

Local communities, biodiversity conservation and ecotourism: a case study of the Kimana Community Wildlife Sanctuary, Kenya

Dr Stanley M. Makindi
Lecturer, Department of Environmental Science
Egerton University, Kenya
mankindsm@gmail.com/ smakindi@egerton.ac.ke

Abstract

Protected areas in Kenya constitute 7% of the total land area with over 75% of wildlife in the country being found on private or communal land. Rural communities in Kenya, where protected areas generally exist, face a range of development issues with limited resources and livelihood opportunities. In this context, community-based biodiversity conservation has the potential to promote ecotourism opportunities which can reconcile and sustain economic development with biodiversity conservation and sharing the costs and benefits of conservation. This study examined biodiversity conservation and ecotourism issues using the case study of the Kimana Community Wildlife Sanctuary which is communally managed protected area. The research explored the socio-economic profile of locals residing in close proximity to the protected area. Economic and livelihood activities (with a focus on those that are ecotourism-related) were looked at together with other perceived benefits associated with the protected area and ecotourism. Levels of understanding of key environmental concepts (biodiversity, conservation and ecotourism) were also considered. Additionally, perceptions and attitudes towards biodiversity conservation and ecotourism in the area were assessed. A total of 100 households were interviewed. The main findings were that there was considerable support for biodiversity conservation and ecotourism among the respondents, although concerns were raised in relation to both complementary activities. There was, however, limited understanding of key environmental concepts. Key benefits were associated with employment opportunities (including tourism-related businesses), service and infrastructural development, and support for local community development projects.

Keywords: Biodiversity conservation, ecotourism, local communities, Kimana Community Wildlife Sanctuary, Kenya

Introduction

Biodiversity broadly refers to the variability among living things and the ecosystems that support them. Wishitemi, Momanyi, Ombati and Okello (2015) state that in attempts to conserve the environment, many governments (including Kenya) have designated wildlife protected areas. The Biodiversity Support Programme (BSP, 2001), Bob, Bronkhorst and Sala (2014) and the World Resources Institute (WRI, 2005a) highlight the importance of biodiversity to human well-being by maintaining that it provides subsistence and economic goods for local people as well as the underlying conditions necessary for the delivery of ecosystem services to people living in and around them, and to the society as a whole. The Millennium Ecosystem Assessment (WRI, 2005b) identifies four categories of these services. The first category, "provisional services", includes the services that yield natural products such as food, fresh water, fuelwood and herbal medicines that have direct use to rural communities. However, legally these products would only be accessible to local people living in and around those protected areas that allow the sustainable harvesting of such resources (WRI, 2005b). The other three categories of ecosystem services include: regulating services (that is, benefits from ecosystem services such as climate regulation, watershed protection, coastal protection, water purification, carbon sequestration and pollination); cultural services (for example, religious values, tourism, education and cultural heritage); and supporting services (for example, soil formation, nutrient cycling and primary production) (WRI, 2005b). Manyara and Jones (2007) state that the United Nations World Tourism Organisation endorses tourism for economic development and poverty reduction in developing countries, emphasising the role of micro-, small- and medium-sized tourism enterprises.

Sustainable biodiversity conservation strategies that is acceptable to stakeholder groups call for ways to reconcile the contrasting goals of conservation highlighted by Mulder and Coppolillo (2005: 24) that entails “protectionism (that seeks to exclude human consumptive uses other than tourists advocated mainly in national parks) and utilisation (premised in community conservation initiatives including private reserves)”. The management approaches for each particular category of protected area should be advanced in relation to the environmental conditions as well as the socio-economic circumstances of the local communities in order to evolve a system that is suitable for each site. This is in recognition that different sites require different approaches to conservation. It is therefore important that research focuses on locally-based conservation strategies and assesses context specific dynamics. To this end, this article examines biodiversity conservation and ecotourism issues using the case study of the Kimana Community Wildlife Sanctuary which is communally managed protected area in Kenya.

Literature review

According to Fabricius, Koch, Turner, and Magome (2013), Kameri-Mbote (2005) and Okech and Bob (2009), African countries rely more on biological resources to a far greater extent for their subsistence and economic survival. This situation is echoed by Mulholland and Eagles (2002) who maintain that agriculture and wildlife-based tourism is, for instance, a significant foreign exchange earner for countries such as Kenya. Manyara and Jones (2007) argue that in Kenya, community-based tourism enterprises are preferred. In Kenya, for instance, wildlife-related tourism is one of the most successful in the developing world (Ogutu, 2006; Western, 1992), contributing about 13% to the overall gross domestic product (GDP) of the country (Government of Kenya, 2002a).

According to Osano, Said, Leeuw, Ndiwa, Kaelo, Schomers and Ogutu (2013) and Western (1992), the exclusion of rural communities in protected areas from ecotourism benefits in Kenya resulted in animosity from the local people and negative attitudes towards wildlife and conservation agencies. Magio, Velarde, Santillán and Ríos (2013) and Wells, Brandon and Hannah (1992) assert that the successful long-term management of protected areas depends on the involvement and support of local people. Wells *et al.* (1992: 2) further observe that it is “neither politically feasible nor ethically justifiable to exclude the poor who have limited access to resources from parks and reserves without providing them with alternative means of livelihoods”. It is therefore important to understand the complex and variable relationships between protected areas and surrounding local communities. More recent studies support the assertions made by Western (1992) and Wells *et al.* (1992). For example, Wishitemi *et al.* (2015) stress the importance of centralising local indigenous communities in relation to conservation planning agenda and within the ecotourism industry more generally. They, however, note that in spite of the recommendation that indigenous people's aspirations, rights and needs should be integrated in the conservation planning agenda, conservation benefits have been unequally shared and that a large proportion of the income from ecotourism taking place in protected areas never reaches the majority of the indigenous people. This concern is also raised by Magio *et al.* (2013). The critical role played by local communities in the management of protected areas has been broadly acknowledged by the conservation community, with the recognition that local communities must be involved, and their needs and aspirations considered if biodiversity conservation is to succeed.

The distribution of people and biodiversity highlights the potential for conflict between human development and the environment. While natural forces such as severe prolonged drought and other climatic changes have been identified as major causes of habitat change and environmental degradation (Mulder & Coppolillo, 2005), “their effect on biodiversity is not as alarming as that

caused by human activities” (Gitahi, 2005: 123). Many protected areas are experiencing serious and increasing threats of degradation as a result of large-scale development projects, expanding agricultural frontiers, illegal hunting and logging, fuelwood collection and uncontrolled burning. The underlying causes of these threats are complex, rooted both in our expanding society as well as the unfair ways that we share our resources (Magio *et al.*, 2013, Mulder & Coppolillo, 2005; Wishitemi *et al.* 2015). Poverty and inequality is a major driver of biodiversity loss that undermines biodiversity conservation (Stolton, Hockings, Dudley, MacKinnon & Whitten, 2003; Wishitemi *et al.*, 2015). Wishitemi *et al.* (2015: 306) specifically state that “declining agricultural productivity, rising population and a third of Kenya’s land surface area being arable” has resulted in encroachment on wildlife protected areas.

Lea, Wilson, Wild, Blockhus, Franks, McNeely and McShane (2004) and Western, Waithaka and Kamanga (2015) state that some of the world’s poorest countries have a significant proportion of their territories designated as protected areas in the most remote parts where the rural poor often live. This is also found in Kenya. In Kenya, like many other developing countries struggling with economic crises, Kameri-Mbote (2005) notes that government budgets are usually reduced and this has often decreased the ability to enforce environmental laws. This trend has eroded the legislative basis, political will, managerial capacity and financial resources for biodiversity conservation. In addressing resource use conflicts, wildlife legislation and regulations attempt to make provisions for community participation, land use and land tenure systems, income generation opportunities, compensation, tourism development, and access to dispute resolution mechanisms.

Tourism is one of the most important export industries in Africa which is mainly based on the renewable resources, most notably the continent’s impressive wildlife (Dieke, 2001; Magio *et al.*, 2013). Blangy and Mehta (2006 cited in Bob, Swart, Maharaj & Louw, 2008: 31) maintain that the fast pace of tourism around the world has caused untold damage to some of the most ecological systems. The notion held by some local communities in the past that wild animals are dangerous and do not benefit them, has been reversed by the birth of nature-based tourism or simply ecotourism. Ecotourism has become one of the fastest growing sectors of the tourism industry (Cater, 1994) illustrating the demand for nature as a tourism product and the desire for people to interact with and experience nature. Atieno and Njoroge (2015: 1) state that ecotourism is viewed as “green practice expected to address adverse outcomes of conventional tourism”. Ecotourism places emphasis on local management, education and on minimising the physical, social and cultural impacts of tourism. Similarly, Bob *et al.* (2008) contend that ecotourism incorporates sustainability principles that encompass the broad spectrum of diversity. They observe that ecotourism integrates biodiversity conservation with the sustainability of human communities. Furthermore, Wishitemi *et al.* (2015: 311) state that “ecotourism enterprises have adopted various initiatives ranging from cash payments to social services such as construction of health-care clinics and schools, as attempts aimed at mediating in conflicts between host communities and wildlife protected areas”.

Nature and culture-based tourism is promoted through many community conservation approaches with varying success and is often positioned as alternatives to mass tourism (Magio *et al.*, 2013). Mulder and Coppolillo (2005) and Mulholland and Eagles (2002) point out that it is one of the few alternative livelihoods based on sustainable use of protected areas that does have clear conservation benefits and indeed relies on the maintenance of habitats and species. Similarly, Shah and Irandu (2014) and Myers, Mittermeier, Mittermeier, da Fonseca and Kent (2000) further observe that ecotourism appears to present a significant potential opportunity of mobilising resources and generating revenue to fund biodiversity conservation and associated community development initiatives. This position is echoed by the Kenyan government who

contends that ecotourism has the potential of becoming a moderately useful tool for locally directed and participatory rural development based on a rational utilisation of tourism-based environmental and cultural resources (Government of Kenya, 1994). Kenya's Economic Recovery Strategy for Wealth and Employment Creation, 2003-2007 (Government of Kenya, 2003) identifies ecotourism as a key sector for poverty reduction and employment creation through increasing community involvement in tourism development. Wildlife as a resource plays an important role in the economic development of Kenya (Shah & Irandu, 2014). Gitahi (2005) points out that wildlife is the lifeblood of the tourism industry in Kenya, one of the country's largest earner of foreign exchange, but disliked by the local people for wreaking havoc on farms and ranches near the public reserves (Magio *et al.*, 2013; Muruthi, 2005). Tourism activities from non-consumptive utilisation of wildlife in Kenya contribute about 70% of the total earnings from the tourism sector (Sindiga, 1999). There are over 40 conservancies engaged in ecotourism activities spread around Kenya which are owned and managed by local communities.

There is still a significant gap between the potential of ecotourism and its actual contribution to protected area financing and local community livelihoods (Magio *et al.*, 2013). For example, Brandon (1996) indicates that although ecotourism may generate revenues and support for biodiversity conservation and benefits to rural communities, such benefits are not automatic. The author explains that they will be site-specific and dependent on unique visitor experiences, and communities will need investment and capacity building to provide and market visitor services. This argument is further presented by Mulholland and Eagles (2002) who contend that many of the economic benefits of tourism tend to be captured by commercial operators, mainly foreign companies that run organised tourism activities. They therefore point out that the majority of tourism income stays with the foreign company far from the remote rural areas where the nature tourism destinations are located. Mulder and Coppolillo (2005) indicate that for ecotourism to be justified, tourists should bring direct benefits to the destination area and there must be a mechanism for the money to stay in, or at least trickle down to, the local area. The authors further observe that it is therefore imperative to enhance legislation to ensure that local communities benefit directly from revenues collected by protected area authorities, for example, through tourist entry fees or hotel levies, and provide employment opportunities such as guides, rangers, hotel employees or in other related services.

The concept of community involvement in conservation activities gained support in Kenya in the 1980s (Western, 1982). The focus has been the introduction of new approaches to protected areas management and policy options targeting specific problems, regions or resource users that enhance the objective of biodiversity conservation, improve livelihoods and foster support for conservation from local communities. Several options have been highlighted for transforming wildlife into an economically useful resource and bridging the gap between community interests and wildlife conservation which include (Okello *et al.*, 2003: 62):

- providing consumption user rights to the local community;
- designing a proper land-use plan to allow multiple land uses that maximise community benefits; and
- encouraging communities to tap into the lucrative tourism industry by establishing their own community wildlife sanctuaries.

Community wildlife sanctuaries, as Okello *et al.* (2003) indicate, were established which confer to communities the rights to manage and benefit from wildlife and contribute to wildlife conservation in dispersal areas adjacent to protected areas.

Methods

The research data was collected from the local people at the household level in the Kimana Wildlife Community Sanctuary. The Kimana Community Wildlife Sanctuary is a group ranch located on communal land belonging to the Kimana Maasai within the Kajiado County, Kenya (Wishitemi & Okello, 2003). The conservancy is located within the dispersal areas of Amboseli National Park to the east and Tsavo West National Park to the west. According to the Conservation of Resources through Enterprise (CORE, 2001), the Amboseli/ Tsavo ecosystem is characterised with a semi-arid setting and topography of plains and some volcanic hills and an isolated swampy area that is important as a water point for both humans and animals. The area has a bimodal rainfall pattern (Government of Kenya, 2002b), significantly influenced by its high altitude (1 100 m above sea level) and its proximity to Mount Kilimanjaro and receives 30% of about its 150-200 mm annual rainfall during the short rains (October – December) and 45% during the long rains (March – May). However, Ellington (2007) asserts that this does not take into account the prolonged droughts that frequently plague this semi-arid region.

The settlement patterns within Kimana and its environs is characterised by Maasai landowners who were mainly semi-nomadic pastoralists; the traditional Maasai mode of life practised on land that was communally owned (Western, 1982). However, Southgate and Hulme (2000) point out that the Maasai traditional lifestyle has undergone changes due to ongoing land adjudication and subdivision of group ranches leading to individual land tenure systems. McCabe, Perkin and Schofield (1992) further observe that the Maasai have historically co-existed with wildlife for decades, seasonally moving about with their livestock in search of pasture and water. With the rapid human population in the area, Southgate and Hulme (2000) assert that the area is faced with the challenge of conserving wildlife amidst environmental concerns such as competition for resources, encroachment on water catchments and forest areas along the slopes of Mt. Kilimanjaro and the designated conservation areas like Amboseli National Park.

The Kimana Community Wildlife Sanctuary is the first community owned and managed wildlife sanctuary in Kenya which is viewed as a flagship that shows local community involvement in tourism enterprises. A range of habitats is found within the Kimana Community Wildlife Sanctuary such as a swamp, savannah plains and *Acacia tortilis* woodlands. This range of habitat, as highlighted in Western (1997), provides a foraging area as well as a migration corridor for wildlife in the larger Amboseli-Tsavo ecosystem that supports a diversity of wildlife including plains game like elephants, buffalo, lions, leopards, giraffe, gazelles and hippos that frequent the swamps and wetlands. During dry seasons the lush grass in the Kimana swamp has always attracted hundreds of these animals. Legally, the Kimana sanctuary is a group ranch property.

Household surveys were undertaken with 100 households in Kimana. The selection criterion for was that households should be within a distance of one kilometre from the protected area boundary, for their interaction with the park resources and authorities to be well manifested. The 100 respondents were identified from the sanctuary membership register (843 members) procured from the community committee. Using their register numbers, the respondents were then systematically randomly selected. The unit of analysis was the individual household, with the head of the household, or a delegate representative responding to the questionnaire. The questionnaire was both in English and Kiswahili with attempts made to translate the questions in the local language to ensure complete understanding and freedom during the interview. In order to determine the effectiveness of the research instrument, the questionnaire was pre-tested among ten local community members who were not included in the sampling frame. In terms of data analysis, questionnaires were collected and afforded individual codes for the fixed responses while for the open-ended questions, the themes were coded and captured into digital format.

Descriptive statistics using the Statistical Package for the Social Sciences (SPSS) was used to analyse the data.

Results

The results of the gender distribution of the community household respondents indicate that almost all the respondents were male (92%) with only 29% being female. The unequal gender representation in Kimana can be explained by the fact that the majority of the community respondents in the study area were Maasai. As explained by Bonner (1993), the Maasai society is male-dominated and organised by age sets, warriors and elders. A study by Southgate and Hulme (2000) in Kimana Group Ranch describes gender inequality among the Maasai as closely associated with resource ownership with a large proportion of the Maasai women denied group ranch membership and with it the opportunity to acquire property rights. A similar study by Coupe, Viv, Ogutu and Watson (2002) indicate that women are sometimes even marginalised in conservation interventions, for example, through inequitable distribution of benefits from ecotourism initiatives. This compares with a study by Baral and Heinen (2007) that indicate women had subordinate roles and less power in decision-making, and men are usually household heads.

With respect to age, the average age for the respondents was 51.7 years with the majority of the respondents being between 36-45 years. A study by Mburu and Birner (2002) in Kimana indicated a mean age of 45.09 for the household head in years, which is slightly lower than the findings in this study. The age is also reflective of status in the household. As Southgate and Hulme (2000) indicate, the age group system historically played an important role in the ownership and management of natural resources among local ethnic institutions in Kenya, where customarily, elders remain leaders, with the youth having little independent authority until they inherit power and influence with maturity. The results in relation to marital status shows that 93% of the respondents were married. Six percent of the respondents were widowed while only one respondent was divorced.

In response to the educational background, the majority of the respondents (80%) had no formal education while the rest only had up to junior high level education. Furthermore, only one respondent each indicated that they had technical training or a certificate. The low literacy rates can possibly be explained by the traditional orientation of the Maasai people who form the majority of the respondents (99%) in the area. According to Gichohi (2003), the Maasai community does not value education, especially for girls. For community conservation initiatives to be successful, the local people should be in a position to understand access issues and comprehend information on livelihood economic options, including seizing ecotourism opportunities. This position is echoed by Okello *et al.* (2003) who assert that where local communities are illiterate or have low levels of formal education, conservation outreach programmes through formal education will be less successful. It is therefore important for conservation strategies to intensify extension work and adult literacy programmes to the local communities as a vehicle to create awareness about the value of conserving biodiversity, promoting ecotourism and improving conservation attitudes (Infield & Namara, 2001). Moreover, Gichohi (2003) points out that illiteracy is a hindrance for most people to take advantage of opportunities available.

When asked for how long the respondents had resided adjacent to the protected area boundaries, 59% reported to have lived there for more than 25 years and 40% for 21-25 years. Only one person had resided elsewhere indicating a strong attachment of the local people (the Maasai) to this area. The long length of residence of the communities in their areas of origin shows that they are mostly established in the areas. The possible explanation to this may be that the attachment

to the areas developed through individual, group or cultural orientation. Vorkinn and Riese (2001) point out that the use of different areas is usually strongly related to the distance from place of residence and local inhabitants most likely use local resources, developing attachment to the local areas to a larger degree. Shumaker and Taylor (1993) observe that place attachment or belonging and dependency involve care and concern for the place. It is therefore expected that attachment to a place by certain groups of local communities would influence both the perception of and response to changes in the environment, and it could affect their attitudes toward any development including conservation and ecotourism initiatives. There was no case of insecurity or forced removals recorded by the Kimana respondents. The possible reason for this may be because the area is occupied by mainly one ethnic group as indicated earlier.

Asked about economic and livelihood activities, 98% of the respondents were formally unemployed while 99% were involved in pastoralism and 50% were involved in some form of business activity. Similar responses were found in relation to household income or livelihood strategies with the exception being that almost all the households (96%) also indicated remittances. The results clearly indicate that formal employment is almost non-existent and this reinforces the importance of considering community-based opportunities. Ecotourism provides one such avenue together with agricultural activities. The Masaai in particular are pastoralists. Mburu and Birner (2002) explain that livestock keeping is a major wealth determinant and a more important farming enterprise among the Maasai in Kimana. This entails keeping large herds of cattle, sheep and goats on free range grazing systems resulting in perennial conflicts with farm owners and protected area authorities for watering and grazing resources (Campbell, Gichohi, Mwangi & Chege, 2000). It is also important to note that agri-tourism has been gaining in prominence and can complement ecotourism activities. However, agriculture-wildlife conflicts can be exacerbated. As Campbell *et al.* (2000) observe, the expansion of cultivation and demarcation of areas for wildlife conservation altered access to water and grazing areas for the pastoral people intensifying competition and conflicts from different land uses. Among half of the respondents who indicated that they were involved in business activities, these were mainly linked to tourism and included selling curios, crafts and cultural artefacts to tourists, the sale of firewood and charcoal to camps and other accommodation establishments, and small income generating businesses such as the sale of farm produce or cooked food. Francis (2000) observes that rural populations in Africa have become more reliant upon multiple livelihoods. This suggests that the respondents in this study have access to a range of social, human and physical capital that has enabled them to create more substantial livelihood strategies.

In terms of the high reliance on remittances, this can be explained in relation to many landowners leasing their land for conservation. Coupe *et al.* (2002) further indicate that leasing of land to private organisations for tourism ventures brings income to the community members as this case study reveals. However, Emerton (2001) points out that most local communities surrounding parks engage in economic activities which threaten or deplete wildlife resources, for example, through resource over-exploitation, hunting and the clearance of habitat for agriculture. It is therefore critically important to create economic incentives to conserve wildlife that will ensure the local people are better off in financial and livelihood terms with wildlife than they would be without it. Ecotourism provides a vehicle for this to occur.

When asked to assess their household poverty level, 16% of the respondents assessed their household poverty level to be low, while 36% indicated it to be moderately poor. Thirty two percent stated high poverty levels with 16% recording very high poverty levels in their households. The Kenya National Development Plan (2002-2008) data on socio-economic indicators for Kajiado district (which includes Kimana) records absolute rural poverty level at 45%, citing landlessness and lack of basic services such as health, credit facilities as contributing factors (Government of

Kenya, 2002c). Furthermore, in this district, absolute rural poverty is reported to be 28% with frequent droughts, destruction of crops by wild animals and lack of basic services like health, education and access to credit facilities elicited as some of the contributing factors (Government of Kenya, 2002b). With high poverty levels it is worth noting that it is likely that communities will engage further in unsustainable resource extraction and protected area encroachment to sustain their livelihoods. Additionally, ecotourism and other ventures to increase income often require investments and start-up capital, and households with high levels of poverty are unlikely to be able to leverage resources in this regard. Poverty is a key issue raised by Wishitemi *et al.* (2015) as well who indicate that conservation and tourism has failed to substantially move local communities out of poverty in Kenya.

Respondents were asked about their understanding of various concepts in natural resource management including biodiversity, conservation and ecotourism relevant to Kimana. Generally, the overall level of understanding of these concepts among the respondents was found to be low as indicated in the Table below.

Table 1: Level of understanding of natural resources management concepts by community respondents (n=100, in %)

Response	Biodiversity	Conservation	Ecotourism
None	76	41	2
Vague	24	57	64
General	-	2	34
Detailed	-	-	-

Seventy six percent of the respondents indicated that they have no understanding of the concept of biodiversity, while 24% reported to have a vague idea of the biodiversity concept. Forty one percent of the respondents stated that they did not understand what conservation entails, while 57% indicated to have a vague understanding of the concept of conservation. Two percent of the respondents reported to have a general understanding of the concept of conservation. In terms of the concept of ecotourism, 2% of the respondents recorded no understanding of the ecotourism concept, while 64% indicated that they have a vague understanding of ecotourism. Another 34% of the respondents stated that they have a general understanding of ecotourism. None of the respondents stated that they have a detailed understanding of any of the concepts. This tends to reinforce the overall impression that the surveyed community members in Kimana have low literacy levels. For the local people to participate in long-term conservation and ecotourism initiatives they should possess adequate information and knowledge in basic conservation related concepts and frameworks. Knowledge of key environmental issues and appropriate management mechanisms are known to influence local peoples' attitudes towards environmental management strategies (Wearing & McDonald, 2002).

Biodiversity resources in the area are the bedrock of successful and sustainable ecotourism initiatives in Kimana. Of concern is that 83% of the respondents perceived the state of biodiversity in Kimana as threatened while 3% stated rare and 14% stated abundant. Yet, the community has a range of strategies in place that are focused on protecting the environment. For example, 99% of the respondents stated that indigenous conversation practices are in place which include a council of elders or group ranch committee who was in charge of instituting the traditional natural resource management systems, implementation of religious/ cultural values and fines/ penalties to offenders. A substantial number of respondents (35%) supported the perception that the decline of biodiversity was as a result of threats by activities of the local communities which was linked to wildlife poaching by the local people and over-reliance of the local people on natural resources for the provision of their basic goods and services. Additionally, 47% of the respondents stated that population increases in the area was a major threat and 44% noted subdivision of

group ranches. Furthermore, the main community conservation initiatives that exist in the area were involvement in group ranch and wildlife conservation sanctuaries (100%), agroforestry approaches such as tree planting and bee keeping (70%) and collaborative management with other conservation agencies operating in the areas (77%).

A key aspect when looking at communities and ecotourism as well as biodiversity efforts is employment opportunities in protected areas. Half of the respondents indicated that a member of the household was working in the protected area. Unlike National Parks in Kenya where the number of local people working in the park is low because management is centralised and recruitment is done at the national level, in Kimana there is a higher employment of the local people, for example, as game scouts drawn from the local communities. Additionally, Kimana is located in areas where wildlife roam freely outside government parks to private and communal adjacent lands, thus the importance to enlist support of the local people in the management of these types of protected areas. It is important to note that the jobs were as labourers, drivers and security guards that are generally low paying jobs. Furthermore, only 10% were permanent while the rest were seasonal (19%) or casual (21%). Thus, the jobs are generally low-paying.

All respondents supported the view that the introduction of the protected area in their community had positively changed the state of local biodiversity and created opportunities. This could be attributed to Kimana having open interaction with the protected area which is not fenced while other protected areas are fenced. Furthermore, in relation to the question whether the introduction of the protected area had positively changed the state of biodiversity, all the respondents also indicated that conflicts with wildlife have reduced and therefore the wildlife is safer. Additionally, all the respondents indicated that the protected area authorities supported local community development programmes. The main types of programmes identified were educational, health, infrastructural developments, housing facilities, water provision and livestock vaccination services. In Kimana, the land under conservation is community property in dispersal areas adjacent to national parks. According to Okello *et al.* (2003), the sanctuary was established to confer to the communities the rights to benefit from wildlife conservation through support of local development programmes such as boreholes for water supply (Wells *et al.*, 1992) in compensation for loss of access to watering points within the sanctuary and construction of hospitals, cattle dips and schools as well as opportunities for jobs as incentives to tolerate wildlife in their lands. Support for local community development programmes subscribes to the basic principle that conservation goals will succeed only if local people access alternative benefits to offset the costs of their reduced access to resources in the protected areas (Abbot, Thomas, Gardner, Neba & Khen, 2001).

While benefits were noted, when respondents were asked about their views on government policies and institutions relating to protected area conservation, the majority of the respondents indicated that they are inadequate (76%) and unfair to the local people but biased towards the welfare of wildlife and foreign tourists (86%). A similar study by Weladji, Moe and Vedeld (2003) in Cameroon found out that the respondents had reservations on the wildlife policy because their present interests were not met and that the policy benefited mostly foreigners. Western (1992) also observes that wildlife management policies have a tradition of managing animals rather than people. Forty six percent of the respondents recorded that the institutional and policy framework enhanced tolerance of wildlife in private lands while 20% stated that the policies and institutions are good if effectively implemented. However, 81% of the respondents indicated that they need to be revised.

Respondents were asked to identify the main benefits of living next to the respective protected areas which is an ecotourism site. The results are encapsulated in the Table below. The main

benefits identified were social amenities (97%), see and know wildlife (87%), business opportunities (86%), help with transport (77%) and interaction with tourists (56%). The results indicate that key benefits are associated with the biodiversity itself and opportunities presented.

Table 2: Benefits of living next to the protected areas (multiple responses - in %)

Response	Kimana (n=100)
See and know wildlife	87
Help with transport	77
Get firewood	1
Business opportunities	86
Interaction with tourists	56
Social amenities	97

In terms of attitudes towards attitudes towards tourists visiting the area, all the respondents stated that they are excited by tourists visiting the areas. However, when asked about potential problems that can be associated with tourism the majority noted concerns which included potentially creating a dependency syndrome among the local people for handouts (81%), erosion of their indigenous cultural values (80%), misconduct by some tourists as having a bad influence on the youth (80%) and focus directed towards tourism developments that favour tourists while neglecting the needs of the local people (13%). Thus, this study supports the literature that indicates that there can be negative impacts of tourism related to biodiversity conservation which was echoed by the respondents in this study. It further reinforces Western *et al.*'s (2015: 59) assertion:

Devolving the rights and responsibilities for biodiversity conservation from national to local levels calls for resuscitating the incentives and skills for making wildlife an important component of livelihoods, based on maximising the benefits and minimising the costs and conflicts.

Conclusion

The study focused on an assessment and description of the community characteristics and their perceptions in relation to biodiversity conservation and ecotourism in the Kimana Community Wildlife Sanctuary in an attempt to provide insights pertaining to issues and concerns about sustaining protected areas while at the same time supporting community livelihoods and income generating opportunities linked to ecotourism. Thus, the intention is to promote the dual goal of conserving biodiversity and improving the livelihoods of the local people. The analysis and discussion of the results indicated that there were positive attitudes towards biodiversity conservation and ecotourism in Kimana (including interactions with tourists and protected area management), although limited understanding of key environmental concepts were noted. However, there were concerns raised regarding direct benefits to local communities and potential negative impacts associated with tourism including creation of a dependency syndrome on handouts among the local people, and erosion of indigenous cultural values through misconduct and bad influence. The study also reveals the current levels of poverty and low educational levels in the community could mitigate against members taking full advantage of existing ecotourism opportunities as well as creating and sustaining new or more widespread prospects. Protected areas also have community benefits which included support of local community development projects such as education programmes, health facilities, job opportunities, infrastructure development, housing, water provision, ecotourism-related businesses and livestock vaccination services.

The findings in this study reveal very minimal employment opportunities for members in the case study protected area. The respondents expressed the need for the protected area to provide more opportunities for direct employment of the local people. The form in which benefits are shared should be in a way that provides secure livelihoods to the majority of community members as well as enough to compensate for loss in resource utilisation in the protected area and wildlife damage. Emphasis should be on how to create more income generating opportunities that can interface with conservation initiatives and interaction with tourists. For example, local communities using the biodiversity and landscape of protected areas can promote small, medium and micro enterprises (SMMEs) related to ecotourism facilities such as selling curios, artifacts or cultural exhibitions to tourists.

The results of this study indicate that there is a need to increase local people's access to benefits from the protected areas and/or more involvement in resource management in order to enhance their support for conservation and sustainability of the protected areas as well as increase benefits from ecotourism-related activities. As Wishitemi *et al.* (2015: 307) assert, the ecotourism industry must meet "the needs of the local community, as well as tourists and nature lovers". Outreach and conservation education, promotion of ecotourism activities and allowing some forms of resource utilisation are ways in which local people's attitudes towards protected areas can be improved. It is therefore important that all stakeholders involved in protected areas enhance the development of structures and opportunities that improve the livelihoods of the local communities while conserving the natural resource base. This will require the development of effective strategies and programmes that empower local people and are designed in relation to the state and condition of the biodiversity in each area, and take into consideration the socio-economic circumstances of the local populations. Biodiversity conservation areas have been a major avenue for tourism activities with ecotourism emerging as a key sector of linking the demands and interests of local communities with the tourism industry. However, there still remains a range of challenges and issues that need to be addressed that include the inequitable distribution and access to benefits as well as the negative impacts of ecotourism.

References

- Abbot, J.I.O., Thomas, D.H.L, Gardner, A.A., Neba, S.E. & Khen, M.W. (2001). Understanding the links between conservation and development in the Bameda highlands, Cameroon. *World Development*, 29, 1115-1136.
- Atieno, L., & Njoroge, J. M. (2015). The ecotourism metaphor and environmental sustainability in Kenya. *Tourism and Hospitality Research*, 1467358415619671.
- Baral, N. & Heinen, J.T. (2007). Resource use, conservation attitudes, management interventions and park-people relations in Western Terai landscape of Nepal. *Environmental Conservation*, 34 (1), 64-72.
- Biodiversity Support Programme (BSP) (2001). An ounce of prevention. *Biodiversity Support Programme*. WWF: Washington DC.
- Bob, U., Swart, K., Maharaj, B. & Louw, P. (2008). Nature, people and environment: overview of selected issues. *Alternation*, 15 (1), 17-44.
- Bob, U., Bronkhorst, S. & Sala, S. (2014). Climate change and conflict: conflict-sensitive climate change adaptation in Africa, in Bob, U. and Bronkhorst, S. (eds). *Conflict-sensitive adaptation to climate change in Africa*, Berliner Berlin: Wissenschafts-Verlag.

Bonner, R. (1993). *At the hand of man: peril and hope for Africa's wildlife*. New York" Vintage Books, Random House Inc.

Brandon, K. (1996). Ecotourism and conservation: a review of key issues. *Environment Department Papers* 53. Washington, D.C.: The World Bank.

Campbell, D.J., Gichohi, H., Mwangi, A. & Chege, L. (2000). Land use conflict in Kajiado District, Kenya. *Land Use Policy*, 17, 337-348.

Cater, E. (1994). Ecotourism in the Third World – Problems and prospects for sustainability. In E. Cater, E. & Lowman, G. (eds.) *Ecotourism: a sustainable option?* New York: John Wiley and Sons.

Conservation of Resources through Enterprise (CORE) (2001). Conservation of resources through enterprise. *The CORE Programme Newsletter*, Issue 3.

Coupe, S., Viv, L., Ogutu, Z. & Watson, C. (2002). *Living with wildlife: sustainable livelihoods for park-adjacent communities in Kenya*. London: ITDG Publishing.

Dieke, P.U.C. (2001). Kenya and South Africa. In Weaver, D.B. (ed.) *The encyclopaedia of ecotourism*. UK: Wallingford.

Ellington, E.H. (2007). Disturbance effects and fences on the spatial patterns of large mammal dispersal and migration in Amboseli/ Tsavo Ecosystem, Kenya. School of Environment and Natural Resources, Ohio State University: Columbia USA.

Emerton, L. (2001). The nature of benefits and the benefits of nature: why wildlife conservation has not economically benefited communities in Africa. In Hulme, D. & Murphree, M. (eds.) *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*, London: James Currey.

Fabricius, C., Koch, E., Turner, S. & Magome, H. (eds.). (2013). *Rights resources and rural development: community-based natural resource management in Southern Africa*. New York: Routledge.

Francis, E. (2000). *Making a living: changing livelihoods in rural Africa*, London: Routledge.

Gichohi, H. (2003). Direct payments as a mechanism for conserving important wildlife corridor links between Nairobi National Park and its wider ecosystem. *The Conservation Lease Programme*. Presentation to the Vth World Parks Congress: Durban South Africa.

Gitahi, N. (2005). Easements and wildlife conservation in Kenya. In Chalifour, N.J., Kameri-Mbote, P., Lye, L.H. & Nolon, J.R. (eds.) *Land use law for sustainable development*. IUCN: Academy of Environmental Law Research Studies.

Government of Kenya. (1994). Development Plan for the Period 1994-1996. Ministry of Planning and National Development. Government Printer: Nairobi.

Government of Kenya. (2002a). National Development Plan 2002-2008. Ministry of Planning and National Development. Government Printer: Nairobi.

Government of Kenya. (2002b). Kajiado District Development Plan 2002-2008. Ministry of Planning and National Development, Republic of Kenya. Government Printer: Nairobi.

Government of Kenya. (2002c). Nakuru District Development Plan 2002-2008. Ministry of Planning and National Development, Republic of Kenya. Government Printer: Nairobi.

Government of Kenya. (2003). Economic recovery strategy for wealth and employment creation 2003-2007. Ministry of Planning and National Development: Nairobi Kenya.

Infield, M. & Namara, A. (2001). Community attitudes and behaviour towards conservation: an assessment of a community conservation programme around Lake Mburu National Park, Uganda. *Oryx*,35: 48-60.

Kameri-Mbote, P. (2005). Sustainable management of wildlife resources in East Africa. A critical analysis of the legal, policy and institutional frameworks. IELRC Working Papers, 2005, No. 5. International Environmental Law Research Centre: Geneva Switzerland.

Lea, M.S., Wilson. A., Wild, R., Blockhus, J., Franks, P., McNeely, J.A. & McShane, T.O. (2004). Can protected areas contribute to poverty reduction? Opportunities and limitations. IUCN: Gland Switzerland and Cambridge UK.

Magio, K. O., Velarde, M. V., Santillán, M. A. N., & Ríos, C. A. G. (2013). Ecotourism in developing countries: a critical analysis of the promise, the reality and the future. *Journal of Emerging Trends in Economics and Management Sciences*, 4 (5), 481-495.

Manyara, G. & Jones, E. (2007). Community-based tourism enterprises development in Kenya: an exploration of their potential as avenues of poverty reduction. *Journal of Sustainable Tourism*, 15 (6), 628-644.

Mburu, J. & Birner, R. (2002). Wildlife co-management in Kenya: an empirical analysis of land owners' incentives for participation. *Paper presented at the Conference on International Agricultural Research for Development*, Witzenhausen Germany. October 9-11, 2002.

McCabe, J.T., Perkin, S. & Schofield, C. (1992). Can conservation and development be coupled among pastoral people? An examination of the Maasai of the Ngorongoro conservation area, Tanzania. *Human Organisation*, 51, 353-366.

Mulder, M.B. & Coppolillo, P. (2005). *Conservation: linking ecology, economics and culture*, Princeton, New Jersey: Princeton University Press.

Mulholland, G. & Eagles, P.F.J. (2002) African parks: combining fiscal and ecological sustainability. *Parks*, 12 (1), 42-49.

Muruthi, P.M. (2005). Human-wildlife conflicts: lessons learnt from AWF's African Heartlands. AWF Working Papers, July 2005, African Wildlife Foundation: Nairobi.

Myers, N., Mittermeier, R.A., Mittermeier, C.G., da Fonseca, G.A.B. & Kent, J. (2000). Biodiversity hotspots for conservation priorities. *Nature*, 403: 853-858.

Ogutu, F. (2006). Tourism revenue grows in 2006. *The East African Standard*, 15 July 2006, Nairobi.

Okello, M., Seno, S. & Wishitemi, B. (2003). Maasai community wildlife sanctuaries in Tsavo-Amboseli, Kenya. *Parks*, 13 (1), 62-75.

Okech, R.N.& Bob, U. (2009). Sustainable ecotourism management in Kenya. *Ethiopian Journal of Environmental Studies and Management*. 2 (10), 57-56.

Osano, P.M., Said, M.Y., Leeuw, J., Ndiwa, N., Kaelo, D., Schomers, S. & Ogutu, J.O. (2013). Why keep lions instead of livestock? Assessing wildlife tourism-based payment for ecosystem services involving herders in the Maasai Mara, Kenya. *Natural Resources Forum*, 37 (4), 242-256.

Shah, P. S. & Irandu, E. M. (2014). Ecotourism as a strategy for promoting conservation of biodiversity in Tana River County. In *National Scientific Conference on the Tana River County*. National Environmental Management Authority (NEMA), Wetlands International, University of Nairobi.

Shumaker, S.A. & Taylor, R.B. (1993), Toward a classification of people-place relationships: a model of attachment to place. In Feimer, N.R. & Geller, E.S. (eds.) *Environmental Psychology: Directions and Perspectives*, New York: Praeger.

Sindiga, I. (1999). Alternative tourism and sustainable development in Kenya. *Journal of Sustainable Tourism*, 7 (2), 108-127.

Southgate, C. & Hulme, D. (2000) Uncommon property: the scramble for wetland in southern Kenya. In Woodhouse, P., Bernstein, H. & Hulme, D. (eds.) *African Enclosures: Social Dynamics of Wetlands in Drylands*. Oxford: James Currey.

Stolton, S., Hockings, M., Dudley, N., MacKinnon, K. & Whitten, T. (2003). Reporting progress in protected areas. A site-level management effectiveness tracking tool. Washington DC: World Bank, WWF Alliance.

Vorkinn, M. & Riese, H. (2001). Environmental concern in a local context: the significance of place attachment. *Environment and Behaviour*, 33 (2), 249-263.

Wearing, S. & McDonald, M. (2002). The development of community-based tourism: re-thinking the relationship between tour operators and development agents as intermediaries in rural and isolated area communities. *Journal of Sustainable Tourism*, 10 (3), 191-206.

Weladji, R.B.; Moe, S.R. & Vedeld, P. (2003). Stakeholder's attitudes towards wildlife policy and the Benoue wildlife conservation area, North Cameroon. *Environmental Conservation*, 30 (4), 334-343.

Wells, M., Brandon, K. & Hannah, L. (1992). People and parks: linking protected area management with local communities. World Bank, World Wildlife Fund and US Agency for International Development: Washington D.C.

Western, D. (1992). Ecotourism: The Kenya challenge. Ecotourism and sustainable development in Kenya. *Wildlife Conservation International: USAID and UNEP*.

Western, D. (1997). Ecosystem conservation and rural development: the case of Amboseli. In Western, D., Wright, R.M. & Strum, S.C. (eds.) *Natural connections: perspectives in community-based conservation*, Washington, D.C.: Island Press.

Western, D., Waithaka, J. & Kamanga, J. (2015). Finding space for wildlife beyond national parks and reducing conflict through community-based conservation: the Kenya experience. *Parks*, 21, 51-62.

Wishitemi, B.E., Momanyi, S.O., Ombati, B. G. & Okello, M.M. (2015). The link between poverty, environment and ecotourism development in areas adjacent to Maasai Mara and Amboseli protected areas, Kenya. *Tourism Management Perspectives*, 16, 306-317.

Wishitemi B. & Okello, M.M. (2003). Application of the protected landscape model in Southern Kenya. *Parks*, 13, 12-21.

World Resources Institute (WRI) (2005a). *World Resources Institute. Living beyond means: natural assets and human well-being*. Statement from the board. Millennium Ecosystem Assessment Board. IUCN: Switzerland.

World Resources Institute (WRI) (2005b). *Ecosystems and human wellbeing: A framework for assessment*. Millennium Ecosystems Assessment, Washington, D.C.: Island Press.