in conserving wildlife out of their own economic interest										
Communities are involved in preparation of General Management Plans for the ecosystem										

Statement	1	2	3	4	5	6	7	8	9	10
CBO have the authority to manage wildlife on village land.										
Community involvement in conservation education and awareness										
Government supports formation of community ecosystem management committees										
The local community participates in policy-making for wildlife conservation in the ecosystem										

20. On a scale of 1-10 (where 8-10 – High; 4-7 – Moderate; 1-3 – Low), which land use types would you recommend in this area to be compatible with wildlife conservation in this ecosystem?

Statement	1	2	3	4	5	6	7	8	9	10
Farming										
Livestock production										
Wildlife Conservation										
Human settlement and centers										
Combination of land uses (specify)										
Others (Specify)										

Give reasons for your opinion.....

.....

.....

21. On a scale of 1-10 (where 8-10 – High; 4-7 – Moderate; 1-3 – Low) state how the Kenyan policy and governance practices has affected peoples' attitudes and perceptions towards wildlife conservation in the Amboseli ecosystem based on the following

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Policy supports formation and operation of group ranches										
Policy provides guidelines for establishment of community conservancies										
Policy provides framework for lease agreements for land management structures in the ecosystem										
Policy provides guidelines for establishment of eco-tourism ventures										
Policy provides guidelines for formation of conservation associations to promote rights of conservancies in the ecosystem.										
Policy provides guidelines for management planning for the ecosystem										

22. Do you consider wildlife conservation beneficial?

a) Yes ( )

b) No ( )

Give reasons for your opinion.....

.....

.....

23. On a scale of 1-10 (where 8-10 – High; 4-7 – Moderate; 1-3 – Low), what ways would you like to see wildlife utilized in this area

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Revenue sharing from government controlled Park										
Community Sanctuary										
Traditional uses										
Cultural Manyatta's										
Lodge and Camps										
Hunting										

24. What measures can bring an equitable sharing of benefits from wildlife conservation to the rural community.

    a) .....
    b) .....
    c) .....

    Give reasons for your opinion.....
    .....
    .....

25. What is the future of wildlife conservation in this ecosystem?

    .....
    .....
    .....

    Give reasons for your answer in above.....
    .....
    .....

26. On a scale of 1-10 (where 8-10 – High; 4-7 – Moderate; 1-3 – Low), what are the options for creating more space for wildlife conservation in the Amboseli ecosystem?

Statement	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Adopt land use practice that are compatible with wildlife conservation										
Enumerate the Benefits/liabilities associated with the presence of wildlife in the areas outside Amboseli										
Enabling Institutional arrangements that enhance wildlife conservation in the areas outside Amboseli										
Enhanced Benefit sharing and community rights										
Adoption of land use plan which guide land use types within certain areas										
Others (Specify)										

Give reasons for your opinion.....

.....

.....

Appendix II: Focused Group Discussions

Focused group discussions will be conducted in order to obtain information on:

- Past (traditional) and present land use systems
- Reasons for land use change (if any)
- Land use that will be compatible with wildlife conservation
- Existence of any ecotourism projects within the community land
- Type of crops grown and livestock kept on the wildlife dispersal area;
- Views of local communities on potential conflicts with wildlife species;
- Local communities attitude towards wildlife conservation
- Benefits/liabilities associated with the presence of wildlife in the areas outside Amboseli National Park compared to other land use systems
- Existing Institutional arrangements (if any) and their roles
- Benefit sharing and community rights

Meetings will be conducted using a participatory approach with opinion leaders and key informants in the village. The village committee officials may provide guidance on interviewees using the language they can understand. Responses will be summarized and entered into data sheets**.**

Appendix III: Research Permit

KENYA WILDLIFE SERVICE

ISO 9001:2008 Certified

Winner : COYA 2010 Awards in Corporate Citizenship & Environment, and Human Resource Management.

KWS/BRM/5001

3 January 2013

Michael Limo Kipkeu
Kenya Wildlife Service
P.O Box 40241
NAIROBI

Dear Michael,

PERMISSION TO CONDUCT RESEARCH IN AMBOSELI ECOSYSTEM

We acknowledge receipt of your application requesting for permission to conduct research on a project titled: '*Community Participation in Wildlife Conservation in Amboseli Ecosystem*'. The study will generate data and information to assist you undertake academic research in Masters of Art Degree.

You will submit a copy of your M thesis to the KWS Deputy Director, Biodiversity Research and Monitoring on completion of the study.

Yours Sincerely

SAMUEL M. KASISKI, PhD. OGW
DEPUTY DIRECTOR
BIODIVERSITY RESEARCH AND MONITORING

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