

# THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

## Impact of Community Based Natural Resource Management on Household Livelihoods in Samburu: Case of Nkoteiya Community Conservancy Project

**Franco Alex LeseKETeti**

County Drought Coordinator, Department of Social Sciences, Non-Governmental Organization, Kenya

**Dr. Serah Muchai Kimaru**

Dean, Department of Social Sciences, Mount Kenya University, Kenya

### **Abstract:**

*Effective management of community based conservancies (CBCs) is one of the common challenges affecting conservation projects in Kenya especially in arid and semi-arid regions. Currently, biodiversity conservation matters have been connected to Millennium Development Goals. This falls under Long and Medium Term plan as outlined in vision 2030 under Integrated Development Plans for community levels. However, mismanagement of conservation projects, lack of prior knowledge, politics, conflicts over natural resources have been a hindrance towards full achievement of conservation goals. The study focused on impact of community based natural resource management on household livelihoods in Samburu; case of Nkoteiya Community conservancy project. The research was guided by three objectives; to assess factors that has contributed to the establishment of community- based conservancies in Nkoteiya conservancy project, to examine the extent of community involvement in Nkoteiya community conservancy project and to assess the benefits of community from socio-economic activities of Nkoteiya conservancy project in Samburu County. The study adopted use of participatory theory on theoretical framework and Social capital model in approach to explain the variables on involvement of stakeholders particularly for participants of the community based projects. The study adopted descriptive research design. The target population was 1200 drawn from the conservancy management team and households from the region. Using Cochran sample size formulae, a sample size of 300 respondents were included in the study. Data analysis was done using (SPSS version 25). The study found that, 75 % of the livelihoods of the people involved in the projects have been impacted positively. The study identified that factors that were researched on establishment of CBNRM projects have contributed to 84.1% ( $r=0.841$ ,  $p=0.012$ ). Successively, the level of involvement showed that the community have been well involved in the affairs of the conservancy evident from 24.8% ( $r=0.248$ ,  $p\text{-value}=0.00$ ) and the socio-economic benefits accrued had varied responses evident from means comparison ( $298$ ) =  $-3.925$ ,  $p=0.001$  and  $t(52.047) = -6.913$ ,  $p=0.001$ . Therefore, the study recommends that the management of the conservancy to embrace the aspects of community conservancy through total involvement in the operations of the conservancy. The study also recommends coordination from all stakeholders' involved in the utilization and benefits of natural resources in the region.*

**Keywords:** *Natural resources, community involvement, conservation projects, participation*

### **1. Introduction**

Management of natural resources and Community involvement for sustainable development has rapidly spread in developing countries in the last one decade (Greiner, 2016). Support for the sustainable development principle is derived from grounds of economic efficiency, public accountability, community involvement and societal empowerment. Previously, natural resources were fully controlled by the state without involvement of other stakeholder rendering management to be very ineffective. These reforms are expected to reconcile both conservation and livelihood needs (GOK, 2014). In particular, Community involvement in CBC management is aimed at enhancing peoples' livelihoods, poverty alleviation and preservation of the forest condition (Brown, 2015).

Natural resources consist of minerals, forestry, wildlife, water among others. Communities generate income from these resources and have positive long-term impact on poverty alleviation contributing to the millennium development goals (Mattsson, 2015). Poverty reduction and biodiversity conservation has been intertwined with developmental goals in third world countries (Lemke, 2016). There is a link between poverty and biodiversity conservation. For example, Nelson and Williams (2018) stated that dependence of rural poor on wildlife and forestry is a significant underlying threat to conservation. Occasionally, there are instances when the local communities are given the chance to participate in the management of natural resource (Oshewolo, 2011). In practice, CBNRM is implemented in mechanisms through which the state decentralizes and delegates some basic rights and responsibilities to the local communities with regard to natural resources (Amati *et al*, 2018).

According to Amati (2018), there is global concern of significant and rapid loss of biodiversity characterized by the interference with natural species and habitats in decline at an estimated 1% to 2% per year. In an attempt to control this loss, the global community on biodiversity conservation spends an estimated 50-100 billion annually on the edification and maintenance of biological resources. The majority of the funds used are donor funds to maintain conservation protected areas. Despite the recorded successes over years, it is clear that the threats to biodiversity remain largely undiminished (Butt, 2016). In the process of searching for various solutions, the international community focused on empowering local communities through CBNRM projects which could simultaneously bring win-win solutions to alleviate human poverty and curtail biodiversity loss based on government and community associations.

All over the globe managing conservation projects have been spearheaded by the state (Nelson and Williams *et al.*, 2018). Various nations have adopted a top-down approach towards management structure of wildlife involved in established and expansion of protected areas for conservation (Mattsson *et al.*, 2015). Operation of states includes the creation and enforcement of legislation and establishment of modern systems of resource management. There have been general failure of centralized approaches to natural resources management led to the introduction of CBNRM approach. Remarkably, there is general failure of centralized programs towards natural resources management. For any resource management program to be comprehensively established and adopted, it should systematically address ecological, societal and economical concerns (Mugabe, 2017). For any resource management approach to be widely accepted and adopted, it has to be capable of addressing ecological, social and economic concerns at community and state level (Mugabe *et al.*, 2017).

Involvement and participation works on two ends, at one end of the scale is community participation with partial involvement in management affairs of the conservancy projects. On the other hand there might be complete handover of ownership of natural resources conservation projects from the state to communities. Between these two extremes there are combined management models, where representatives of the community and the state act within the terms of CBNRM strategies with one or several communities. Inclusion of the community that surrounds the area makes to augment various interests in the area. Successful implementation of CBNRM projects works on form of land-use change and requires the residing community to formalize the access and administration rights to land to be defined as 'protected areas'. Though access to communal land involves conflicts, running of community projects have been well taken with the establishment of regional management committees to overcome highly politicized struggle for ethnic territories.

In Samburu, there have been efforts by the Government of Kenya for decades to incorporate pastoralist communities in natural resource management (Fratkin, 2014). Conservation of Natural resources in Kenya through CBC strategies have been developed in the arid and semi-arid regions of northern parts of Kenya inhabited mostly by marginalized communities namely Pokot, Borana, Samburu and Turkana over the last few periods as the government seeks to involve local pastoralist communities in better management of existing natural resource (Anderson *et al.*, 2015). Though enriched with natural resources, these regions continue to be underdeveloped. This is attributed to ineffective and unmanageable approaches towards resource use and abstraction. Arid and semi-arid regions often experience extended drought period, inconsistent and uneven rainfall distribution over years. Pastoralism is the dominant source of livelihoods among indigenous populations in these regions.

Community Based Conservancies in northern Kenya are administered by Northern Rangelands Trust (NRT), a state cooperation group initiated in 2001 with local members comprising a set of pastoralist groups interconnected to state officials, private investors and community representatives. The concept of managing natural resources was developed to address the objectives of conservancies under environmental, economic and social challenges that affect the conservation projects. In Nkoteiya Conservancy, the society does not understand the processes involved in management of conservancies. Local elders in Samburu blame political elite's for supporting the establishment of the CBCs to grab their ancestral land and putting it in the hands of foreigners (Murphree, 2016).

The development of conservancies and communal participation in management of natural resources in the pastoral regions have been mandated to Northern Rangelands Trust. The Northern Rangelands Trust (NRT) partners with local communities mandate is to build peace and stability through conservation. At present, NRT coordinates more than 30 community-owned and managed conservancies in northern Kenya. Approximately half of all NRT conservancies are in Samburu whereby changing times has brought increased pressure on inclusion in natural resources management for better livelihood. Operationally, CBNRM initiative is often used in engaging development or conservation programmes to incorporate local level involvement, ranging from passive to active, in natural resource management (Nelson and Williams *et al.*, 2018).

According to Mbogori (2014) communities in arid and semi-arid are generally not able to participate fully in the conservation projects because they are poor, illiterate, do not enjoy proper governance. Community involvement and participation in conservation projects is influenced by cultural values, level of education, politics and leadership responsibilities. Fratkin *et al.* (2014) stresses that education is the key to any societal improvement; therefore, education level for communities has a direct relationship on their involvement in community-based development projects. Communities in Samburu lived in marginalized society where decision making is centralized to the state thus lack of involvement leads to dire effects that results in a negative effect on leadership, communal conflicts and hostility in conservation projects (Oshewolo, 2011). The Government of Kenya in collaboration with Non-governmental organizations has been on the forefront in developing policies geared towards poverty reduction in the arid and semi-arid areas as part of Vision 2030. These policies outline approaches that will elevate the living standards of the indigenous communities and have a multiplier effect not only to the locals but also to the entire Kenyan economy.

Basically the study was based on the following objectives:

- To investigate the factors that contributed to the establishment of community based conservancies in Nkoteiya conservancy project in Samburu.
- To examine the magnitude of community involvement in managing the Nkoteiya community conservancy project in Samburu.
- To examine the benefits of community from socio-economic activities of Nkoteiya conservancy project for the community in Samburu.

## 2. Materials and Methods

The research employed descriptive survey, which involved getting data from selected groups of respondents by asking questions while formulating their responses. The research design was used to gather facts concerning the present phenomenon while scrutinizing the relationship between the variables on the objectives. The study targeted people who were working within the conservancy and the people (households) that surround the Nkoteiya establishment. The conservancy has seven management officials and other subordinate workers that add up to 23 respondents (Conservation Manager, Logistics Manager, chief security officer, Two Accountant, management Board Secretary, community development officer, Board Chairman and vice Chairman). Additionally, there was an estimated population of 1200 people living in the surrounding five villages of Nkoteiya conservancy (KEBS census, 2019).

The research adopted both purposive sampling method and systematic random sampling technique to select respondents for the study. According to Etikan and Bala (2017), purposive sampling involved selecting respondents as per the judgment of the researcher. Thus the method was used to select management officials as per the department which they served while systematic random sampling technique was used to select the community surrounding Nkoteiya conservancy where households were divided into groups from manyattas and then selected the head of households from the manyattas at the intervals of five groups.

The research utilized both questionnaires, interviews and discussion groups which were used to collect data. Essentially both close ended and open-ended questionnaires were used to obtain data. Interview approaches generated qualitative data by use of themes. Scheduled interviews were conducted to find out detailed points of information precisely in an orderly format in line with study objectives. The goal of the interviews schedules generated information interchange with the respondents in order to gather and express their explicit thoughts on the affairs of the conservancy. Group discussions were carried-out in coordination with the assistant of the conservancy chairman and selected household representatives. However, individual interviews induced and derived information that was exceptional to individuals, group discussions disclosed wider attitudes, beliefs and behaviors common to all. Furthermore, this was conducted because Nkoteiya community conservancy comprised of communal structured groups.

Data analysis was conducted using descriptive statistics and inferential statistics. The study yielded both quantitative and qualitative data. Quantitative data was analyzed while the qualitative data was analyzed using content analysis according to the themes researched on the study. Analysis was done with aid of the statistical package for social sciences (SPSS) package version 25.

## 3. Results and Discussions

Demographic data of the respondents showed that 31.7% of the respondents were males while 68.3% were females, while respondent's age indicated that majority (54.7%) of the respondents were between 31 to 50 years. On education, majority of the respondents (61%) had no formal education, in comparison to 39.0% who had primary level education, secondary education and college cumulatively. On the other hand, it was observed that 83.3% of the respondents have lived in Samburu County for more than ten years while 16.3% have lived in the region for less than 10 years. Similarly, the outcome showed that 78.7% of the households have visited the conservancy at least once and therefore are aware of the existence and operations of the Nkoteiya conservancy in the region.

On the factor that had led to establishment of the conservancy, from the management perspective, the majority management contributed that 85.0% ( $\mu=4.8$ ;  $\sigma=0.79$ ) availability of land as natural resource for protected area was one of the factor that had led to establishment of Nkoteiya conservancy in the region. Effective management which had worked as per the projects mandate 77.0% ( $\mu=4.5$ ;  $\sigma=1.42$ ), coordination of local government and national government 73.0% ( $\mu=4.1$ ;  $\sigma=1.26$ ) and donor funding's for conservation projects in the region 64.2% ( $\mu=4.3$ ;  $\sigma=0.75$ ). Though effective revenue collection from the established conservancy 57.0% ( $\mu=2.8$ ;  $\sigma=0.39$ ), and coordination of community members on participatory approaches 53.3% ( $\mu=3.8$ ;  $\sigma=1.36$ ) showed an average ratings on the contribution towards the establishment of Nkoteiya conservancy in the region.

On the households responses, majority of the respondents 87.1% ( $\mu=4.8$ ;  $\sigma=0.79$ ) had the same view that availability of land as natural resource for protected area was one of the factor that had led to establishment of Nkoteiya conservancy in the region while 85.3% ( $\mu=4.5$ ;  $\sigma=1.42$ ) attributed to effective management as the factor that had led to establishment of the conservancy. On the same, households 60.1% ( $\mu=4.1$ ;  $\sigma=1.06$ ) rated that coordination of local government and national government on conservation projects had a significant contribution. Though the households rated donor funding's for conservation projects in the region 42.1% ( $\mu=3.1$ ;  $\sigma=0.26$ ) and effective revenue collection from the established conservancy 57.1% ( $\mu=2.8$ ;  $\sigma=1.39$ ).

In comparison from these factors from management and households responses, the data showed that there are common factors that had led to establishment of Nkoteiya conservancy that entail; Coordination of local government and national government on conservation projects ( $\mu=4.1$ ,  $\sigma=1.26$ ), effective management that has worked as per the projects mandate ( $\mu=4.5$ ,  $\sigma=1.42$ ) and availability of land as natural resource for protected area ( $\mu=4.8$ ,  $\sigma=0.79$ ). These factors

shared the same magnitude of the responses from the community households and the conservancy management. This shows that these factors have highly contributed to establishment of the conservancies in the region.

The association of management responses and households responses on the of the factors that has led to establishment of Nkoteiya conservancy generated the following results;

Correlations			
		Management Responses	Community Responses
Management Responses	Pearson Correlation	1	.841*
	Sig. (2-tailed)		.012
	N	27	273
Community Responses	Pearson Correlation	.841*	1
	Sig. (2-tailed)	.012	
	N	273	27

Table 1

\*. Correlation Is Significant at the 0.05 Level (2-Tailed)

The results shows a relationship test of management and community responses on the factors that has led to establishment of the community-based projects. The results indicated that there was a positive correlation of  $r=0.841$  which was significant at  $p$ -value 0.012, lower than  $p \leq 0.05$ . This indicates that the factors tested variables had significantly led to establishment of CBNRM projects in the region evident from the correlation test. The results conforms to Ogotu (2012), findings on the impact of ecotourism on livelihood and natural resource management in Amboseli ecosystem, since the establishment of CBNRM projects in arid areas, success of the projects have been propelled by the need to rehabilitate the forest, empower the community and conservation of the eco-system.

The study sought to investigate the community involvement in management of Nkoteiya conservancy. On different aspects the management has different responses, majority 78.1% ( $\mu=4.04$ ,  $\sigma=1.57$ ), showed that conservancy management board had involved community representatives in the management affair. Other aspects that were rated highly on community involvement included; 77% ( $\mu=4.2$ ,  $\sigma=1.03$ ) community members been involved in activities of the conservancy, 63% ( $\mu=3.2$ ,  $\sigma=1.02$ ) showed involvement in creation of opportunities while 43% ( $\mu=3.86$ ,  $\sigma=1.42$ ) showed involvement that community were involved in management committees and 67.3% ( $\mu=2.41$ ,  $\sigma=1.03$ ) being involved in decision making of the operations of the conservancy.

Tentatively, community responses on the extent of involvement in the affairs of the Nkoteiya conservancy. Majority 81.3% ( $\mu=3.86$ ,  $\sigma=1.24$ ) showed involvement in participating in electing the management committee, 68.1% ( $\mu=2.4$ ,  $\sigma=1.03$ ) allude that they have been moderately involved to in the affairs of the conservancy. Similarly, 69.3% ( $\mu=2.8$ ,  $\sigma=1.02$ ) indicated that the conservancy had moderately created employment opportunities. Other than these aspects, the households 67.0% ( $\mu=2.44$ ,  $\sigma=1.07$ ) showed less involvement in manner which they are included in management board as representatives in the management affairs and 72.1% ( $\mu=2.41$ ,  $\sigma=1.03$ ) indicated low involvement in decision making.

The association of management responses and household's responses on the involvement in running the affairs of the Nkoteiya conservancy generated the following results;

Correlations Factor			
		Management Responses	Community Responses
Management Responses	Pearson Correlation	1	.54*
	Sig. (2-tailed)		.011
	N	27	273
Community Responses	Pearson Correlation	.54*	1
	Sig. (2-tailed)	.011	
	N	273	27

Table 2

\*. Correlation Is Significant at the 0.05 Level (2-Tailed)

The results connotes that there is a moderate correlation ( $r=0.54$ ) between the households and the management of Nkoteiya conservancy. Their responses on the variables of community involvements were statistically significance at level (0.11). These results conforms to Charles *et al.*, (2014) findings on participatory approaches on CBC projects. The study argues that for community-based projects to be successful there must be absolute involvement. Similarly, Mark, & Scott, (2012) observes that through community involvement in CBC projects in northern Kenya, many conservancies have been successful with mutual benefits to the investors and the resident communities.

On the facets of social-economic benefits of community from Nkoteiya conservancy, the management showed moderate response of 56.8% ( $\mu=2.7$ ,  $\sigma=0.99$ ) on the extent to which community members has benefited from employment opportunities. 60.2% ( $\mu=3.2$ ,  $\sigma=1.32$ ) stated that households had benefited from education facilitated by Nkoteiya conservancy projects. 37.9% ( $\mu=2.1$ ,  $\sigma=1.24$ ) showed that the households had benefited from income generated from Nkoteiya conservancy projects. Concerning minimizing poverty, the management indicated that the households had low gain of 69.2% ( $\mu=2.3$ ,  $\sigma=1.34$ ).

Concerning the households responses on socio-economic benefits derived from Nkoteiya conservancy, the households showed 69.2% ( $\mu=1.9$ ,  $\sigma=1.32$ ) have benefited the households in educating the family from Nkoteiya conservancy projects. Majority 57% ( $\mu=2.7$ ,  $\sigma=1.24$ ) alluded that Nkoteiya conservancy had moderately increased household income. Tentatively, 49% ( $\mu=2.1$ ,  $\sigma=1.34$ ) responded that the Nkoteiya conservancy had low contribution towards minimization of poverty levels in the region.

According to Zerriffi and Naidoo *et al.*, (2015), the benefits of community conservancy can only be achieved when the management focuses on win to win for both local community and the state. Nevertheless, on income generation, there was even distribution with 23% showing great benefit, 27% moderate benefit, 21% stated they had low benefits while 23% indicated they had very-low benefits. With a mean of  $\mu=2.71$ , this shows that there was minimal benefit on increase on income generation which is a key aspect for appreciation of the existence of the conservancy. On the aspect of poverty minimization, there was even distribution with 18.5% showing very great minimization, 20% great minimization of poverty, benefit, 21.5% stated they had poverty was moderately minimal, 22% stated that poverty was lowly minimized while 18% indicated very-low minimized poverty. With a mean of  $\mu=2.1$ , this shows that the project hasn't minimized poverty in the region.

The association of management responses and household's responses on the socio economic benefits derived from the Nkoteiya conservancy generated the following results;

Correlations : Benefits of Households from Nkoteiya Conservancy					
Control Variables			Educating The Family	Reduced Poverty	Employment Creation
Increased Income	Educating the Family	Correlation	1	-.101	.005
		Significance (2-tailed)	.	.080	.938
		df	0	300	300
	Reduced Poverty	Correlation	-.101	1	-.024
		Significance (2-tailed)	.080	.	.677
		df	300	0	300
	Employment Creation	Correlation	.005	-.024	1
		Significance (2-tailed)	.938	.677	.
		df	300	300	0

Table 3

Measuring the conservancy benefits to the Samburu livelihoods on a relationship factor, the researcher considered the correlation factor of increased income (Control variable) in relation to other variables. Creation of employment compared to providing education, showed strong positive correlation at 0.938 (98%) being the highest among all measured variables. Other variables like employment creation in relation to reduced poverty 0.677 (67.7%) and reduced poverty with educating the family surrounding the conservancy had 0.101(10%) and 0.24 (24.8%), showing that there is weak negative correlation on the aspect of increased income and poverty reduction or educating the surrounding families. On significance level, all variables tested in the significance level are above p value ( $p>0.05$   $\alpha$  5%).

On overall impact of the three variable, multiple linear regression was used to determine the effects caused by Nkoteiya conservancy in Samburu County. The major variables were; factors that has led to establishment of the conservancy, benefits of community involvement, and socio-economic benefits derived from the conservancy as shown by the model summary below;

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.634 <sup>a</sup>	0.714	0.705	0.31204

Table 4

The independent variables that were studied on the dependent variable which shows that the Nkoteiya conservancy 71.4 % (0.714) impact on livelihoods in Samburu County as represented by the R<sup>2</sup>. This indicates that other factors that may not have been studied in this study contribute to 28% on bettering livelihoods in Samburu County. The Anova test on Nkoteiya impact on livelihoods was presented as;

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.772	2	1.257	3.172	0.012
Residual	8.308	298	2.045		
Total	11.08	300			

Table 5

The significance value was 0.012 which is less than 0.05 thus the model is statistically significance in predicting the extent the community have benefitted on establishment of Nkoteiya conservancy under; factors that has led to conservancy establishment, community involvements and socio-economic benefits of Nkoteiya conservancy in Samburu County. The F critical at 5% (0.05) level of significance was 3.172. Since F calculated is greater the F critical (*value* = 3.172), this shows that the overall model was significant.

The Coefficient of Determination of the model was presented as;

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.532	.240		5.687	.022
	Conservancy benefits	.861	.021	.310	4.058	.001
	Factors that has led to conservancy establishment	.52	.078	.068	2.146	.012
	Community involvement & conservancy management	.640	.042	.254	3.332	.031

Table 6

From the results, considering all major variables as derived from the objectives (Factors that has led to conservancy establishment, socio-economic benefits and community involvements) constant at zero, impact of Nkoteiya on conservation of natural resources in Samburu County will be 3.532. The findings presented also indicates that taking all independent variables at zero, One unit increase on factors that has led to conservancy establishment will lead to 0.52 increase impact on livelihoods in Nkoteiya Conservancy in Samburu County. One unit increase on conservancy benefits will result to 0.86 increase on livelihoods in Nkoteiya Conservancy in Samburu County and finally an increase community involvement and conservancy management lead to a 0.64 increase on impact of livelihoods in Samburu County. This concludes that as all studied variables (independent variables) affect Livelihoods of Samburu residents. The independent variables are significant at (*p* value < 0.05) on livelihoods in Samburu County.

#### 4. Conclusions and Recommendations

The study concluded that CBNRM projects are essential on livelihoods of Samburu community. The management and involvement of community in conservation of natural resources, the management structure is well constituted, the management influences how the activities are carried on within the conservancy. The management operations have been influenced by poor implementation of management policies, coordination between national and county government while regional politics and political interference in managing conservancy have adversely affected how things are done in the conservancy.

Community involvement have been seen as a major aspect in development of CBNRM projects. Due to the fact that CBNRM concept deals with total inclusion of community members, the study concludes that the conservancy management needs to create activities that aims at engaging the community in running the affairs of the projects. Involvement may succeed through creating employment opportunities, participation in decision making and electing management committees to preside over affairs of the conservancy. Focusing on the benefits of the Nkoteiya conservancy in Samburu, the community have benefitted on various facets that includes employment creation, minimizing poverty in the region, educating the household families and improved income.

However the magnitude in which these benefits differs from one aspect to the other. From the survey, the responses indicated that minimizing poverty have been the main focus of the conservation projects in the region. Therefore, the researcher concludes that creation of employment has grown at higher degree. Eradicating illiteracy at community level have been facilitated through construction of schools and education social centers. Income levels in the region are a bit low due to the fact that the management of the conservancy haven't been able to manage the natural resources to adequately meet the needs of the community. All benefits can be effectively enhanced by proper management of the conservancy while assisting community members through giving them bursaries and construction of schools in the region, creating equitable job opportunities for all that may increase income levels.

From the model summary, the study concludes for CBNRM projects to be successful in arid and semi-arid regions, the impact of managing these projects is significant to the involved community members hence the impact can be positive or negative. The findings presented also indicates that taking all independent variables at zero, one increase on challenges will lead to 0.011 increase impact on livelihoods in Nkoteiya Conservancy in Samburu County; one unit increase on community involvement and management will result to 0.14 increase on livelihoods in Nkoteiya Conservancy in Samburu County and finally an increase conservancy benefits lead to a -0.86 reduction on impact of livelihoods in Samburu County. From the study, the researcher puts forth major recommendations:

On the factors that led contributed to the establishment of community-based conservancies in Nkoteiya conservancy. Other than the researched factors, the researcher recommends the county government and NRT should oversee the collection of revenue in the conservancy whilst educating and employing managers with effective skills to

coordinate the community and the management of the conservancy. Additionally, the management of the conservancy should embrace exploration of other natural resources that may create beautiful sceneries for tourism attraction. Concerning community's involvement in the management of natural resources, the study recommends that the management of the conservancy should embrace all aspects of community involvement especially collaborating with community members on the operation of the conservancy. Members of the community may be involved in overseeing revenue collection, inclusion in electing the management officials and increase chances of employment within the conservancy. Also the community members should be included in drafting policies that may spearhead the development of the conservancy.

On socio-economic benefits, the study recommends that community members should be educated on natural resources and how they are related to tourism attraction through construction of modern hotels and restaurants to boost tourism in the region hence improved sources of revenue. On the same, the study recommends that the management of Nkoteiya Conservancy should be given proper education on management in terms of financial management, initiating other internal projects for advanced tourism attraction, conflict mitigation strategies and how to bring communities together. Finally, on poverty reduction in the area, the study recommends that the residents of Nkoteiya Community Conservancy be supported in starting up small enterprises that may alternatively increase the overall livelihood income of the residents therefore supporting their daily encounters than relying on the community-based conservancies.

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