

**PROJECT DESIGN ACTIVITIES, REGULATORY
ENVIRONMENT AND PERFORMANCE OF COMMUNITY
BASED CONSERVATION PROJECTS IN KENYA: A CASE
OF LAIKIPIA REGION CONSERVANCIES**

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**A Research Thesis Submitted in Partial Fulfillment of the Requirements
for the Award of the Degree of Doctor of Philosophy in Project Planning
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DECLARATION

I declare that this thesis is my original work and has not been presented for an academic award in any other University.

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DEDICATION

This work is dedicated to my family; Amina Abdulkadir, Hamida Abass, Rawhiya Al Najar, Rayyan Muslimah, Abdul-Qadir and Muhammad Amin, you are at the core of my life.

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TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	xi
ABBREVIATION AND ACRONYMS	xii
ABSTRACT	xiii
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study	1
1.1.1 Performance of CBC Projects.....	4
1.1.2 Project Design Activities	5
1.1.3 Regulatory Environment.....	9
1.1.4 Laikipia Conservation Region	10
1.2. Statement of the Problem.....	11
1.3 Purpose of the Study	13
1.4 Objectives of the Study.....	13
1.5 Research Questions.....	14
1.6 Hypothesis of the Study.....	14
1.7 Significance of the Study.....	15
1.8 Scope of the Study	17
1.9 Assumptions of the Study	17
1.10 Definition of Significant Terms Used in the Study	18
1.11 Organization of the Study	20
CHAPTER TWO: LITERATURE REVIEW	21
2.1 Introduction.....	21
2.2 Performance of Community Based Conservation Projects.....	21
2.3 Project Design Activities and Performance of CBC Projects	30
2.4 Scope Determination and Performance of CBC Projects	33
2.5 Capacity Building of Project Beneficiaries and Performance of CBC Projects	37
2.6 Monitoring and Controlling and Performance of CBC Projects.....	46
2.7 Stakeholder Engagement and Performance of CBC Projects	54
2.8 Regulatory Environment and Performance of CBC Projects	59
2.9 Theoretical Framework.....	65
2.9.1 Systems Theory	66
2.9.2 Theory of Change	67

2.9.2 Participatory Development Theory.....	69
2.9.3 Stakeholder Theory.....	70
2.10 Conceptual Framework on Relationship between Variables of the Study.....	71
2.11 Research Gaps	73
2.12 Summary of Literature Review.....	77
CHAPTER THREE: RESEARCH METHODOLOGY	78
3.1 Introduction.....	78
3.2 Research Paradigm	78
3.2.1 Research Design	79
3.3 Target Population.....	80
3.4 Sample Size and Sampling Procedure	81
3.4.1 Sample Size	82
3.4.2 Sampling Procedure.....	83
3.5 Research Instruments.....	84
3.5.1 Questionnaire for the CBC Project Members	84
3.5.2 Focused Group Discussion Schedule for Conservancy Officials	85
3.5.3 Document Analysis Schedule	86
3.5.4 Piloting of the Research Instruments	86
3.5.5 Validity of Research Instruments.....	87
3.5.6 Reliability of Research Instruments.....	87
3.6 Data Collection Procedure	89
3.7 Data Analysis Techniques	89
3.7.1 Quantitative Data Analysis	89
3.7.2 Qualitative Data Analysis	91
3.7.8 Hypothesis Testing	93
3.8 Limitations of the Study	94
3.9 Delimitations of the Study	95
3.10 Operationalization of Variables	96
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION.....	98
4.1 Introduction.....	98
4.2 Questionnaire Return Rate.....	98
4.3 Background of the Respondents	99
4.3.1 Respondent CBC Project Affiliation	99
4.3.2 Distribution of Respondents by Gender.....	99
4.3.3 Distribution of the Respondents by Age	100
4.3.4 Distribution of the Respondents According to Education Level	101
4.3.5 Distribution of the Respondents Based on Position Held in the Project.....	102

4.3.6 Distribution of the Respondents by Years of Project Membership	102
4.4 Testing of the Assumptions of the Study.....	103
4.4.1 Reliability Test.....	103
4.4.2 Multicollinearity Diagnosis	103
4.4.3 Normality Test	104
4.4.4 Linearity Test.....	105
4.5 Likert Scale as an Interval Measure.....	106
4.6 Analysis of the Performance of CBC Projects.....	107
4.7 Analysis of Scope Determination	117
4.7.2 Scope Determination and Performance of CBC Projects	124
4.8 Analysis of Capacity Building of Project Beneficiaries	128
4.8.2 Capacity Building of Project Beneficiaries and Performance of CBC Projects	137
4.9 Analysis of Project Monitoring and Control.....	141
4.9.2 Monitoring and Control and Performance of CBC Projects	147
4.10 Analysis of Stakeholder Engagement	151
4.10.2 Stakeholder Engagement and Performance of CBC Projects	159
4.11 Analysis of Joint Project Design Activities	162
4.11.1 Project Design Activities and Performance of CBC Projects	164
4.12 Analysis of Regulatory Environment	168
4.12.2 Regulatory Environment and Performance of CBC Projects.....	173
4.13 Moderating Influence of Regulatory Environment on the Relationship between Project Design Activities and Performance of CBC Projects	177
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	182
5.1 Introduction.....	182
5.2 Summary of Findings	182
5.2.1 Influence of Scope Determination on the Performance of CBC Projects.....	182
5.2.2 Influence of Capacity Building of Project Beneficiaries on the Performance of CBC Projects	182
5.2.3 Influence of Monitoring and Control on the Performance of CBC Projects	183
5.2.4 Influence of Stakeholder Engagement on the Performance of CBC Projects.....	183
5.2.5 Influence of Joint Project Design Activities on the Performance of CBC Projects.....	183
5.2.6 Influence of Regulatory Environment on the Performance of CBC Projects	184
5.2.7 The Moderating Influence of Regulatory Environment on the Relationship between Project Design Activities and Performance of CBC Projects	184
5.3 Conclusions of the Study	185
5.4 Recommendations of the Study	187
5.5 Contribution to Knowledge	189
5.6 Suggestions for Further Studies.....	191

REFERENCES	192
APPENDICES.....	207
Appendix A: Letter of Introduction.....	207
Appendix B: Questionnaire for the CBC Project Members.....	208
Appendix C: Focused Group Discussion Schedule for the Conservancy Officials	213
Appendix D: Document Analysis Checklist.....	215
Appendix E: Research License	216
Appendix F: Focused Group Discussion Thematic Matrix	217
Appendix G: Focused Group Discussion Sub-Themes Matrix.....	220
Appendix H: Document Analysis Thematic Matrix	223
Appendix I: Document Analysis Sub-Themes Matrix.....	227
Appendix J: Collinearity Statistics	230
Appendix K: Linearity Tests	231
Appendix L: Regression of Scope Determination and Performance of CBC Projects	234
Appendix M: Regression of Capacity Building of Project Beneficiaries and Performance of CBC Projects	236
Appendix N: Regression of Monitoring and Control and Performance of CBC Projects	238
Appendix O: Regression of Stakeholder Engagement and Performance of CBC Projects	240
Appendix P: Regression of Project Design Activities and Performance of CBC Projects.....	242
Appendix Q: Regression of Regulatory Environment and Performance of CBC Projects.....	244
Appendix R: Regression of Regulatory and the Relationship between Project Design Activities and Performance of DET project	246
Appendix S: Krejcie & Morgan Table.....	247
Appendix T: A Map of Laikipia Region Conservancies	248

LIST OF TABLES

Table 2.1: Summary of the Knowledge Gaps.....	74
Table 3.1 Target Conservancies and CBC Projects	81
Table 3.2: Sampling in the Strata.....	84
Table 3.3: Research Instruments, Respondents and Data Type	86
Table 3.4: Pilot Test Reliability Coefficients	88
Table 3.5: Testing Hypothesis	94
Table 3.6: Operationalization of Variables	97
Table 4.1: Respondent CBC Project Affiliation	99
Table 4.2: Gender distribution of the Respondents	100
Table 4.3: Distribution of Respondents by Age	100
Table 4.4: Distribution of Respondents According to Education Level	101
Table 4.5: Distribution of Respondents Based on Position Held in the Project	102
Table 4.6: Years of Project Membership	102
Table 4.7: Reliability Coefficients.....	103
Table 4.8: Tests of Normality	105
Table 4.9: Descriptive Analysis of the Performance of CBC Projects	108
Table 4.10: Descriptive Analysis of Scope Determination.....	118
Table 4.11: Correlation of Scope Determination and Performance of CBC Projects.....	125
Table 4.12: Regression of Scope Determination on Performance of CBC Projects.....	125
Table 4.13: Descriptive Analysis of Capacity Building of Project Beneficiaries.....	129
Table 4.14: Capacity Building of Project Beneficiaries and Performance of CBC Projects	138
Table 4.15: Regression of Capacity Building of Project Beneficiaries and Performance of CBC Projects	139
Table 4.16: Descriptive Analysis of Project Monitoring and Control	142
Table 4.17: Correlation between Monitoring and Control and Performance of CBC Projects	148
Table 4.18: Regression of Influence of Monitoring and Control on Performance of CBC Projects	149
Table 4.19: Descriptive Analysis of Stakeholder Engagement	152
Table 4.20: Relationship between Stakeholder Engagement and Performance of CBC Projects ..	159
Table 4.21: Regression Results of the Influence of Stakeholder Engagement on Performance of CBC Projects	160

Table 4.22: Descriptive Analysis of Joint Project Design Activities..... 163

Table 4.23: Project Design Activities and Performance of CBC Projects Correlation Matrix..... 164

Table 4.24: Regression Results of the Influence of Project Design Activities on Performance of CBC Projects 165

Table 4.25: Descriptive Analysis of Regulatory Environment 169

Table 4.26: Regulatory Environment and Performance of CBC Projects Correlation Matrix 173

Table 4.27: Regression Results of the Influence of Regulatory Environment on Performance of CBC Projects 175

Table 4.28: Regulatory Environment Moderation Test 178

Table 4.30: Summary of Hypotheses Test..... 189

LIST OF FIGURES

Figure 1: Theory of change.....	68
Figure 2: Relationship between Project Design Activities, Regulatory Environment and Performance of CBC Projects.....	72
Figure 3: Conceptual Model of Moderation.	91
Figure 4: Statistical Moderation Model	178

ABBREVIATION AND ACRONYMS

ALPs	Alternative Livelihood Projects
ANOVA	Analysis of Variance
CBC	Community Based Conservation
CBNRM	Community Based Natural Resource Management
DFID	Department for International Development
FAO	Food and Agriculture Organization
ICDP	Integrated Conservation and Development Projects
IIED	International Institute for Environment and Development
IUCN	International Union for Conservation of Nature
KWS	Kenya Wildlife Service
LWF	Laikipia Wildlife Forum
NRT	Northern Rangelands Trust
PMI	Project Management Institute
SLF	Sustainable Livelihoods Framework
SME	Small and Medium Sized Enterprises
UN	United Nations
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
USAID	United States Agency for International Development
WWF	World Wildlife Fund

ABSTRACT

The influence of project design activities on the performance of CBC projects and the moderating influence of regulatory environment on this relationship were investigated. Specifically, the researcher sought to establish whether scope determination, capacity building of project beneficiaries, monitoring and control and stakeholder engagement had influenced the performance of CBC projects. Further, the relationship of joint project design activities and the moderating influence of regulatory environment on that relationship were determined. The study was grounded on pragmatism and adopted a mixed method approach encompassing a cross-sectional survey design, focused group discussions and document analysis. By means of a multistage sampling that included a census of all CBC projects in the study area and stratified random sampling of the members, 270 respondents were sampled from a target population of 911 project members. Data were collected using questionnaires, group discussion and document review guides after the piloting of the instruments to guarantee validity and reliability. A response rate of 88.1 percent was realized and was deemed sufficient for this type of study. Data from the quantitative strand were analyzed using descriptive and inferential statistical techniques with the help of Statistical Package for Social Sciences (Version 25). The descriptive statistics were presented as frequencies, means and standard deviations while Pearson Product Moment Correlational Coefficient, and regression analyses were used as inferential statistical tests. Data from qualitative strand were analyzed using thematic analysis that involved the identification of aprioristic recurrent themes from the voices of the participants and the information in the reviewed documents. With $r = 0.542$, $R^2 = 0.294$, $F_{(1,237)} = 97.788$ at $p = 0.05$ it was concluded that scope determination had a significant positive influence on performance of CBC projects. Capacity building of project beneficiaries positively and significantly influenced the performance of CBC projects ($r = 0.727$, $R^2 = .529$, $F_{(1,237)} = 264.584$ at $p = 0.05$). With $r = 0.380$, $R^2 = .145$, $F_{(1,237)} = 39.870$ at $p = 0.05$, monitoring and control had a significant positive influence on performance of CBC projects. Moreover, the influence of stakeholder engagement was positive and significant since $r = 0.641$, $R^2 = .410$, $F_{(1,237)} = 164.169$ at $p = 0.05$. With $r = 0.761$, $R^2 = 0.579$, $F_{(1,237)} = 324.486$ at level of significance $p = 0.05$ it was concluded that joint project design activities had a significant positive influence on performance of CBC projects. In addition, with $r = 0.281$, $R^2 = 0.079$, $F_{(1,237)} = 20.247$ at $p = 0.05$, the influence of regulatory environment on the performance of CBC projects performance was positive and significant. Finally, it was found out that the influence of project design activities on the performance of CBC projects did not depend on regulatory environment. The study recommends that organizations implementing CBC should embrace holistic approach as joint project design activities had a stronger influence on CBC projects than individual project design activities. In addition, a clear and results oriented scope that links conservation and development and improvement of co-development of the capacity of CBC projects, traditional institutions are recommended due to the influence they have on CBC project performance. There is need for monitoring and control to focus on immediate objectives that need to be met if the long-term goals are to be fulfilled and outreach effective communication with local stakeholders, especially the local cultural institutions who retain indigenous ecological knowledge. Lastly, there is need to invest more in conservation law enforcement and seek synergies with national security organs to ensure that regulatory environment becomes an enabler of conservation projects.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In the last three decades biodiversity conservation and local community welfare narratives have been merging. This was due to realization that natural resources could not be preserved without paying attention to communities that have lived beside them for generations. Old conservation philosophy detached local community from resources and left the latter at disadvantage. Despite this, species and habitats continued to decline, prompting a paradigm shift by conservationists. Development practitioners on the other had realized that for local communities to be emancipated from poverty, attention had to be paid to the very natural resources the communities required to utilize.

The integration of conservation and development narratives received a boost from Brundtland Commission Report, "Our Common Future" (WCED, 1987) which paid cognizance to the link between development and use of natural resources and ultimately ushered in the concept of "Sustainable Development." Pursuant to these events, development institutions began to progressively integrate environmental rhetoric into policy, and the other end of the continuum, conservation institutions started acknowledging that development needs of local people was very also key. Since 1970s, questions of the efficacy and morality of protected area approach of conservation had been raised. Reality had dawned that local communities could better conserve biodiversity with expert external assistance to complement indigenous ecological knowledge. This is because, the local community, relied on the same natural resources for sustenance.

The integration of conservation and development narratives led to early approaches that primed local community welfare in order to achieve conservation goals. With time these bottom-up approaches took shape, and the resulting initiatives were called Integrated Conservation and Development Projects (ICDP). These projects emphasize on how local community's traditional ecological knowledge and other native capacities could be exploited in making conservation empowering and culturally compatible. Hughes and Flintan (2001) define ICDP as projects in conservation of biodiversity but with components of rural development. The ICDP approach therefore aims not only to meet socio-economic development priorities but also environmental goals, a sustainable development thinking convergence. These projects seek to address sustainable development in areas that are rich

in biodiversity through integrated rural development whose main vehicle is alternative livelihood project model.

The foremost principle of ICDP approach is that the initiatives use socio-economic investment tools to pursue biodiversity conservation objectives. Many variants of the ICDP exist, literature recognizes these approaches according to the level and control that local community involvement exercised. According to Brooks, (2017) and Campbell and Vainio-Mattila (2003), The most notable variants are Community-Based Conservation (CBC) which in some locales is also known as Community Based Natural Resource Management (CBNRM). These variants put the community at the center of biodiversity conservation and the accompanying development initiatives. Other variants are Alternative Livelihood Projects (ALPs) and Ecotourism Enterprises which are simply entrepreneurial undertakings that take advantage of conservation. The CBC variant was the focus of this study owing to its popularity, especially in the Sub-Saharan Africa region.

CBC projects characteristically premise that attitudinal and behavioral change of local community towards conservation will be brought about by socio-economic benefits from the rural development aspect. The projects can convalesce social cohesion and alleviate poverty, therefore increasing backing for conservation, which in turn reduces threats to biodiversity. This makes CBC projects a dynamic and an evolving concept, and its definition often depends on the parties applying it. This study adopted Galvin, Beeton and Luizza (2018) definition that; CBC is an approach that simultaneously boosts human development for the local community living in biodiversity rich areas to achieve conservation goals. The CBC projects are ideal for the realization of social, economic, and ecological sustainability in wildlife areas.

The CBC philosophy has been greatly aided by wide adoption of participatory development theory in development assistance programs and international policy dialogues such as World-Wide Fund for Nature (WWF) Wildlands and Human needs program, sustainability policy in the UN Brundtland Commission Report of 1987, the 1992 Earth Summit resolutions, Agenda 21, and the United Nations Sustainable Development Goals (SDGs). These policy dialogues brought about a shift from the fortress conservation version that imposed “fine and fences” in wildlife conservation. Subsequently, according to Shereni and Saarinen (2021), CBC projects are increasingly critical approaches that support the realization of SDGs and related targets. Pursuant to this, attention is now growing on

conservation projects that prioritize needs of rural communities via rural development alongside ecological goals.

Conservation initiatives modelled on integrated approach first appeared in South African nations of Zimbabwe and Zambia. CBC approach first appeared in a joint project by the Government of Zambia and Food and Agriculture Organization (FAO) in the mid-1960s, Luangwa Valley Integrated Conservation and Development Project (Garnett, Sayer and Du Toit, 2007). Others are the iconic Communal Areas Management Program for Indigenous Resources (CAMPFIRE) of Zimbabwe in the 1980s, and Communal Conservancies of Namibia in the 1990's (Jones and Murphree, 2001). Fast forward, during the 1990s, CBC model of conservation and development had been embraced as a standard by major international organizations (McShane and Wells, 2004). This perhaps explains the popularity of CBC approaches in the Sub-Saharan Africa.

Based on CBC approach, early initiatives have provided opportunities and new ideas for adaptive learning in the region. For instance, CAMPFIRE initiatives in Zimbabwe make a social link with the economic and ecological objectives. Lessons from these early projects have played a key role in influencing pilot initiatives in CBC projects in neighboring countries including Botswana, Namibia, Mozambique, and East African nations of Kenya and Tanzania. In Kenya, CBC initiatives have been around for some time now. In some localities, for instance in southern Kenya's Amboseli ecosystem, Western (1994) traced an experimentation with these projects that dated back to 1960s and 1970s.

The CBC projects in Kenya play a noteworthy role since the existence of wildlife outside national parks and reserves has over time led to poaching, human-wildlife conflict, land degradation and rising poverty. Such a fluid situation has only further aggravated the situation facing wildlife outside protected areas, further providing a fertile ground for this new paradigm of integrated approaches. The most outstanding areas where CBC initiatives have been implemented in Kenya are the ecosystems such as Amboseli, Tsavo, Maasai Mara, Laikipia, Arabuko Sokoke and Samburu. In these ecosystems, CBC approach is implemented through conservancies, both public and private owned. Jones, Diggle and Thouless (2015) appreciated the central role played by the conservancy model pointing out that conservancies were now central in the engaging community in conservation and tourism. This study was conducted in the Laikipia region of Kenya which hosts a big share of community conservancies.

1.1.1 Performance of CBC Projects

Project performance is defined and perceived differently, giving it varied connotations based on experience, knowledge, and context. For instance, the UNDP (2009) defined project performance as the progression of the latter towards indented goals and outcomes. In yet another dimension, according to Lester (2013), project performance anchored on key indicators, for instance, the milestones such as the deliverables, the predetermined design, and the planned outcomes. Yet, other scholars are of the opinion that project performance should be studied from the perspective of set goals and the project processes towards achieving them (Haq, 2016). This study views project performance as the achievement of set project goals as well as progression towards their realization.

Practically, due to nested social, political, ecological, and cultural dynamics, CBC projects are in practice complex undertakings, and their performance is highly dependent on the interplay between project design and these factors. The ecological environment where CBC projects are implemented has a complex network of individuals interacting with each other and the environment. These interactions vary with stakeholder types, vested interests, geographic scope, and local circumstances (Catacutan and Tanui, 2007). The complexity of a project not only has a negative influence on processes of project management, but also principally influences the project itself. Pursuant to this, the performance of CBC projects highly depends on how well the project design addresses the complexity in the project environment.

This reality renders CBC project performance a multidimensional construct composed of economic, ecological, and even human dimensions. This argument is comported by Dangi and Jamal (2016) in that, by asserting that performance of community-based tourism projects could be based on sustainable development dimensions. CBC projects afford an inducement to sustainably manage biodiversity resources in rural communities, because they link poverty alleviation in the local community and maintenance of ecosystems. Brooks, Franzen, Holmes, Grote, and Mulder (2006a), are cognizant of multiple perspectives by pointing out that CBC project performance can be measured using ecological, economic, attitudinal, and behavioral outcome domains. This study adopted these outcome domains as rubrics for measuring CBC project performance in that; economic outcomes were measured in terms of empowerment; attitudinal change in accepting of wildlife conservation; behavioral outcomes in terms of change of behavior to sustainable resource use; and ecological outcomes in terms of the realized biodiversity regeneration.

1.1.2 Project Design Activities

Project design is part of initiation phase that spells the key aspects, structure, standards for achievement and project's fundamental deliverables. The design of a project sets the general tone, the outlook of the project and is critical significance in the overall performance of a project. Gitonga (2012) pointed out that project design answered the question "what is to be done?" Project design is therefore an important decision made during early project management process. Alias, Zawawi, Yusof and Aris (2014) argued that decisions made during the earlier stages of the design have a greater effect on overall performance in comparison to the ones made at later stages. Design is about one or more approaches for use in achieving the desired project goals, where project solutions are developed, the "what is to be done" part of the project. This renders project design activities key to the project performance.

Generally, conservation projects are designed to curb continued loss of biodiversity. Further, CBC projects are designed to reconcile exploitation of natural resources and socioeconomic needs of the local community (Johannesen, 2004). The assumption is that benefits derived by local communities should deter exploitive use of natural resources. Therefore, the design of CBC projects is meant to link local community development and biodiversity conservation (Brown and Wyckoff-Baird, 1995). This delicate balance warrants a clear scope determination in that, the tasks, the deliverables of the project and the development, and conservation targets should essentially link conservation and welfare of the local people.

Moreover, CBC projects operate on the tenet that with external expertise assistance, local communities can sustainably utilize the natural resources they have lived with for generations. This calls for the design of CBC projects to mainstream improvement of local capacities to empower project beneficiaries and enhance the achievement of dual goals of conservation and development (Nthiga, Duim, Visseren-Hamakers and Lamers, 2015). Linking conservation and development requires building of several capitals in the local community to enable the latter to take up alternative livelihood initiatives that are the main vehicles in this approach. External capacity building expertise is therefore required to build human, financial, physical, social, and natural capitals.

Since CBC projects are complex undertakings that combine two often-conflicting goals of development and conservation in a complex environment, the design of these projects ought to include tracking, reviewing, and reporting the overall progress. This design aspect in

meant to ensure the achievement of the CBC performance objectives through a well-designed monitoring and control system. Monitoring and control benefits project managers and stakeholders by giving information about condition of the project and informs on the actions to be taken to address any discrepancies in performance (PMI, 2017). For this to be realized, project design aspect of monitoring and controlling ought to establish the required CBC project standards, continuously measure the progress towards conservation and development targets of the project and utilize the gathered information to make required changes in the project.

Lastly, it is understood that projects are not implemented in islands but in locations inhabited by peoples of particular cultures and establishments. In that spirit, stakeholder engagement of the local community is treated as a keystone to project performance. PMI (2017) defines stakeholders as individuals or entities affected by or can affect a particular project. There are normative and pragmatic arguments that point to the benefits of engagement. For example, Reeds (2008) opined that engagement brought about durability and the quality of decisions in environmental conservation. Based on this argument, it is important that a CBC project design should contain stakeholder engagement aspect. This study focuses on local stakeholder engagement in terms of inclusion in day-to-day CBC project management, local value integration and participation in conservation and local development.

1.1.2.1 Scope Determination

Project scope describes limitations of the project in terms of what it will or will not deliver (Njau and Ogolla, 2017). This definition focuses more on the deliverables of a project. Other literature has defined scope in terms of the “the work required” to accomplish a particular project (PMI, 2017) “work concerned in developing the project deliverables and the techniques used to create them” (Jainendrakumar, 2015). The PMI (2017) definition informs of the significance of project scope, defining determination of a project scope as the activity required to make certain that the project consists of not only the entire work required, but also only the work prerequisite to finish the project efficaciously.

Scope determination includes demarcation of project limitations, figuring out deliverables, the tasks and the methods used to create them. Determining scope therefore offers the project implementers an understanding of what the project entails, what is ought to be accomplished and simultaneously informs in the design project monitoring and control systems to be utilized during project planning and implementation, and therefore influencing project

performance. In addition, project scope needs to document the major tasks and deliverables that link conservation and development, the two conflicting goals of CBC projects. The project scope ought to map out project targets, for instance, Johannesen (2006) argues that CBC scope must pinpoint those sections of the population deemed to be a threat to biodiversity and provide them with alternatives. Apart from the population targets, the CBC project scope should identify the specific geographic area, or the project area based on biodiversity importance and other underlying priorities.

1.1.2.2 Capacity Building of Project Beneficiaries

Building the capacity of CBC project beneficiaries takes precedence since the latter are actively or passively involved in initiation and in the support of the social process strands that support the projects. Wing (2004) defined capacity building as enhancing the capability of an organization to accomplish its mission. Capacity building process can be focused at institutional, individual, and even societal levels, making it an important element in CBC projects in empowering local community to take up the lead in conservation and local development. This in turn improves the chances of community empowerment and biodiversity regeneration outcomes. For social sustainability, the empowerment should build on existing traditional knowledge systems and further provide new concepts and tools to address contemporary challenges. Moreover, empowerment should provide conducive environment for acceptance of wildlife conservation and behavioral change towards sustainable utilization of natural resources.

Considering this, building the capacity of the local community therefore becomes an integral aspect of the design because it leverages efforts by way of strengthening local community groups promotes self-reliance and increases the chances of project success. Nthiga *et al.* (2015) pointed to sustainability livelihood framework of promoting financial, physical, human, social, and natural capitals as being critical capacities to build in conservation regions. A well-designed capacity building of project beneficiaries will be of value to both local community and could also benefit implementing agencies by bringing about inclusive processes that consolidate trust, good relationships and, built commitments.

1.1.2.3 Monitoring and Control

The importance of project monitoring and controlling and especially in projects implemented in complex environments like community areas is imperative; it provides information for decision-making and improvement of project management. Continuous comparison of the

planned project management activities and the tracked actual performance is critical. PMI (2017) sees monitoring and controlling as a facet of management of projects performed throughout the project through collection, measurement, and assessment of trends to inform on process improvements and give project team an insight into the health of the project. Further, monitoring is seen as a continuous periodic review that tracks project information and the intended outputs, outcomes, and impacts (Kyalo, Mulwa and Nyonje, 2015). Project monitoring and controlling comes in handy since conservation projects take place in complex environment condensed with intricate interaction of economic, social, political, cultural, and environmental factors that may influence project performance.

In this regard, managers must adjust and align the context within which conservation projects take place (Margoluis, Stem, Salafsky and Brown, 2009). Integrating monitoring and controlling in conservation project design provides valuable feedback to management and other stakeholders on what works. In addition, monitoring and controlling highlights on what does not work and why, giving early hints of progress and attainment of objectives. Conservation project design therefore calls for a systematic and continuous monitoring to collect, analyze and use of the information for management control and decision-making. CBC projects, like all other ICDPs hold assumptions that improvement of local welfare leads to biodiversity preservation. Monitoring and control even become indispensable since Johannesen (2006) points out that some these underlying assumptions of CBC projects were untested. This assumption forms the backbone of CBC projects and need to be continually monitored. Project monitoring and controlling identifies critical control points of a project thus helping in putting in place strategies that direct the project towards the required goals of linking conservation and development.

1.1.2.4 Stakeholder Engagement

Engagement of stakeholders is regarded to be among the most important ingredient for successful project delivery. Mostly, CBC projects are implemented in complexity ridden environments where, stakeholders harbor conflicting and even competing goals. In such an environment, project managers can utilize stakeholder engagement to increase project success probability through stakeholders' influence (Eslerod and Larsen, 2018). To this end, it is prudent that project managers understand the stakeholders and then balance, their accompanying demands, needs, and expectations. This is however tricky as conservation project managers do not possess formal power of authority over stakeholders and therefore are unable to make local community to respond to project inputs and outputs. In such

situations, to achieve project objectives, project managers must therefore rely on local stakeholder engagement.

The argument in this study was that positive response to CBC projects could be accomplished through engaging of local stakeholders. The complexity in CBC projects means that design ought to ensure early and continuous community engagement. This ensures that local stakeholder needs, and expectations are prominently featured in the project design. Sterling, Betley, Sigouin, Gomez *et al.*, (2017) reinforces this argument by admitting participation of the local community centrally features in natural resource conservation projects across the globe. In addition, Bal, Bryde, Fearon and Ochieng (2013) pointed out that local community indigenous knowledge, which could be tapped to promote project reputation, build relationships and, fathom local priorities and needs. In this study, local community inclusion, local values integration, and participation of local community in conservation and development initiatives were the constructs used to gauge stakeholder engagement in the CBC project design.

1.1.3 Regulatory Environment

Majority of biodiversity conservation areas are surrounded by settlements with farmers, pastoralists, hunters, and gatherers. Illegal practices such as poaching, bush meat hunting and livestock grazing are rampant. Members of local communities in wildlife areas operate clandestinely to poach the resources in conservation areas for personal gains. This has over time led to decline of wildlife biodiversity in the tropics that necessitated the attention of policy makers in governments who in turn responded by mooting regulatory frameworks to enforce conservation law. CBC projects are efforts meant to arrest the decline of wildlife populations and operate within such framework of government policies and laws (Wiafe, 2016). This pegs the performance of CBC projects on how well conservation environment is regulated through implementation of conservation laws by the mandated government institutions. This has led to recognition that crimes against conservation threaten not only national, but also regional and international efforts towards conservation of biodiversity (Karanja, 2012).

Poaching and encroachment leads to the alteration of function, composition, and structure of an ecosystem. At the same time, animal depredation, crop raiding and loss of human life are meted on the local community by wildlife. Therefore, for CBC projects to achieve the wishes of the locals without compromising goals of biodiversity conservation, measures must be

instituted to protect wildlife and local communities from each other. Regulatory environment is therefore an important moderating variable since even if not directly part of CBC project design, the better it is done by conservation agencies, the more likely will be the chances of these conservation projects to succeed. The regulatory environment in this study was measured using two indicators as derived from the literature, policing efforts exerted by the conservancies forming the study area and the support of conservation law enforcement by the national security agencies.

1.1.4 Laikipia Conservation Region

Laikipia region is found in Kenya's Great Rift Valley to the north-west of snow-capped Mount Kenya. It is an ecosystem that has recently gotten the recognition as one of Kenya's best regions for overall *safari* experience, a challenge to the world renowned Maasai Mara. Sandwiched between northern semi-arid areas and Mount Kenya, this savanna grassland ecosystem is endowed with a wide spectrum of biodiversity. According to Sundaresan and Riginos (2010), despite formal protection of only two percent of Laikipia ecosystem, the region is a home to East Africa's highest large mammal diversity. The vast swathes of countryside are leased from the government and usually managed as either as private ranches or community conservancies that supports conservation of wildlife and ecotourism. These large ranches managed by conservation agencies, foreigners and Kenyans of European descent who are convinced of the intrinsic value to wildlife conservation with some ranches including livestock rearing as a supplemental form of income.

The ecosystem further includes community group ranches managed as collective resources. Group ranches is a mode of collective land ownership whereby a cluster of households dedicate their own land to conservation through CBC approach. Kenya introduced legislation under the Wildlife Conservation and Management Act 2013 (GOK, 2013) making wildlife conservancies to be recognized as a form of land-use. This legislation gave group ranch residents in Laikipia rights to conserve wildlife and run tourism on their communal land. This was made possible by the formation of communal property resource management entities, the conservancies. Conservancies in Kenya have been crucial in the growth of new institutional arrangements that involves local community in ecotourism and conservation.

Laikipia ecosystem is managed for conservation purposes, promotion of adventure and luxurious *safari* tourism. These activities generate income for the group ranches of the local Laikipiak and Mokogodo Maasai communities. The upswing of the conservation movement

in Laikipia is an indication of plausibility of conservation in private and communal lands. Laikipia ecosystem comprises an assortment of varying land uses, and tenures shaped by colonialist and post-colonialist land policies. Huge commercial cattle ranches comprise 39 percent, smallholder plots comprise 34 percent, group ranches encompass 7 percent, forest reserves 7 percent, government possessed land 8.5 percent, and urban areas 4.5 percent (LWF, 2012).

These statistics point to a spatially muddled juxtaposition of an assortment of large chunks of land with wildlife population and dispersed smallholder farms. This situation has made Laikipia ecosystem principally susceptible to human wildlife conflicts and therefore in most cases negativity towards conservation and wildlife itself. In the ecosystem, the duty of protecting wildlife and protecting citizens and private property against wildlife itself rests with Kenya's semi-autonomous conservation body, the Kenya Wildlife Service (KWS). However, conservation and international development agencies have been at the forefront in implementing CBC projects in Laikipia ecosystem.

1.2. Statement of the Problem

In Kenya, an estimated 65 percent of wildlife resides in community and private lands, which renders the future of wildlife species to largely be dependent on the conservation of habitats and migratory corridors on the communal and privately owned lands amid competing land uses. In addition, Kenya's 2010 constitution provides for the right to sustainably exploit, utilize, manage and conserve environmental and natural resources (The Constitution of Kenya, 2010). Furthermore, Wildlife Conservation and Management Act 2013 (GOK, 2013) provides legal justification of community driven conservation in Kenya as a way of providing connected landscapes that complement national parks and reserves and places communities at the center of wildlife conservation. Moreover, Kenya's Vision 2030 outlines the importance of conservation as a route to sustainable development.

Pursuant to this, there has been a growing adoption of CBC project model in communal areas in wildlife rich areas. Overtime, enormous amounts of donor funds have been invested in CBC projects, but according to Du Toiet (2007), the performance has tended to be fleeting and fragile. Literature alludes to CBC projects being poorly conceived and seldom successful on the large scale. The failure of CBC projects inevitably leads to loss of biodiversity and the documented purported successes in the literature cannot be linked with durable improvements in the socio-economic welfare of the communities. Most recently, Bernhard,

Sabuhoro and Munanura (2020) used spatial regression analysis to provide evidence that investment in CBC projects had a paltry but significant negative linear effect on unauthorized resource use.

Throughout most of their history, CBC projects seem not to have surpassed the expected threshold of successfully linking conservation and development of local communities. Wright, Hill, Roe, Rowcliffe *et al.* (2016) point to a disenchantment that began in the mid-1990s where the authors argue that literature criticized CBC approaches for having negligible impacts and sometimes adverse effects on conservation. Further, in a quasi-experimental approach that explored the contributory impacts of alternative livelihood projects used in CBC, Bauch, Sills and Pattanayak (2014) found no discernible conservation outcomes in them. In addition, Dressler *et al.* (2010) had earlier pointed out that CBC experienced identity crisis since even the most positive CBC projects only had fleeting achievement and a host of major deficiencies, mainly on the design of these initiatives.

Despite the evident importance of CBC projects, there exists a dearth of empirical studies examining design and the performance these CBC projects. This is comported by Stephenson (2019) that, majority of projects targeting biodiversity conservation could not demonstrate the impact of their actions and that project management guidelines that exist fails to satisfactorily address the design and planning projects. The study investigated the influence of project design activities of scope determination, capacity building of project beneficiaries, monitoring and control and stakeholder engagement on the performance of CBC projects.

Banda Jr and Pretorius (2016) posited that scope determination held the efficacy of increasing the likelihood of project attainment of success and significantly decreased the risks that could come up during implementation of a project. Therefore, this study considered project scope determination as an important CBC project design aspect and sets out to determine its influence of the project performance. The CBC project design places communities at the center of conservation and local development. This necessitates the communities to invent and sustain remedies to their own problems by exercising control over their environments and circumstances. Thomas (2013) recognized capacity enhancement of local groups and other entities in implementation of projects. This study assessed how capacity building of project beneficiaries influences its performance.

Monitoring and controlling is a design activity which identifies the limits that may compromise the project progress by comparing actual project progress with the baseline. FFI

(2014) supports monitoring and controlling in conservation project as it measures changes in the condition of threatened species, tracks threats and evaluates the success of management actions. Literature points to lack of adequate monitoring and controlling in CBC projects, leading to an absence of “lessons learnt” about CBC management and ensuing impacts (Horwich and Lyon, 2007). This study established the extent of monitoring and control influence on CBC project performance. The implementation of CBC projects in local communities make the latter indispensable for normative and pragmatic reasons. Engaging local community is heralded as the panacea to environmental conservation projects globally. A project design lacking local community engagement leads shaky support conservation projects (Muhumuza and Balkwill, 2013). This study sets out to examine the relationship and the influence of engaging stakeholders on the performance of CBC projects.

Apart from the design, the performance of CBC projects is also pegged on the regulatory environment provided locally and nationally by the mandated conservation agencies. Kelman (2013) points principally law enforcement, capacity building, and long-term conservation partnerships networks are key elements associated with conservation efficacy. It was important to determine how regulatory environment influenced and moderated the performance of CBC projects.

1.3 Purpose of the Study

The study established the influence of project design activities on the performance CBC projects in Kenya, and specifically targeted Laikipia region. The study established the extent to which regulatory environment moderated the relationship between project design activities and the performance of the CBC projects.

1.4 Objectives of the Study

The objectives of this study were to:

- i. Establish the extent of the effect of scope determination on the performance of community-based conservation projects in Laikipia region.
- ii. Determine the extent to which capacity building of project beneficiaries affects the performance of community-based conservation projects in Laikipia region.
- iii. Establish the effect of monitoring and control on the performance of community-based conservation projects in Laikipia region.

- iv. Examine how stakeholder engagement affects the performance of community-based conservation projects in Laikipia region.
- v. Establish the effect of joint project design activities on the performance of community-based conservation projects in Laikipia region.
- vi. Determine the effect of regulatory environment on the performance of community-based conservation projects in Laikipia region.
- vii. Establish the moderating effect of regulatory environment on the relationship between project design activities and performance of community-based conservation projects in Laikipia region.

1.5 Research Questions

This study sought to provide answers to the following research questions:

- i. What is the extent of the effect of scope determination on performance of community-based conservation projects in Laikipia region?
- ii. To what extent does capacity building of project beneficiaries affect the performance of community-based conservation projects in Laikipia region?
- iii. What is the extent of the effect of monitoring and control on the performance of community-based conservation projects in Laikipia region?
- iv. To what extent does stakeholder engagement affect the performance community-based conservation projects in Laikipia region?
- v. What is the extent of the effect of joint project design activities on the performance of community-based conservation projects in Laikipia region?
- vi. What is the extent of the effect of regulatory environment on the performance of community-based conservation projects in Laikipia region?
- vii. To what extent does regulatory environment moderate the relationship between project design activities and performance of community-based conservation projects in Laikipia region?

1.6 Hypothesis of the Study

This study sought to test the following research hypotheses:

- i. **H0₁**: Scope determination has no significant relationship with the performance of community-based conservation projects in Laikipia region.

- ii. **H0₂**: Capacity building of project beneficiaries has no significant relationship with the performance of community-based conservation projects in Laikipia region.
- iii. **H0₃**: Monitoring and control has no significant relationship with the performance of community-based conservation projects in Laikipia region.
- iv. **H0₄**: Stakeholder engagement has no significant relationship with the performance of community-based conservation projects in Laikipia region.
- v. **H0₅**: Joint project design activities have no significant relationship with the performance of community-based conservation projects in Laikipia region.
- vi. **H0₆**: Regulatory environment has no significant relationship with the performance of community-based conservation projects in Laikipia region.
- vii. **H0₇**: Regulatory environment has no significant moderating influence on the relationship between project design activities and performance of community-based conservation projects in Laikipia region.

1.7 Significance of the Study

The researcher investigated project design activities as practiced by conservation agencies and their effects on the performance of CBC projects. Since 65 percent of Kenya's wildlife resides outside the gazetted national park and national reserves, this renders the study results useful to project managers involved in conservation of wildlife in dispersal and corridor areas. The study has highlighted on project design issues in communal areas, essentially enlightening on bottom-up management of habitats whose wildlife are of threatened and endangered conservation status. Expectations are that the study findings are of great use to donor agencies involved in conservation interventions.

The policy makers and conservation project managers can benefit from the findings of project scope determination since the study has generated the knowledge that will ensure that projects, especially complex ones are accurately scoped. Proper scoping will ensure that tasks, deliverables and targets link conservation and development, therefore making it easy for project managers to allocate the proper labor and costs necessary to ensure project performance. Further, the study findings add into the knowledge that confirms the importance of project beneficiary capacity building and especially based on the sustainable livelihood framework of human, financial, social, physical, and natural capitals. The results show how these capitals can act as catalysts of promoting conservation and local community

development. This will inspire local communities to act on local matters themselves and therefore ensuring social sustainability.

This study anticipated to add into project management discipline knowledge, which is still growing, and particularly on monitoring and controlling, a crucial component of every project. Project performance cannot be realized in the absence of an efficient and effective monitoring and control system. In addition, knowledge on monitoring and control reviews on CBC project milestones and final outcomes by local partners will inform donors to decide on the former's accountability upon which further collaborations could be established. The study findings are worthwhile to managers since they reveal the type of local stakeholder engagement that is important to effectively involve project beneficiaries during the CBC project design that ensures project sustainability. In addition, the generated knowledge here is vital in strengthening conservation community connections and building of long-term positive relationships with the local community as stakeholders through engagement.

The study informs on the importance of regulatory environment in ensuring that there is a continued connection between local community development and conservation of biodiversity by making sure the two goals do not overlap each other. The study findings are also useful not only to the local CBC project agencies, but also to the government and other participating institutions. The study results compliment the pool of knowledge required to enable the achievement of SDGs especially; Goals 1 and 15 in terms of reconciling poverty eradication and sustainably using the earth's terrestrial species and ecosystems. This is because the study has enhanced the protection of key habitats and strengthened the natural resource management.

The study brought about knowledge on the design of important approaches that uplift the lives of rural communities and the conservation of biodiversity, hence very significant in achieving social, economic, and environmental goals of sustainable development in third world countries like Kenya. Further, in the quest to become a middle-income economy, Kenya aspires to be a country living in a secure, clean, and sustainable environment by 2030. The research fits into the Vision 2030 goal of Wildlife Corridors and Migratory Routes Initiative that is geared towards reclaiming all migratory routes and wildlife corridors for the prosperity of the nation and supporting the economic development pillar.

1.8 Scope of the Study

The study was domiciled in the Laikipia conservation region, which is in the expansive Laikipia County, the undulating landscape of savanna grassland west of Mount Kenya, north of Aberdare ranges, south of Ewaso Nyiro and east of Baringo County. The conservation projects of interest were littered throughout the region. This would have made data collection process cumbersome and expensive. The researcher dealt with the geographical limitations of the study area by enlisting good research sampling and better planning.

The research involved the project design of conservation projects in conservancies, whose goal is to preserve wildlife species, habitats, and the improvement welfare of the communities in such areas. In the study area, there were many related interventions, some targeting water conservation, forest conservation and cultural preservation. The researcher understood that validity issues would have cropped up if initiatives involved targeting other conservation aspects were to be sampled. This was solved by establishing local contacts and especially with agencies like the Laikipia Wildlife Forum (LWF) and Northern Rangelands Trust (NRT), these institutions helped in targeting specifically wildlife conservation projects.

1.9 Assumptions of the Study

Assumptions were made that a project was a means to an end and performance of the project could be established not only terminally, but also during its implementation. Moreover, it was assumed that there was no entry of other events that might have influenced the project performance. Additionally, it was also an assumption of this study that variance in the level of project performance was due to differences in the application of project design variables identified in the literature, that is, the level of project scope determination, capacity building of project beneficiaries, monitoring and control and stakeholder engagement put in place. Furthermore, it was assumed that regulatory environment moderated the relationship between CBC project performance and project design activities.

This study was grounded on pragmatism paradigm paving the way for the use of convergent mixed methods approach. Furthermore, an assumption was made that respondents answered the questionnaire and participated in the focused group discussions in honest and candid manner and that they had sincere interest in their participation. Another assumption based on the philosophical grounding was that rather than focus on methods, the important aspect

of the research was the problem under study and the questions were asked to answer the research question satisfactorily.

1.10 Definition of Significant Terms Used in the Study

This section explains noteworthy terms, as used in this research while at the same time acknowledging that the terms can assume different meanings in different contexts.

Acceptance of wildlife conservation: The attitudinal change towards wildlife conservation realized as a result of benefits accrued by the local community from CBC projects.

Alternative livelihoods projects: These are conservation interventions that are designed to preserve biodiversity by providing a sustainable substitute livelihood activity to divert local community from engaging in unsustainable exploitation of a resource.

Biodiversity Regeneration: It is the rebuilding of the range of plants and wildlife that once existed in the conservancy areas and ought to occur naturally.

Capacity Building of Project Beneficiaries: The process by which individuals and organizations in conservation areas are empowered through skills training, resource mobilization, assistance in initiating conservation enterprises and environment reclamation to enhance their livelihoods.

Community Based Conservation Projects: Community projects that promote the idea of sustainable conservation through engagement and provision of benefits to local communities.

Community Conservancy: It is a legally registered community-based conservation entity formed with the purpose of managing local habitats for the benefit of livelihood improvement and are administered by a local board of directors and managed locally.

Community empowerment: The resulting improvement in local community material welfare, community wide benefits derived from the project such as employment, benefit sharing and physical developments.

Financial capacity enhancement: The empowerment of project beneficiaries to support their livelihoods through employment opportunities, startup capital, income, and other financial benefits.

Human capacity enhancement: The capacity building that aims at equipping project beneficiaries with capabilities that will enable them to solve problems by imparting skills,

knowledge and livelihood enhancing education.

Inclusion of local stakeholders: This is involving local community groups and institutions in CBC project design and planning as part of stakeholder engagement.

Local values integration: This is the use of traditional ecological knowledge systems in the design of the CBC projects as part of stakeholder engagement.

Monitoring and Control: The aspect of project design that ensures establishment of standards of the deliverables, measuring the performance and utilizing the acquired information to ensure the project is kept on track through required changes.

Monitoring results utilization: The use of monitoring and control results in an intentional activity that readjusts project work with the project plan to achieve planned objectives.

Natural capacity enhancement: The capacity building that aims to restore and improve the potential of environment and biodiversity for the benefit of project beneficiaries.

Performance of CBC Projects: The result of CBC projects where the community is empowered for sustainability and made to accept of wildlife conservation as a means of livelihood through sustainable resource use, habitat restoration and species restoration.

Physical capacity enhancement: Capacity building that relates to empowering project beneficiaries to acquire infrastructure for conservation operations, education, health, water supply, seeds, and breeds of livestock, meant to supporting livelihoods.

Policing efforts: These the use of conservancy rangers to enforce conservation law in the conservancy habitats.

Project deliverables: Conservation and development outputs as a result of CBC project activities.

Project Design Activities: The activities in the CBC projects that set out the outlook of the overall project by mapping out what is to be done to achieve the set project goals.

Project targets: This refers to conservation and development goals that determine how CBC project is expected to be done and results to be produced by the CBC project.

Project tasks: This refers to the work items that are implemented and are meant to contribute into the realization of conservation and development goals.

Public Participation: The act of ensuring that local community to partake in conservation and development issues in CBC projects.

Regulatory Environment: This is a set of conservation rules, laws, and regulations that organizations involved in conservation in Kenya must adhere to.

Scope Determination: This is the extent of CBC tasks, deliverables, targets, and schedules as determined in conservation project design.

Social capacity enhancement: Capacity building relating to the restoration of community pride and identity, formal and informal networks, and partnerships.

Stakeholder engagement: The aspect of project design of ensuring interaction with and influencing project stakeholders to the overall project benefit through making sure the impetus of the project is local, use of local values in project execution and ensuring local control.

Support from security agencies: Support rendered to conservancy rangers by Kenyan security agencies in enforcing conservation law.

Sustainable resource use: The behavioral change to efficient use of biodiversity resources to no overutilization.

1.11 Organization of the Study

This study contains five chapters, with the first chapter covering the introduction, specifically the study background, statement of the problem, study purpose, objectives, and the questions to be answered. In addition, the first chapter also includes hypotheses tested in the study, study results' significance and the assumptions made. To cap the chapter are the study limitations that could influence research outcomes and conclusions, the study delimitations and definitions of significant terms used in the study. Chapter two covers the review of the literature based on the study objectives, the theoretical foundation that guided the study, the conceptual framework, and at the end, the summary of literature that had been reviewed and the knowledge gaps established from the literature. Chapter three encompassed the methodological context that directed the study. In chapter three, the paradigm that underpins the research, the study design, target population, the sample size of the study and procedures used in sampling are highlighted. In addition, piloting procedures, study validity and reliability, data collection instruments and data analysis techniques were also expounded. Chapter four covered analysis of the collected data, presentation, interpretation of the results, and discussion of findings while chapter five focused on the summary of the study findings, conclusions, recommendations, and suggestions for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews empirical literature on the relationship between performance of CBC projects and project design activities as moderated by regulatory environment. To present diverse opinions about the study variables, the literature reviewed included published research articles, project manuals and standards, organization reports and empirical research reports. The performance of CBC projects (dependent variable) was explored first followed project design activities (independent variable) and lastly regulatory environment (moderating variable). In addition, to give the research the grounding required, the theories that gave the researcher context of arguments have been presented followed by a conceptual framework giving a figurative representation of the connection between the study variables. At the end of the chapter, gaps of knowledge established from the reviewed literature and a chapter summary are given.

2.2 Performance of Community Based Conservation Projects

Project management literature rarely talks of project performance; it instead focusses mostly project success. Project success or failure is a simple measure of performance since the latter is more encompassing. Bannerman (2008) described project success as “a project delivered on schedule, within the set costs and to specification” and added that project success was the completion; the success of the product that is produced by the project; or the success in attaining the project’s business objectives. This definition of project performance in terms of “success” is no longer widely adopted due to its reductionist viewpoint. Sauer, Gemino and Reich (2007), contest that measures of project success like quality are perceptual. Offering a pragmatic view, Sauer *et al.* (2007) opine that, perceptions vary with the perspective of the project stakeholder and the time that has elapsed since project completion. Bonghez and Grigoriu (2013) comport that project performance is perceptual, adding that project success is more than the traditional triple constraint of scope, time, budget since it incorporates other elements such as acceptance by client, implementing organization reputation, alignment to the corporate strategy, team cohesiveness, ethical behavior, etc. This study views performance of CBC projects as the achievement of the main objectives,

conservation of wildlife, habitats, and improvement of local community welfare through local development.

The performance of CBC projects is based on circular causality of the systems theory. According to Shereni and Saarinen (2021), the main theoretical link that provides justification for CBC projects is that since vices against biodiversity conservation emanate from fulfilment of sustenance needs, alternative livelihood needs that lessen these needs will subsequently lessen the pressure on the biodiversity. This puts local community at the center of simultaneously conserving nature and spurring local development. Brichieri-Colombi, McPherson, Sheppard, Mason and Moehrensclager (2018) opine that the CBC projects must provide socioeconomic and biological benefits, connected through effective resilience mechanisms. This means that for the performance of CBC projects, the achievement of these two goals cannot be delinked and must be concurrently achieved.

Question may arise on how is that possible since conservation and development are often conflicting goals. However, based on the theory of change, (Weiss, 1995) positive feedback from these two goals of conservation and local development will lead to project performance. Galvin *et al.* (2018) pointed to myriad factors that must be right for positive social and ecological outcomes of CBC projects. These factors include and not limited to exogenous economic, historical, socio-political, and biotic and abiotic factors, besides the local circumstances and processes in where these projects are implemented. This research focused on giving an account of how project design activities affect conservation project performance.

As a link between development and conservation, there has been several CBC projects implemented around the world in the past three decades. Literature over this period and especially in the first decade culminated to publications based on learnt lessons. Early analyses (Wells, Brandon & Hannah, 1992; Western, 1994) could not reveal much about CBC project success, but argued it was because the initiatives had operated for a short period by then. However, later reviews were more critical arguing that the projects experienced an identity, lack of purpose to the degree that the most optimistic examples of CBC projects achieved merely a fleeting success due to major deficiencies in their design (Garnett *et al.*, 2007; Dressler *et al.*, 2010). Others has opined that the CBC approach was fruitless and should be replaced by other approaches. The suggested approaches ranged from community-based management (Newmark and Hough 2000) to even direct local community compensation for opportunities lost (Oates, 1999).

Recent reviews as those of Salafsky (2011); Roe, Mohammed, Porras, and Giuliani (2013) seem to suggest extreme positions that hinder progress towards effective integrated approaches. Stephenson (2019) while making a case for the importance project monitoring was paradoxical, pointing out that CBC projects had success in conservation and sustainable development, but also discredited the projects for having no impacts on a larger scale to reverse threats and trends. Lastly, Gurney, Pressey, Cinner and Pollnac (2015) concluded that CBC projects were performing. These divergent views do not seem to have solved the CBC impasse as division of opinion is evident.

Many analyses on the performance of CBC projects point to mixed success stories. The purported success failed to bring about lasting improvement in the welfare of communities in areas where CBC projects were implemented (McShane and Wells, 2004). Garnett, Sayer and Du Toiet (2007) calls the performance of these projects “fleeting and fragile”. This is because the performance is described in typically anecdotal case studies. Thus, the performance appears idiosyncratic, fleeting, and contingent on local history, society, and environment. Lee and Bond (2018) in their attempt to quantify the ecological success of CBC projects pointed out that there were problems that afflicted these initiatives and therefore bogged down the performance. The authors identified onerous bureaucratic demands, revenue collection by the government that goes to the exchequer, influence of outside conservation agencies and economic and human right failures. The literature however fails to mention that given the underlying circumstances and dismal results, focus should now be on the means, the design of CBC projects, not the ends.

Throughout most of their history, CBC projects seem not to have surpassed the expected threshold of successfully linking conservation and development of local communities. Wright, Hill, Roe, Rowcliffe *et al.* (2016) point to a disenchantment that began in the mid-1990s where the authors argue that literature criticized CBC approaches for having negligible impacts and sometimes adverse effects on conservation. Further, in a quasi-experimental approach that explored the contributory impacts of alternative livelihood projects used in CBC, Bauch, Sills and Pattanayak (2014) found no discernible conservation outcomes in them. Another critique of the alternative livelihood projects IMM (2008) labels CBC projects as initiatives promoting unsustainable solutions, were ill-adapted to local capacities, had limited market appeal and fell short of reflecting people aspirations for their future. These authors fell short of acknowledging that a proper CBC project design will ensure local community aspirations and promote local empowerment.

Other researchers however have pointed on positive results of CBC projects. For instance, Sayer and Campbell (2004) found that integrated projects had long-term success stories and opined that it was possible to hypothesize about the elements that likely determined CBC project results and could be tested formally on global scale. Based on this recommendation of testing hypotheses, researchers have attempted to test hypotheses about CBC project successes and failures. The earliest found was that of Salafsky, Margoulis, Redford and Robinson (2002) who tested the hypothesis on whether a viable conservation enterprise that generated benefits for a local community would make the latter act to counter the threats to biodiversity and promote conservation. The results could not support this hypothesis; however, the researchers came up with an alternative hypothesis that; benefits from such conservation enterprises were because of the action learning that occurred due to development of the CBC enterprise itself, regardless of the eventual financial success.

True to the assertion that performance of CBC projects has been fleeting and fragile, past studies seem to point to the fact that holistic results of the initiatives might be far-fetched at times. For instance, Galvin *et al.* (2018) adopted a mixed-method approach that entailed inductive and deductive textual analysis of cases to review CBC literature based on geospatial visualization, descriptive statistics, and correlational analysis. The study found that CBC projects implemented in Africa had positive results in less than half of the cases that the authors evaluated, (35 of the 73 cases assessed had positive outcomes). The shortcoming of Galvin *et al.* (2018) is that the study exclusively emphasized on social outcomes and employed qualitative methods. These results are therefore not conclusive owing to the lack of triangulation in the methods employed and cannot be relied upon to pass the judgement that CBC projects have failed.

Other studies have however redeemed some image for CBC projects as a vehicle for linking conservation and development in Africa. Silva and Mosimane (2012) used a mixed methods approach on assessment of economic benefits of CBC projects in Namibia to survey communal conservancies. The results indicate that members realized some direct economic benefits, however, indirect benefits that promote improvements for all residents were not realized. Although the results were positive, the regression analysis showed that participation in projects stood to economically benefit households but did not show community-wide benefits. The data was however a snapshot at a point in time in only two projects, hence the need to investigate these assertions in a larger scope of projects. The results of Galvin *et al.* (2018) and those by Silva and Mosimane (2012) suggest that often, CBC projects

implemented in Africa have led to combination of positive and negative or negative social outcomes, but surprisingly, ecological outcomes have been mainly positive.

The performance of CBC projects is achieved when the design features factor co-management, empowers local people, reduces economic inequalities among the locals while maintaining cultural and livelihood benefits. This calls for elucidation of the relationship between positive and negative community socio-economic welfare and conservation outcomes. In a meta-analysis on 165 protected areas, Oldekop, Holmes, Harris, and Evans (2015) used data from 171 published studies and evaluated how protected areas projects affected local people community well-being, the factors associated with the project impacts, and most importantly the relationship between socioeconomic outcomes and conservation. The results indicated that protected areas that unequivocally integrated local community as stakeholders had higher chances of realizing joint socioeconomic development and biological conservation outcomes. On the same, Oldekop *et al.* (2015) also found out that in some instances, strict protection was required but the overall argument of the authors was that development and conservation objectives could be synergistic. These results support the argument in this thesis that having a project design element of engaging stakeholders has an influence on CBC project performance especially in ensuring positive economical, ecological, attitudinal, and behavioral outcomes.

CBC performance has also been tested based on outcome domains of economical, ecological, attitudinal, and behavioral outcomes. In a review of 28 CBC projects, Brooks, Franzen, Holmes, Grote, and Mulder (2006b) tested hypotheses for different conservation strategies based on four outcomes, namely: attitudinal, behavioral, ecological, and economic performance. The authors found that conservation success improved based on the extent to which the local community used biodiversity, the extent of market integration by the projects, the level of public participation (devolved decision-making) and the local community homogeneity in the conservation area. The results of this review indicated that local community participation was most likely to improve attitudinal, behavioral, ecological, and economic performance if strong local capacity for the project beneficiaries was integrated. Market integration; however, had positive effects only on behavior and economic outcomes. The review however was silent on how the design of the conservation project could improve on the four outcome domains of attitudinal, behavioral, ecological, and economic performance.

On the same note, partaking of local community in conservation and development initiatives empowers community to design, implement, monitor, and control projects effectively and efficiently. Shereni and Saarinen (2021) surveyed households in three purposively selected wards out of the twenty in Hwange National Park communities in Zimbabwe. Based on the performed quantitative analysis, income generating alternative livelihood projects, specifically handcraft making, gardening, beekeeping and livestock keeping, were perceived as important empowerment options by communities. The communities also appreciated other CBC empowerment benefits such as revenue sharing, local infrastructural development, and game meat. The paradox of this study was that the results show that a section of respondents had negative perceptions towards the CBC projects. This further confirms the fleeting and fragile argument, meaning, in some cases, the performance of CBC projects is depended on different stakeholders' perceptions.

Scholars have however tried to highlight the route to CBC project performance. Waylen, Fischer, McGowan, Thirgood and Milner-Gulland (2010) assessed local cultural context effect on CBC project success by testing effect of participation of local community, capacity building in terms of conservation education and benefit provision by systematically reviewing CBC literature in 68 interventions. The tested hypotheses indicated that CBC interventions that involved local institutions were also more likely to prosper and that a local cultural context that is supportive influenced CBC intervention outcomes. This perhaps indicates the importance of stakeholder engagement and capacity building in conservation projects meant to improve welfare and biodiversity preservation. The authors further highlighted lack of support in the role of community, provision of benefits, integration of markets, and conservation education. The conclusions were that cultural context was a key determinant that shaped the outcomes of CBC projects but fell short of recognizing that the remedy to the deficiencies identified was factoring the same in the CBC project design.

Other studies informed on conservation policy making and project design and demonstrated the obligation of developing targeted approaches if conservation and alleviation of poverty outcomes are to be realized. Suich (2013) employed quasi-experimental design in an evaluation of two CBC interventions in two different countries in Southern Africa. The author evaluated two CBC projects, one in Namibia and another in Mozambique, measuring household level impacts by use of multidimensional poverty indices. Multivariate analysis techniques, principal component analysis and factor analysis reduced the dimensionality of the indices constructed. The results showed lack of positive impacts on the multiple poverty

dimensions that could be credited to the CBC initiative in Mozambique whereas Namibian CBC initiatives had marginal positive impacts only on household financial capital. The authors attributed the discrepancy to the difficult economic climate in Mozambique arguing that it escalates the prerequisite for delivery of positive impacts by CBC projects at household level since no such impacts could be realized from elsewhere in the economy. The study however failed to point to the intrinsic community aspirations where these projects were implemented, which could also be the cause of variation of the performance.

Though widespread in conservation areas in Sub-Saharan Africa, the discourse of performance of CBC projects is dogged with controversy. It is therefore imperative to have a clear understanding on the effectiveness of CBC initiatives as an approach to conservation, and the main elements related to the success or failure of CBC projects, and the extent to which these elements operated. Brooks, Waylen, and Mulder (2012) with the aid of hypotheses testing, additionally studied another evaluation on the impact of national context, local community traits, and project design on CBC project overall performance outcomes of attitude change, behavioral change, ecological and monetary outcomes. The authors used analysis of bivariate data and ordinal logistic regressions and the results confirmed that project design, specifically building the capacity of local project beneficiaries was related statistically to overall performance throughout all results. The authors observed that traits of the local people in conservation areas like tenure regimes, supportive cultural ideals and establishments were in addition essential for project fulfillment. The outcomes however provided little proof that countrywide context influenced conservation project outcomes.

The CBC project concept borrows heavily from participatory development discourse. As integrated initiatives, CBC is anchored primarily on the idea that social and economic benefits achieved through the engagement of local community can lessen poverty, enhance social cohesion, and in return boost conservation. Although Galvin *et al.* (2018) cautions that monetary and nonmonetary inducements were essential entirely but not adequate on their own for positive outcomes, other literature has shed a positive side. Brooks (2016) uses a comparative CBC database targeting 136 initiatives to evaluate which factors of country wide socio-monetary and community-traits, political context, and project design capabilities have been related to win-win results. The author used the same analysis techniques as Brooks *et al.* (2012), that is, to illustrate that capacity building of project beneficiaries, participation of local community, training on environmental matters and project age contributed to win–

win outcomes. It is imperative to project designers to ensure that the project layout features bring about joint success in CBC projects.

Biodiversity resources are common pool resources susceptible to tragedy of commons. It is therefore of paramount importance to for public and international conservation agencies to be cognizant of the right of the owners of the resource to self-govern as pointed out in Ostrom's Principles for Managing a Commons (Milupi *et al.*, 2017). On self-governance, strong local institutions (Ayana, Vandenabeele, and Arts 2015; Ntuli and Muchapondwa, 2015) are important. Other studies focus on local stakeholder engagement (Noe and Kangalawe, 2015); capacity building of local project beneficiaries (Gruber, 2010) distribution of economic benefits (DeGeorges and Reilly, 2009). These studies nevertheless fall short of focusing on ecological, economic, and social goals together, ignoring the nested nature of socio-ecological systems necessary to capture the performance of CBC projects. Instead, they focus on only one outcome, either social success, ecological success, or economic success.

The main drawback in most studies that have investigated CBC project performance is the failure to admit win-win state of affairs are seldom, and the necessity to address trade-off required to link conservation and development. According to McShane, Hirsch, Trung, Songorwa, *et al.* (2011), despite win-win outcomes being elusive there is evidence that the performance of CBC projects was achievable. This assertion is supported by Persha, Agrawal, and Chhatre (2011); Miller, Caplow and Leslie (2012) who argued that a link between ecological, economic, and social outcomes exists. Earlier, Adams, Aveling, Brockington, and Dickson *et al.* (2004) had suggested that the lack of win-win in CBC project performance came about from the failure of cognizance to realities of integrating development and conservation, the two often-conflicting goals of ICDPs. This is so since conservation and poverty existed in separate policy realms with diminutive opportunity for integration. However, naturally, unless alleviation of poverty is done, conservation will most likely be undermined.

Based on literature, CBC project performance measurement can be measured using the ecological, behavioral, attitudinal, and economic framework. Behavioral indicator are the outcomes regarding change of local resource use by stakeholders. Behavioral success denotes behavior change that reduces prevailing wildlife and habitats threats. In a performance review of a conservation project, Brooks *et al.* (2013) defined behavioral success as the reduction in the resource use levels and other practices negative to

conservation, for example, poaching, charcoal burning, cattle grazing and blocking of migratory corridors through encroachment etc. In conservancy areas, behavioral change of the local community to grazing patterns that respects wildlife areas is important (Lee and Bond, 2018). Performance can be measured in terms of outcomes of a project regarding use of local resources (Brooks *et al.*, 2006b), and outcomes of a project with respect to declining occurrence of illegal activities. This is because conservation projects focus on reducing threats that communities have on ecosystems. Positive behavioral success could be guaranteed when a project capitalizes on building the capacity of local people, groups, and institutions (Brooks *et al.*, 2012) and in conservation projects with more community participation project implementation (Brooks *et al.*, 2006b). These are regarded to be the precursors of community behavioral change towards the utilization of local natural resources.

Ecological indicators are the outcomes associated with habitat, or wildlife species of interest being in better condition following the CBC project intervention (Brooks *et al.*, 2013; Brooks *et al.*, 2012; Waylen *et al.*, 2010; Brooks *et al.*, 2006a). This could be an increase in population size of a species, or the abundance of a given resource. Increase in wildlife numbers is an important CBC project performance indicator. Suich (2013) reported to the increase of wildlife population numbers during the project implementation period of CBC projects in Mozambique and Namibia. Lee and Bond (2018) argued that since CBC projects in Africa were implemented in pastoral communal areas, an important indicator for ecological success would be significant greater wildlife densities and significant lower livestock densities in conservation areas. Positive ecological change is likely when the project engages with traditional knowledge systems such as governance institutions and cultural traditions and builds capacity in the local communities (Brooks *et al.*, 2012). These forms traditional ecological knowledge systems which are vital to sustainability of projects and will most likely spur regeneration of biodiversity in zones where CBC projects are implemented.

Attitudinal indicators are outcomes associated with change in local attitudes towards the project and conservation (Brooks *et al.*, 2013; Waylen *et al.*, 2010; Brooks *et al.*, 2006a). The acceptance and attitude towards wildlife depends on the empowerment the local community derives from conservation which could be in terms of benefit sharing from the enterprises present in conservation areas. Groom and Harris (2008) used a semi-structured questionnaire survey to investigate the importance of unbiased revenue sharing in two

community ranches in Amboseli Ecosystem in Kenya. The authors tested two hypotheses; (i) whether the amount of money paid to households was significant in affecting attitudes to wildlife conservation, and (ii) whether wildlife revenue distribution was significant in affecting attitudes to conservation of wildlife. The ordinal logistic regression statistical analysis performed revealed that it was the presence or absence of benefit sharing to the community and not the amount of revenue received which determined the attitude of the people towards conservation of wildlife. This is a prove that community empowerment through benefit sharing could have significant social and environmental consequences and therefore important in CBC design. It underscores acceptance of wildlife and conservation on community land as an important indicator of CBC project performance owing to provision of incentives to the local community.

Project performance for CBC initiatives could also be indicated by the level of economic performance, especially economic benefits such as financial, employment, market integration for local products or other development benefits. Brooks *et al.*, (2013) pointed out that locals should receive economic and other development benefits (for example roads, schools, hospitals) from CBC projects. However, provision of public goods such as infrastructural benefits and financial benefits from conservancies are important CBC project performance indicators but could not necessarily improve the welfare of the local community. Using a quasi-experimental design that Riehl *et al.* (2015) applied regression models and statistically compared temporal trends between non-conservancy and conservancy units on a variety of social and economic outcomes. Results indicated that conservancy economic benefits did not trickle to individual households. Wealth index of conservancy members was the same as non-conservancy member (not significant at 0.05, *p-value* = 0.06). This shows that empowerment alone could not be relied as the only measure of CBC project performance. This study holistically measured the performance based on economic outcomes in terms of empowerment; attitudinal change to acceptance of wildlife conservation; behavioral change in terms of adoption of sustainable resource use by the local community; and ecological outcomes in terms of regeneration of the biodiversity.

2.3 Project Design Activities and Performance of CBC Projects

Project design is as an early project phase that defines structure, key features and criteria for project success, major deliverables and further sets the overall tone of the undertaking. Gitonga (2012) points out that project design answers the question “what is to be done?” In

its standards for conservation project and program management, WWF defines project design as the action plan that includes goals; objectives and the theory of change, monitoring, and operational plan (WWF, 2017). The central argument in this thesis is that project design activities are those aspects that go into the project to link conservation and development needs of the local community by properly factoring in the states and trends and lead to performance of CBC projects.

Project design activities in CBC initiatives require an amalgamation of conservation and human development sciences. Burgess, Franks, Rodgers, Mattee, *et al.* (2001) term it as a ‘social-anthropological’ approach where locals carry on with activities in coherence with the local environment and participate actively in conservation of biodiversity. The early highlights of the project design in this approach are that of IIED (1994); Borrini-Feyerabend and Buchan (1997) where project design that leaves locals and natural resources in equilibrium is advocated. Project design in integrated conservation projects is a major concern of social scientists pursuing a reasonable conservation path; especially in Africa, whereby, the same biodiversity resources that are to be conserved are exploited for sustenance and development purposes. Given the underlying philosophies and assumptions that form the basis of CBC projects, the efficacy of the approach has been questioned.

From the literature, the emerging perception is that conservation policy makers and project designers are far removed from local realities. This is because conservation project outcomes are the consequence of among other factors, conceptual designs. One of the foremost criticisms is that the conceptual designs of integrated conservation and development initiatives tend to be grounded on erroneous assumptions about the local social systems where these projects are implemented (Wright *et al.*, 2016). This footing calls for understanding when and how CBC aligns with the local community and therefore the importance of designing socially acceptable and more sustainable CBC programs. Conservation practitioners and designers need to be attentive to social, economic, and ecological needs of the local people as well as potential synergies and trade-offs among them. It should be however noted that unanimity about CBC projects is that trade-offs are common, however, synergies are uncommon (Brooks, 2017). This points to how delicate the design of CBC projects can be, and there exists a thin line between a design that leads for success and another that leads to failure.

Community based conservation aim to empower local people in wildlife conservation and management. As the vehicles used in this new paradigm of conservation, CBC projects are

polysemic in nature based on various manifestations in their design in different countries and locations. This plurality of reality brings about considerable social, political, and economic consequences, therefore calling on any approach into them to be pragmatic. From this point, CBC projects are complex, usually operating at multiple scales. The management and governance structure of these projects incorporates institutions at varying societal levels and further, ecological processes that affect one ecosystem may happen at multiple temporal and spatial scales. There seems to be a variety of opinions on how best project design can link conservation and development and therefore a lack of concurrence by authors on what should constitute the ideal CBC project design.

Frameworks and templates for designing CBC projects do not exist. Early attempts to give a template for the design of CBC projects are that by Brown and Wyckoff-Baird (1995) who listed local participation and indigenous knowledge as important alongside location factors such as biological, social, and political considerations. The authors insist that to ensure project performance, CBC project design must consider where the conservation and economic development goals intersect. According to Brown and Wyckoff-Baird (1995), when conservation and development goals intersect, there is a possibility of introducing development interventions that will result in conservation if favorable policies, markets, security of tenure and other important factors are present. Johannesen (2004) observed that the trend in designing integrated conservation projects in Sub-Saharan Africa was encouraging wildlife conservation by reconciling management of protected areas with socio-economic needs of the local community. Whereas these literatures highlight important aspects in CBC project design, they are not based on any empirical evidence. At the project design stage, the anticipated linkages between the planned realization of social and economic benefits by local community and the necessary behavioral outcome that a particular project seeks to achieve to reduce pressure on wildlife are of paramount importance.

The merits of integrated conservation initiatives are debatable. Critiques fervently opposed to the design of integrated conservation projects (Newmark and Hough, 2000; Baral, Stern and Heinen, 2006) argue that the projects are devoid of adequate conservation measures and focus on development initiatives instead, which are not sufficiently linked to sustainable and environmentally friendly behaviors. Arguing for CBC projects, Popova (2014) pointed that there were positive outcomes reported when stakeholder participation in terms of engagement of local tenure and practices related to management of a resource were integrated in the CBC project implementation. The authors argue here that this includes cases

where the local community is assumed to be devoid of skills of resource management and therefore, capacity building is required for empowerment. In addition, Tallis *et al.* (2009) saw CBC projects as initiatives that found solutions benefitting both conservation and the local society. Other researchers were cautious in their arguments for CBC projects, for instance, in a review, Reed *et al.* (2016) pointed out that integrated conservation initiatives had some substantial potential in realizing environmental and social objectives. The engagement of the local community and capacity building therefore emerge as an important prerequisite for the performance of CBC projects, and to that end, important aspects of the project design.

Addressing the debate raised by critiques and supporters of CBC projects is not within the scope of this study, as the study attended to the factors that according to literature, are deemed affect the design of CBC projects and especially the ones of prominence in Sub-Saharan region of Africa. The following are the factors that make up a comprehensive CBC project design as identified from the literature. Scope determination as identified by Banda Jr. and Pretorius (2016); Mirza, Pourzolfaghar and Shahnazari (2013). Capacity building of project beneficiaries (Nelson and Agrawal, 2008; Koutra and Edwards, 2012; Muller and Coetzee, 2012; Brooks *et al.*, 2013; Nthiga *et al.*, 2015). Further, monitoring and controlling (PMI, 2017; Rezanian, Baker and Burga, 2016) and stakeholder engagement (Eskerod, Huemann and Ringhofer, 2015; FAO, 2003; World Bank, 1998).

2.4 Scope Determination and Performance of CBC Projects

Successful project management emanates from the realization that project parameters and boundaries are required to achieve the objectives in a project and mapping out how to get there. PMI (2017) describes project scope as the specific work that must be undertaken in delivering a product, service, or achieve specified planned features and functions. Based on this definition, it could be said that scope determination is the process of establishing the work or the major tasks, deliverables and targets of the work required to complete the project. Scholars admit that a project having a well-defined scope was most likely to be successful, with its completion within the parameters of the iron-triangle, these are the planned time, the budget, and the quality of the project (Banda Jr and Pretorius, 2016; Mirza *et al.*, 2013). That said, CBC projects place the community at the center of the conservation action. Scope determination in these projects therefore calls for understanding of community context in

terms of the prevailing demographics, existing social structures and networks, community diversity, socio-economic characteristics, and history.

Applying the theory of change, scope isolates the pertinent prerequisites to the long-term goal, the preconditions that CBC projects must address to achieve the required goal. Wysocki (2014) points out that most project failures and lack of performance originate from a sloppy scoping process. Further, Mirza *et al.* (2013) opined that a major contribution to unsuccessful projects was deemed to be the failure to understand or define the scope of a project or a product at the design stage in initiation. To highlight the importance, perhaps in a risk perspective, Banda Jr and Pretorius (2016) were of the view that scope determination was a proven and effective means of improving the probability of the success of a project while at the same time significantly dwindling project risks throughout implementation. The above alludes to an agreement that projects whose scope is well determined at project design stage bear a slim chance of having slippages of schedule, scope creep, poor deliverable quality, and budget overruns.

Conservation projects are implemented in complex social, cultural, and ecological systems, and scope determination is crucial to parameters of such projects. Pursuant to this, according to Foundations of Success (2017) Manual on Improving the Practice of Conservation, a clear conservation project scope fixes the confines of conservation project deliverables. This is upheld in that wildlife or natural areas falling outside of the target area are left out, no matter how important they might be, if they do not fall within the precincts of the set project scope. CBC project efforts to conserve ecosystems and promote local community welfare will typically focus to a particular geographic scope or thematically, a certain project area. Foundations of Success (2017) and WWF (2006) opine those geographic scopes comprise of efforts to specific area where the plight of biodiversity is threatened by the consumption attributed to the local community, while thematic scopes encompass conservation efforts directed at explicit threats to biodiversity or enabling conditions in a particular geographic expanse. Thus, scope determination in conservation sets the project confines in broad parameters. Such parameters might be an ecosystem, conservation of a critical habitat area, eradication of a specific threat, or even initiatives to safeguard a wildlife species.

The scope of CBC projects abodes communities in conservation areas at the center of conservation, clearly mapping out the thematic and geographic parameters. In other words, the tasks, and deliverables of a CBC project link conservation of biodiversity and uplifting of the welfare are choreographed to fit a particular community. In addition, the scope ought

to focus on the target in terms of geographic parameters, and the habitats areas of implementation. According to TNC (2007), the determination of a conservation project scope is guided by the biodiversity of interest, based on this, then the scope can be taken as an ecological or a geographic frame. This approach to scope borrows from that of business perspective, where project scope forms the basis of all project decisions which are ultimately geared towards achieving the planned deliverables (Kerensky, 2018). The theory of change informs that project design activities ought to map out the scope based on the outcomes, where the latter is used to identify major tasks to be undertaken in the project to realize futuristic outcomes. These tasks and deliverables could be determined to focus on a particular wildlife species, a community in a certain biodiversity rich area or even an ecological system. Ideal CBC project scope should focus thematically on an ecological or a geographic frame to link conservation and development goals to achieve economic, ecological, attitudinal, and behavioral outcomes.

Conservation projects comprise of tasks and subtasks of the thematic and the geographic areas, each of which has its own importance in the fruitful completion and performance of the project. In these projects, scope determination needs to document the major tasks and subtasks linking conservation and local community development. Miller *et al.* (2012) opines that the link existing between development and biodiversity conservation was improving the welfare of the local community through poverty alleviation. Poor local community members depend on natural resources for their well-being, which if unchecked results in unsustainable resource use. Early in CBC project design, tasks that prioritize alleviation of poverty through alternative initiatives to halt unsustainable use should be determined. Fageha and Aibinu (2014) researched on prioritization of scope definition elements in projects and concluded that project tasks and deliverables ought to be identified in initiation stage to avoid risks and rework during implementation. Due to complexity of CBC projects, the cost of making new changes and rectifying tasks, deliverables and targets increase once the project is under implementation.

There seems to be evidence that a correlational relationship between determination of scope and project performance does exist. On prioritization of scope determination in projects, Banda Jr., and Pretorius (2017) probed the role that defining the scope of a project early in the design had on the performance of infrastructure projects. The researchers surveyed 12 projects and by employing correlation analysis, results showed that significant relationship between definition of scope and the resultant performance existed in the studied

infrastructure projects. Although the authors failed to explain the specific aspects of scope behind these results, the relationship between scoping and corresponding performance could be ascribed to prioritization of tasks that enable project management to plan and assign resources effectively.

In most parts of Africa, CBC projects are designed to distract local community aware from unsustainable resource use. The assumption of the projects is that local community will probably develop positive attitudes towards conservation once a project meets their livelihood needs (Schuett, Dahal and Nepal, 2016). This underscores the potency of identifying groups that are more likely to threaten wildlife within the geographic and the thematic scopes intended. Earlier literature points out that benefit sharing is used in CBC projects to reconcile conservation with economic and social needs of the local people (Brandon and Wells, 1992). To this end, CBC initiatives must be designed to discourage put off poaching of wildlife and stimulate local development by sharing biodiversity benefits with the local community and integrate markets for local produce. Since it is conservation by distraction, the project scope must clearly target pertinent demographics and other social groups deemed to be a threat to biodiversity and give them alternatives. These groups could include women, the youth, the beekeepers, the livestock keepers, etc.

Identifying and targeting the right beneficiaries is emphasized to realize project performance. As for CBC projects, Johannesen (2004), cautioned that many existing integrated conservation initiatives had poor targeting on the right beneficiaries. This was because the projects could not link exploitive activity of the local communities and the conservation goal. This casts doubts about the underlying assumption of CBC projects that, locals will respond to the benefits received by reducing poaching of natural resources. The scope of the CBC project design must therefore specifically target the groups involved in unsustainable exploitation of natural resources, so that alternative livelihood projects can be used as a means of distraction.

It has been empirically proved that targeting the right beneficiary has a significantly contributes to the success of a project. Kikwatha, Kyalo, Mulwa, and Nyonje, (2017) used mixed method approach, surveying 188 dairy goat farmers, conducting subsequent interviews and focused group discussions to study the influence that design factors had on project sustainability. The researchers analyzed the data regression where the F-scores were used to test hypotheses. The results show there was significant association between the selection project beneficiaries and the sustainability performance of dairy goat projects. In

CBC project scope determination local people who depend on the biomes for sustenance and have no other alternative source of livelihood to earn a living must be targeted to as the project beneficiaries.

Scope determination in CBC projects also encompasses geographic scope, the efforts to target to conserve and enhance local development in certain ecoregions and priority areas. CBC projects should be to identify the specific geographic area based on biodiversity importance. Geographically, most CBC projects center activities geared to conservation in wildlife areas and conduct rural development undertakings in the surrounding communities (Alpert, 1996). The identified areas should be biologically rich, aesthetically attractive and above all, economically poor. The WWF Standards (WWF, 2006) advice that projects with thematic scope to protect specific species should have a geographic focus. A clear identification of geographic scope in the design of CBC will set the boundaries within which project activities that link conservation and development are to be conducted given the meagre resources.

Furthermore, project deliverables are measurable results that confirm the achievement of the goals falling within the scope of the project. The CBC deliverables should be acceptable to the local community because of deliberate CBC project work and have the precise role in realizing the goal of the project, link conservation and development. Given the complexity of CBC projects, the criticality of clear project deliverables that link conservation and development cannot be underestimated. In a review paper meant to unlock the potential for transdisciplinary contributions, Van der Waldt, (2012) focused on project management methodologies, functional areas, and practical applications that enhance project performance, project deliverable identification not only increases the chances for project performance but also provides basis for performance monitoring and evaluation. Thus, CBC project deliverables should aim to achieve wise use of resources, link conservation and development of the local community among others.

2.5 Capacity Building of Project Beneficiaries and Performance of CBC Projects

Building the capacity of stakeholder is a key enabler of project implementation. Capacity building empowers individuals, groups, and institutions, making it a pillar of participatory development and stakeholder theories. Building the capacity project beneficiaries forms an imperative factor of projects, particularly in community development. To this end, capacity building has been defined as process by which project stakeholders are assisted by agencies

in developing capabilities to carry out functions, remedy problems and set and attain goals (UNDP, 1997). Koutra and Edwards (2012) defined capacity building as the passing of the applicable knowledge, skills, competence and, other elements necessary to the project beneficiaries for the purposes of empowerment. The theory of change heavily informs capacity enhancement of local community, and it heralds development initiatives.

Capacity building allows individuals and institutions to perform at a greater capacity granting them a larger impact in projects. In another context, Wing (2004) describes capacity building as growing the potency of an organization to fulfill its assignment. Moreover, project managers and policymakers always rely upon practices and theories of social capital and capacity building in designing interventions, which prompt localized social networks with a purpose to mitigate the impact of social exclusion. In the spirit of participatory development theory, Eade and Williams (1995) pointed out capacity building as tool that enabled locals to define values, priorities, and act on their decisions. This places capacity building of project beneficiaries as a tool to rural development that prioritizes local community skills, knowledge in resolving local development issues. Non-governmental organizations and other institutions affiliated with local community for implementation of CBC projects ought to avail a range of bridging services to enhance local empowerment. These bridging services of capacity building include start-up funds for conservation enterprises, marketing, technical training, institution building skills, knowledge transfer, research, and social services (Galvin *et al.*, 2018; Seixas and Berkes, 2010). This asserts the role of capacity enhancement as an enabler of CBC project performance.

The CBC project model places local community ideally at the center in designing and implementing conservation and local livelihood initiatives for development purposes. It is therefore paramount that the capacities of the same community must be enhanced to create a favorable environment for the success of CBC projects. To empower local community, capacity building, as especially in community projects could take the dimension of sustainable livelihoods framework (Nthiga *et al.*, 2015). The sustainable livelihoods framework dimension is composed of human, social, financial, natural, and physical capitals ((DFID, 1999). The sustainable livelihood owes its popularity since it is holistic, people-centered, and in addition, it recognizes many outcomes, influences, strategies, and actors, and it bridges macro and micro-level development. Nthiga *et al.* (2015) argued that livelihoods concept was popular in analyzing development interventions as it unraveled and evaluated the outcomes of development and poverty eradication interventions. The authors

however fail to show the strong connection between poverty and biodiversity conservation. Past literature (Adams *et al.*, 2004) has shown that a typology of relationship exists between conservation of biodiversity and development work. There exists a strong connection between poverty and biodiversity conservation since the latter is exploited to support the livelihoods of communities living in poverty.

The development to eradicate poverty and reduce biodiversity dependence correlates with institutional factors that impact decentralization of managing of biodiversity resources to local communities. Strengthening of local institutions on how and positioning them in context with others is important. By comparatively analyzing natural resource management reforms in seven Southern and Eastern African countries, Nelson, and Agrawal (2008) found that external support to CBC projects in many African settings needed to give priority to investment in local community capacity. This was to empower them to negotiate for improvements in benefit sharing, resource rights, and improve on resource allocation processes and ward off social ills like elite capture. In addition, local communities with bigger capacities, knowledge and social cohesion are anticipated to have an easier time in joining forces to manage resources and designing development projects. This underscores the necessity of empowering local communities in conservation areas through capacity building.

Conservation and rural development landscape are shrouded with complexity, making the role of community institutions important. Strengthening local community institutions and organizations affords the former the opportunity to optimize the performance of conservation and rural development projects. Dawson, Coolsaet, Sterling, Loveridge, Gross-Camp, *et al.* (2021) in a review of 169 peer-reviewed publications on well-being and conservation found that recognition of local social capacities produced effective conservation environment while at the same time empowering local communities. To add on to that, Brooks *et al.* (2013) tested hypothesis on whether improved capacity of institutions strengthened the ability of local community members to coordinate in conservation and development. The bivariate analysis indicated that capacity building had significant relationship with behavioral success in conservation initiatives. This study despite showing the importance of capacity building and the strengthening social capital failed to precisely show how such features were to be factored in a conservation project design.

CBC projects pools skills and resources and identifies key local community problems to be tackled through common action to provide a pathway for effective actions in conservation

areas. From a normative perspective, enhancing capacity and the formation of sustainable livelihood capitals are important in achieving a more effective, sustained, and democratic participatory processes in conservation initiatives. On a pragmatic perspective, since local community participation improves the quality of decisions, capacity building is of paramount importance. To this end, Nelson, and Agrawal (2008) noted that longstanding growth of the capacity of local communities to affect the institutional arrangements that govern conservation were vital to the future positive evolution integrated conservation. The study however fails to highlight which capacities were crucial for the positive future. Enhancing human and social capacities through CBC project design could positively influence project performance outcomes.

Capacity building in CBC projects is also meant to enhance local community's ability in learning and adapting through change. Koutra and Edwards (2012) opine capacity enhancement in conservation projects to be based on four sustainable livelihood concepts of financial, physical, human, and social capitals. On the other hand, according to Nthiga *et al.* (2015); DFID (1999), in local development initiatives, capacity building comprised of five sustainable livelihood framework concepts, namely, financial, physical, human, social capitals and natural capitals. The framework targets household level resources and the livelihood activities that could be realized by the community using those resources. Sustainable livelihood framework focuses on the mediating processes that influence the livelihoods that are carried out such as local institutions and regulations, to leverage them and empower the local community.

Based on this premise, enhancing human capacity is critical in CBC project design to maximize local community potential to conserve biodiversity and stimulate local development. Through enhancement of human capacities, abilities of the local community individuals and groups of interest are strengthened to participate in local development and biodiversity conservation. Human capacity is critical in the planned theory of change in the pathways linking conservation and development. To achieve required empowerment for economic progress in communities, the enhancement of human capital is crucial (Koutra and Edwards (2012). The imparted knowledge and skills result into higher productivity and ultimately lead to attitudinal and behavioral changes of local community towards conservation. Human capacity enhancement targets both at societal and individual levels to impart not only conservation skills but also entrepreneurial skills that startups. These efforts

initiate a chain of events leading to preservation of biodiversity and local development, the intended outcomes of CBC projects.

Further, capacity enhancement is known to precede socio-economic development, making social capacity enhancement important in CBC project design. Social capital models individual action, realizing positive local development and biodiversity outcomes. This way, social capital enhances community livelihood through generation of income and bettering community governance. According to Muller and Coetzee (2012), social capital is about power; who controls what resources; and who has access to it and who does not. In addition, Qian, Barroso, and Messer (2019) perceive social capital to be attending to community sphere, arguing that it comprised of societal interactions, trust, and essential reciprocity for facilitating shared outcomes. Moreover, social capital is an important resource in community development, especially for facilitation of social interaction and promotion of mutual support and cooperation.

Attention is required towards social capital as it comprises of the relationships that shape the realization of the potential of human capital, for the individual and collectively. According to Brooks *et al.* (2013), investment in social and human capital in local communities leads to positive outcomes as it lowers the costs linked to developing and implementing local rules about resource use. O'Connell, Nasirwa, Carter, Farmer, *et al.* (2017) pointed that in realizing conservation goals, individuals and groups in communities ought to attain a diversity of skills, knowledge, and information. The authors encouraged capacity enhancement activities on social dimension by incorporating all sections of the community. This shows the essence of shunning one-size-fits-all attitude due to community heterogeneity in conservation areas.

The CBC project design ought to focus on building on the existing social and human capacities to empower and improve living standards of the local community in conservation areas. In a review, Sastre-Merino and Carmenado (2012) developed a framework to inform on capacity mapping at social and individual levels to increase chances of project performance and sustainability. From the Sastre-Merino and Carmenado (2012) review, human and social capacities that could be prescribed to spur socio-economic development in conservation areas comprise of enterprise planning, group-visioning, and undertaking shared management actions. It also includes having an equitable benefits distribution plan that limits elite capture, resolving internal management and resource use differences,

negotiating with outside conservation agencies, crafting an alternative enterprise business plan, and undertaking marketing of the local enterprise produce.

Community networks and norms that facilitate collective actions for mutual benefits bears the potential to facilitate the accrual of economic and conservation benefits to the local community. Communities in savanna have had a long history interacting with wildlife and have accumulated rich social capital in terms of traditional ecological knowledge at disposal to ensure performance of CBC projects. While contributing on challenges of participatory development in contemporary development space, Thomas (2013) acknowledges the significance of enhancing the capacity of locals in project implementation. Identifying and utilizing of traditional knowhow and skills is a critical step towards performance of CBC projects. The researcher pointed examples in Nepal to illustrate the importance of local knowledge and skills identification and the development of appropriate capacity building programs but fell short of declaring that as an important CBC project design basis. Empowering a community through own indigenous knowledge systems acquired over time for could form the conduit to sustainable development.

According to Ndongye, Mulwa and Kyalo (2021a), local community knowledge systems could be leveraged in ecological and social systems resilience building, as a way of integrating local development, and conservation. Ruiz-Mallen and Corbera (2013) reviewed 29 case studies in 23 publications to ascertain the interrelation of CBC initiatives, community resilience and local knowledge with social-ecological systems. From the results, traditional ecological knowledge was found to have a critical role in augmenting local community's adaptive capacity to social-ecological challenges in self-regulated CBC projects. This adaptive capacity was unlike in comanaged CBC projects where authorities and experts played key roles. These results point to the centrality of social capacity enhancement in promotion of self-reliance of the local community in local development and conservation affairs. According to the authors, the local community depended on traditional knowledge systems, local experience, community networks and local establishments and to handle dynamic change and boost conservation and development. However, the authors failed to identify capacity enhancement based on sustainable livelihood framework as vital to future CBC project design.

Capacity building should empower communities to utilize existing traditional ecological knowledge, social assets, and skills. Using an example of community development approach that was asset-based in Myanmar, Ware (2012) pointed that communities' capacity could be

enhanced to utilize tangible and social community assets to chart own development path. The study examined how to effect successful development interventions in Myanmar by focusing on utilization and approval of community potencies that pre-existed, communication systems and assets as the principal resources for development, including reliance on community leadership, advocacy, and social networks to realize significant change. Ware (2012) explained that the projects use minimal finance in the village development committees and instead attention is redirected toward social and tangible community assets. In this set-up, expert workers facilitate the locals, rather than being channels for financial assistance. The study argues that even in the challenging socio-political context of Myanmar these programs were unexpectedly effective. This points to the power of empowering local institution for conservation and local development, especially utilizing the traditional knowledge systems.

Developing the abilities of local community individuals, groups and institutions through human capital development is essential. This is so because it enables the local community to perform functions, solve local problems and in CBC projects, it enhances the means and conditions required to achieve conservation and development objectives. Wanje, Nyiro and Robert (2017) conducted a study to investigate the drivers of success for CBC initiatives in the Kenyan coast. The authors employed mixed method approach comprising of interviews, document reviews, observations, and focused group discussions and targeted 40 participants. The results show that training seaweed farmers, assisting in market integration to market local products and other capacity building initiatives were drivers of project success. Furthermore, the results show that donor funded CBC projects had the highest success score unlike those locally funded by community and the positive correlation between funding amount and project success rate. This clearly points to the essentiality of human and financial capitals in CBC projects.

CBC project design integrates capacity enhancement individuals and community establishments in making choices. According to Ndonye *et al.* (2021a), capacity enhancement transforms community choices into desired actions and outcomes. By the same token, Brooks *et al.* (2012) were able to manifest that project design that enhances the capacity of local communities was linked to ecological, attitudinal, behavioral, and economic performance in CBC projects. The authors employed a systematic review of global CBC projects found that enhancement of financial, human, and physical capitals bolstered the economic welfare and social capital, in turn improving attitudinal and behavioral

outcomes. Brooks *et al.* (2012) found out that in instances where the CBC projects invested capacity enhancement of local groups, institutions, and individuals, behavioral towards conservation was achieved. In addition, synergies in economic and ecological were found to have been plausible in cases of mature projects where capacity building of individuals and institutions was factored in the design. Though these results highlighted the cruciality of capacity enhancement using sustainable livelihood framework, they were not empirical.

For conservation and local enterprise purposes, tools, infrastructure, and assets are important factors of production. These are the important physical capitals that support communities to develop secure, stable, and sustainable local economies. Infrastructure assets like roads, water pipelines, communication conservation associated infrastructure like accommodation facilities are important in the design of CBC projects. Manoppo (2020) employed explanatory research to investigate the effect of natural capital, social capital, and physical capital on the performance of ecotourism in a conservation area. The authors surveyed 150 tourists, and 150 surrounding community members. The regression analysis by use of partial least square performed showed that that physical capital had not only positive but also a significant effect on ecotourism performance (R-Square = 0.289 at $p < 0.001$). These results underscore the importance of physical capital in conservation area. The results are however from a government protected area and not a community conservation project.

Linking conservation and development in CBC project design cannot be complete without the enhancement of financial capital. CBC model is based on conservation by distraction and relies on livelihood enterprises initiated to redirect labor from unsustainable use of resources. Pursuant to this, CBC project design must have provisions to empower community to organize and begin local startups. Therefore, financial, and technical capacities are particularly valuable in combining the comparative strengths of the local community and development practitioners. Walzer and Merrett (2002) adopted an agri-business perspective, to survey 117 cooperative managers to examine agricultural business' role in the process of development. Two statistical analyses were used; first, testing of independent means between unsuccessful and successful groups to establish group variances on certain predictor variables; and second, correlation to establish relationships between group success and the predictor variables. The results show that communities, particularly in rural and remote areas require suitable economic inducement that builds on local community characteristics. Local communities therefore require financial linkages to acquire funds for the necessary capital for establishing and expanding of local enterprises.

Financial capital is essential in providing and supporting livelihood enterprises which are designed to promote sustainable resource use alternatives and avert environmental degradation. Koutra and Edwards (2012) applied a participatory research design and demonstrated that deficiency of local community capacity enhancement impacted performance of conservation projects Ghana. The study found that after more than one and half decades later, tourism sector minimal impact, and failed to significantly reduce poverty in community areas. Financial capacity enhancement deficiency was found to have led to sector's failure to cut down poverty significantly. This study highlights the importance of finance to local livelihood enterprises that link conservation and development. The study underscored essence of financial capacity enhancement in the achievement of socially responsible local economies.

Majority rural population livelihoods, especially in arid and semi-arid areas in Kenya rely on natural capital, leading to rapid depletion. This poses direct threat to natural resources and biodiversity. This is because the local economic practices that exhaust natural capital are also known to undermine the resources essential for generating future growth. Considering this, enhancement of natural capacities to conserve biodiversity and reclaim affected habitats and species in an important factor of CBC project design. Nthiga *et al.* (2015) highlighted the significance of natural capital enhancement through the work of African Wildlife Foundation (AWF) which supported in partitioning the group ranches into zones for grazing, settlement, and conservation and further initiated soil conservation initiatives in Laikipia Ecosystem. Further, UNEP (2014) while reporting on how ecosystem payments can support green economy noted that human development needed to be dissociated from the unsustainable utilization of biodiversity resources and should be in tandem with long-term functioning of ecosystems. To this end, a proposition could be made that building of natural capital will directly influence the CBC project ecological performance.

The centrality of natural capital in conservation and development cannot be underestimated. Natural capital is a keystone concept around which the other capitals are built on and the CBC project design ought to pay attention to enhancement of natural capacity. Qian *et al.* (2019) employed sustainable livelihood framework in investigating how counties in the US state of Minnesota identified opportunities to plan and develop future tourism. Directed content analysis was used to examine and analyze plans of conservation capacity building. The results indicated that natural capitals were given the most prominence (59.8%). This

confirms that natural capital was recognized as the prime among other sustainable livelihood framework capitals.

In summary, capacity building enables alternative livelihood projects that substitutes a livelihood strategy that harms the biodiversity target due to unsustainable exploitation by availing a livelihood having negligible or minor impact on the same target. Roe, Day, Booker, Zhou, *et al.* (2014) posit that in some cases, provision of an alternative resource to the one that the locals are exploiting, like for instance empowering local people to find alternative source of protein rather than hunting bush meat can save wildlife species. The authors further argue that in other cases, CBC project focus might be to provide another source of income or an alternative occupation. Mostly this includes local enterprises like beekeeping and craft making as alternatives for escalating subsistence agriculture around conservation areas. Other avenues can be empowering the local community to adopt a substitute method of utilizing a natural resource, but with a lesser impact on the latter than the original method. For instance, promotion of fuel-efficient cooking methods to lessen firewood and charcoal demand.

Therefore, the proposition of this research is that the enhancement of capacities based on the sustainable livelihood framework inspires local communities to act on local issues, leading to biodiversity conservation and development. Furthermore, capacity building cultivates a sense of local resource ownership and empowerment, a ticket for local community to control their own future development and sustainability.

2.6 Monitoring and Controlling and Performance of CBC Projects

Conservation projects are implemented in complexity ridden environments, rendering tracking, reviewing, adjusting, and reporting project performance an integral part of evaluating the effectiveness of management actions in realizing nature conservation objectives. Guerra, Pendleton, Drakou, Proenca *et al.* (2019) point out that to realize conservation objectives, monitoring systems ought to not only convey biodiversity information, but also ecological dynamics including the associated effects on human well-being. CBC projects are designed against a background of complex social and ecological systems that have solid human-nature relations. Monitoring and control are essential in CBC project design for theory of change (Msila and Setlhako, 2013) to take place in that it ensures tasks, targets and deliverables of the intervention give rise to a chain of outcomes that in turn result to the anticipated impacts of conservation and development. Considering CBC

projects ought to reconcile conflicting goals of conservation and development where a win-win is required in these two goals, project monitoring and control in these projects is therefore indispensable.

Project monitoring and controlling is the aspect of design that is entrenched in the overall project plan to establish the need to take corrective action, whilst there is still time to do so. According to the PMI (2017), monitoring and controlling consists of the project processes that track, appraise, and coordinate progress and performance of projects and further ascertain the areas in the project plan where modifications are required. Yin (2010) goes further to include the essence of project monitoring and controlling by adding that it is a cycle that involves measuring project status, comparing the measurements to the plan, analyzing of the nonconformities, and implementing the required appropriate corrective actions. This study adopted project monitoring and control as the system that include planning and measuring functions that facilitate development of project plans and compare planned objectives to the actual project performance.

Due to complexity, projects require continued gathering of information to assess and determine progress towards pre-specified goals. Monitoring and controlling the progress of activities of a project is therefore important to identify the limits that may compromise the project progress, compare the current project situation with the original plan and consequently assist project managers to balance the project activities and put them according to the initial plan. This is required to highlight unintended effects from a project and its activities. To this end, monitoring forms a key part of the project cycle and is a form of good management practice (UNDP, 2009). Other authors opine that in broad terms, monitoring tracks progress and performance for decision-making at various steps in the process of a project (Kyalo *et al.*, 2015). Due to complexity, monitoring and control is essential in CBC projects to realize set goals, mostly using social, economic, and biological indicators.

Monitoring and controlling are not new in conservation space, and there has been myriad approach developed for various objectives. Conservation project managers use monitoring and control activities to guarantee the achievement of the required outcomes in implemented project. According to Guerra *et al.* (2019), conservation project monitoring requires integrated data approaches that comprise of a wide-ranging classification and quantification of social and ecological systems, and resource optimization. Monitoring and control activities are included in conservation project design to promptly make project managers aware of any inconsistencies of activities of a project or probable risks that could lead to

deviation from the baseline or schedule, to lessen any delays to the schedule, which can ultimately cause project failure.

Comprehensive monitoring and control of conservation and local development targets is critical in shaping CBC project design to further the integration of conservation and development. To support this assertion, Kyalo *et al.* (2015) pointed out that monitoring was a necessary component “that must be included in project design”. Furthermore FFI (2014) pointed out that monitoring should be part of any conservation project since it was meant to measure changes in the number or condition of threatened species, track threats and evaluate the success of management actions. Over the years, monitoring and controlling has been advocated for by conservation project practitioners to expedite wise use of conservation budgets, as a response to environmental implications of poor project management and to track progress towards achievement of conservation objectives (Mascia, Pailler, Thieme, Rowe *et al.*, 2014). Considering this, CBC projects in the conservancies must have an aspect of species and habitat monitoring and the means to track the use of resources to ensure conservation objectives are met. In addition, monitoring and control should also focus on the alternative livelihood projects meant to spur local community well-being. The purpose of monitoring and control in CBC project is to inform conservation and local development, therefore the project design should ensure the efficacy of the monitoring systems.

Integrating conservation and development is unique and relatively new, hence the need to gather or generate knowledge for continual improvement to deliver the required results. Milupi *et al.* (2017) highlights the importance of utilizing Ostrom design principles of managing a common resource in CBC initiatives and especially the development of a system, implemented by members of the community for monitoring and controlling utilization behavior. This is fronted as a necessity in ensuring achievement of desired goals. In an earlier publication, Hughes and Flintan (2001) concur that CBC project approach aspired to achieve conservation of biodiversity objectives by using social and economic investment tools. Monitoring and control are therefore required to realize these often-conflicting goals concurrently. To this end, amid already known complexity, the design of CBC projects requires integral elements that can give feedback on the achievement of development and biodiversity objectives.

Establishing baseline standards for both local community development and conservation forms the basis of performance measurement. The theory of change could be used to link CBC project deliverables, outputs, outcomes, and impacts. For instance, FFI (2014) opine

that well-designed project monitoring and controlling can give feedback on whether the population size or condition of one or more species is changing over time and why these changes are taking place. Arguing for rural development, Millstone, Van Zwanenberg and Marshall (2010) point that the viability and sustainability of smallholder enterprises are key to poverty reduction. Furthermore, Sayer, Margules, Boedhihartono, Terry *et al.* (2017) points out that impact metrics are required to gauge progress of CBC projects in achieving manifold societal benefits comprising of conservation and local livelihood benefits. Therefore, monitoring and controlling allows project managers to measure the success of conservation and development actions and provide information that can be used to guide better management in linking these two goals.

Literature paints a grim picture on the role of monitoring and controlling specifically in CBC projects. Horwich and Lyon (2007) decried a deficiency of sufficient monitoring and controlling in conservation projects and argued that the impasse had contributed to absence of lessons learnt about running of CBC projects and the ensuing impacts. The authors further argued that CBC project design ought to be integrative, holistic, and adaptive with a monitoring and controlling component as part of design to address the factors considered necessary for performance. The role of monitoring and controlling in conservation cannot be underestimated since it is the primary vehicle that determines whether biodiversity is being preserved because of project activities that improve local community welfare.

The growing establishment of conservation approach that incorporates economic activities and conservation initiatives is characterized by the aggravation of prior existing conflicts and the appearance of fresh ones around them. Sayer *et al.* (2017) reviewed project reports and integrated conservation and development approaches literature. The authors claim there was dearth of documented studies of long-term effectiveness and opined that, amalgamating conservation and development goals brings complexity, making conventional measures of impact through monitoring redundant. This review fell short of the fact that a well-designed CBC project could overcome this complexity. Biodiversity fares better when the local community most connected to it are supported as the primary stewards. All that matters is the design of the initiatives, a robust monitoring and control could possibly lead to achievement of both conservation and development targets concurrently.

Integrated conservation initiatives are designed based on the assumption that by implementing the projects, conservation of key biological resources and the uplifting of the livelihoods of the neighboring communities will be realized concurrently. This calls

establishment of standards by setting of conservation and development goals based on the established baselines to form the basis monitoring and control. Acebes, Pajares, Galan, and Lopez-Paredes (2014) point project monitoring and control as the comparison baseline with the real project results to ascertain deviations and activate early remedial actions if needed. As such, CBC project design should include progress meetings to review the schedules and baselines. This makes monitoring and controlling central in meeting CBC project conservation and development objectives.

Effective monitoring and controlling will likely contribute to better decision-making based on actual performance facts and therefore enhanced the success of biodiversity conservation and local community development. According to McKinnon, Mascia, Yang, Turner, and Bonham (2015), monitoring and control improves on project design and implementation and therefore it is of high potential for utilization by decision-makers. In addition, Craigie, Barnes, Geldmann and Woodley (2015) point out that conservation managers desired better information that could inform their management decisions. This highlights the criticality of performance measurement of CBC projects to gauge progress and inform on management of conservation and development. Further, Marcia *et al.* (2014) concluded that conservation monitoring and controlling had a complementary role to play in advancing rational conservation guidelines and practices. This is achieved by performance measurement that assesses the progress CBC projects towards the anticipated activity, outputs, and results levels.

There is a possibility of failing to align established standards which are based on the baselines and the project activities. For instance, drawing on semi-structured interview, Wahlen (2015) examined how conservation organizations coordinated monitoring activities among its international, national, and local offices. The ethnographic approach led to findings that showed complications in the translation of wide organizational goals into precise project activities. The results highlighted tensions in execution and limitations in monitoring and controlling practice. The study results underscore the significance of monitoring and control of project activities and results in CBC projects to continually align them with the established goals of linking local development and conservation.

Indicators that link local development and conservation form an important part of CBC project monitoring and control design. To this end, in earlier decades, World Bank, (1998) had pointed out that monitoring and controlling project activities contextually involved two categories of indicators, these are implementation performance indicators (inputs and

outputs) and project impact indicators, the project impacts on biodiversity. The indicators inform on the best way to align the CBC project design for better results and performance. World Bank (1998) is a policy paper that provided a framework for performing M&E in CBC projects and no research was found that had actualized monitoring and controlling as a determinant of performance. Albeit the publication highlights the importance of inputs and outputs indicators for comparison of collected data and the established baselines.

Performance measurement ought to comprise project status meetings meant to obtain status on conservation and development tasks, identify project issues and so forth. This forms the basis of comparison with baselines for corrective action and helps steer the project towards realization of its goals. On this, Millstone *et al.* (2010) argue that monitoring and control should not only focus on effort towards predetermined project milestones, but also barriers inhibiting flow from inputs to the desired outputs. For instance, Kelly and Reid (2020) employed a single case study approach to investigate monitoring in a 12-month rural health project. The case study argues for preference of monitoring and control to evaluation. The results show that monitoring and control provided decision making, timely learning, and improvements in health projects resulting in incremental system and behavior. Though this was a case study whose inference power could be limited, it highlights monitoring and control as significant mechanisms for facilitating learning, project improvement and decision-making.

Monitoring and control system is essential, it ensures that the project status is accurately known, and glitches can be mapped before manifestation of detrimental impact. Kamau and Mohamed (2015) used a review to highlight monitoring and evaluation efficacy in the achievement of project success. The researchers point out that monitoring and control comprised of status reporting, measurement of progress and forecasting. Furthermore, the researchers opine that progress reports could provide project performance evidence based on cost, schedule, resources, scope, quality, and risk, which are inputs to other project processes. These findings, though not empirical, concur with Wysocki (2014) who emphasize on variance reports and PMI (2017) which advocate for variance analysis in reporting the differences between the planned project baselines (in terms of scope, schedule, and cost) and actual achieved project milestones to establish if a change, a remedial action, or a precautionary action is required. This confirms the assertion in this study that the results of monitoring and control activities in CBC projects need to be analyzed and the project adjusted in response to findings.

Away from status reports, the complexity of the implementation topography in CBC projects requires participatory monitoring and control to ensure sustainability of the management decisions. In a study that promotes the harnessing of traditional ecological knowledge of the local community in biodiversity areas, Sheil, Boissiere and Beaudoin (2015) pointed out that autonomous monitoring process in conservation activities were seldom acknowledged and were poorly documented by conservation professionals. Based on this premise, the authors hypothesized that locals maintained noteworthy day-to-day control over local landscapes and resources and monitored them. Using participatory qualitative methods, Sheil *et al.* (2015) found evidence that monitoring and control by local community contributed to effective protection and deterred unregulated exploitation. Local monitoring and control of biodiversity utilization and livelihood initiatives should happen as a general aspect of how the local community lives when external controls are weak or absent.

CBC projects are implemented in complex environments; their design should cater for risk identification and mitigation. WildTeam (2017) opined that identification and dealing with risks was important in all project phases. The PMI (2017) guidebook defines risk identification as the process of establishing risks that may affect a particular project and detailing their characteristics. As uncertain events, project risks may have positive or negative effects CBC project objectives in terms of effect on scope, schedule, cost, and even the quality of the required results. In a case study, Bourne and Walker (2005) pointed out that in case of unplanned outcomes brought about by risks, the solution of choice is usually to impose more or better project control mechanisms. The design of CBC projects ought to include activities to identify risks during project implementation. On this, Marchewka (2010) advised that project risk management once included as a form of project control in the design of information and technology projects provides an early warning system for impending problems that needed resolving and pointed to the common approaches to risk identification. The author opined that such approaches focused on techniques such as nominal group technique, mind mapping, brainstorming and the Delphi technique. This study however aimed at on management of risk and complexity in information and technology projects.

As projects whole environment and goals are complex, project design in conservation must constitute change management, the utilization of monitoring results brought about by the recommended corrective action instituted by the performance measurement. In a study that examined the connection between institutional design and monitoring and evaluation results utilization, Kabure and Basheka (2017) used a mixed method approach comprising of cross-

sectional survey, key informant interviews and documentary analysis. The dimensions of institutional design used; procedural rules ($r = 0.459$), evaluation processes ($r = 0.486$) and evaluation capacity ($r = 0.765$) bore positive and statistically significant ($\text{sig.} = 0.001$) effect on utilization of monitoring evaluation results. These results portray the extent of institutional design as key predictor of evaluation results utilization. These results further affirm the criticality of a project design that utilizes results to improve project implementation.

CBC projects show struggle to validate the impact of their actions due to poor monitoring that is embedded in the project design. While noting that the status of biodiversity continued to deteriorate due to human activity despite conservation efforts, Stephenson (2019) decried to poor monitoring and control in CBC project. The author made use of literature review and personal experience to develop five steps blueprint monitor and control CBC project implementation for conservation impact. The blueprint gives (1) planning that links project objectives to higher-level goals; (2) generation of common that allow aggregation of results; (3) monitoring data collection and protocols that enhance data sharing; (4) interpretation and presentation of monitoring and control data in relevant formats; and (5) action through monitoring results utilization to make adaptive management decisions. These results are however not empirical and the use of personal experience to coin them might be biased.

In similarly complex project management in the construction sector, Ibbs, Wong and Kwak (2001) employed regression analysis to study the impact timing of change on construction labor productivity. The authors drew from 162 construction projects and collected data for cost, labor hour, schedule, and change at 25, 50, 75, 80, 85, 90, 95, and 100 percent of project completion, where possible. The findings indicated that late change was more disruptive of project productivity than early change. The scholars however fell short of recognizing the fact that entrenching project monitoring and control measures in the design ensures that change and corrective actions are timely and less disruptive to the project. Since CBC projects should continually link development and conservation, these results call for agility in these projects and their design must constitute corrective actions at any point as required based on variance analysis to respond to those stimuli in the complex environment and re-invent themselves to realize objectives.

The design of CBC projects has many underlying assumptions, some with the potential of translating into risks. Monitoring and control are the tool of choice in checking whether these assumptions hold. Eshoo, Johnson, Duangdala and Hansel (2018) used quantitative methods

to investigate whether a strategy of law enforcement that included fines on wildlife traders and hunters for flouting conservation rules. The monitoring results indicated that this assumption did not hold and therefore failed to eradicate the threat of trade and illegal hunting. The study further found out that increasing communal and individual economic incentives through ecotourism reduced threats and increased wildlife populations increased. These are the results that lead to informed decisions by managers and improve the chances of performance of the project. These results, while auspicious should be viewed with caution since the study was conducted over a short duration, and the sample was small.

2.7 Stakeholder Engagement and Performance of CBC Projects

Conservation projects are not islands, they are implemented in areas with resident individuals, groups and even institutions that have expectations in in the projects and resultant outcomes. According to PMI (2017), those individuals, groups and even institutions affect and can also get affected by project implementation and are called stakeholders. Projects in community contexts engages those with interest or attention in the project and its results. Stakeholder engagement has been variedly defined and interpreted depending on different circumstances. Cohen and Uphoff (1977) described stakeholder engagement as promoting people participation in design, planning, and execution of development initiatives including the sharing of project benefits. Engaging stakeholders is instrumental in the design of a project and understanding of stakeholders' dynamics is regarded as indispensable in management of projects due to its causative effect on project success.

Involving stakeholders in project design and planning, especially the beneficiaries is key for project sustainability. Ndonge, Mulwa and Kyalo (2021b) opined that stakeholder engagement ensured project support and curtailed the possibility of opposition to the project and its outcomes and significantly improved the chances to realize project success. It is based on this premise that engaging local community stakeholders is heralded as a panacea to CBC projects. Considering this, Reeds (2008) normatively argued that stakeholder engagement in environmental matters was a democratic obligation. Partaking in decision-making in projects may bring about forbearance for wildlife conservation even when determinate threat reductions is absent (Treves, Wallace and White, 2009). Besides the normative arguments, pragmatic benefits for engagement do exist; Reeds (2008) further points out that engagement of stakeholders could improve durability and the value of decisions. The author however cautions that stakeholder engagement claims in environmental matters have seldom been

tested. Ndonye *et al.* (2021b) agree that the characteristic dynamism and heterogeneity of conservation projects necessitates agility and clear management that incorporates a multiplicity of values and knowledges. Thus is the essence of stakeholder engagement in CBC project design.

There exists several types and levels of engagement in community-oriented projects. FAO (2003) outline three engagement types based on the level of community interaction. Type I, induced involvement, where project design, its stratagem, and work plan are established in advance and the beneficiaries are brought in later during implementation to benefit from certain project activities. As a way of sharing project cost, beneficiaries chip in through resource mobilization and labor. Type II; the transitory mobilization where the project beneficiaries are involved in temporary tasks but lacks structured participation to ensure continuity. Lastly, Type III; the group formation level where the project is specifically purposed to build and reinforce existent beneficiary groups. This is done through giving access to resources, allowing input, impetus, and self-proposed activities. In Type III engagement, continuous participation of the local stakeholders is well structured and guaranteed.

The complexity in CBC projects and the environments they are implemented in necessitate a well structures stakeholder engagement. Ndonye *et al.* (2021b) argue that Type III engagement was most appropriate for CBC projects as participation was structured and allowed reinforcing of beneficiary groups based on sustainable livelihood framework, putting the local community at the center stage of conservation and local development. Hart, Burgess, and Hart (2005) concur to these assertions by enlisting general principles that has to be present for a project to be regarded as being participatory. These were, existence of self-controlled and run groups, community right to local resources and power to make decisions, negotiate own affairs for self-development. This further confirms that the group formation level is best suited in CBC projects which link conservation and local community welfare.

Stakeholder theory and scholarly articles identify several doctrines of engaging stakeholders of relevance in the relationship between CBC project design and subsequent performance. For instance, Brooks *et al.* (2013) in a meta-analysis of 136 CBC projects reports that used bivariate analyses found that local participation, when a project is impetus of local community, and the latter's involvement in day-to-day running was an influencing factor. These results highlight local project identification as being key to project performance. The

study concludes that conservation projects can tap into characteristics of the local community as a source of strength to facilitate success. Well-designed CBC projects that emanate from the impetus of the local community have the potency to prevail disadvantages that relate to prevailing local context and national contexts.

Engagement of local stakeholders through participation is a conduit to empowerment. It is assumed that once beneficiaries are granted the chance to partake in the project implementation decisions, it leads to a sense of ownership of outcomes. This is so because engaging stakeholders ensures that the project design reflects the real community needs and priorities. Dawson *et al.* (2021) pointed out that positive outcomes were realized where CBC interventions included engaged community in project decisions. The authors used peer-reviewed literature, targeting quantitative and qualitative publications from multiple disciplines on of human well-being and conservation effectiveness. The results showed that 55.9 percent of the studies indicated that embedding of local institutions in conservation governance led to both goals of positive conservation outcomes and improved community well-being. These results show that CBC project design that cedes participation in and control to local community ensures realization of development and conservation goals.

For social sustainability, project beneficiaries must be involved from the early project design stages. For instance, securing active involvement of beneficiaries in needs assessment of a project to create impetus and involvement in subsequent decisions are indispensable (Ndonye *et al.*, 2021b). Local community active participation in biodiversity conservation and local development needs assessment is important. Aga Noorderhaven and Vallejo (2018) used experimental design to investigate involvement of beneficiaries in project needs assessment. Their findings indicate that involvement of project beneficiaries in needs assessment during project planning stages significantly influenced the sustainability of the project. This gives evidence that community participation in early project design decisions increases project sustainability.

The implementation of conservation and rural development projects like CBC initiatives is inherently complex as multiple stakeholders are to be aligned and satisfied. Participation in CBC projects espouse information sharing, decision making, consultation, and initiating action in the project activities. According to Muhumuza and Balkwill (2013) lack of local participation in conservation initiative decisions leads to wavering support of conservation projects. CBC project design should focus on project sustainability beyond donor funds by instituting community participation. Inclusion in project design and implementation results

to ownership, improving the chances of project continuation even when donor funding ends. Hart *et al.* (2005) and Olukotun (2008) encourage shared ownership of conservation project and its outcomes by all stakeholders. In addition, Brooks *et al.* (2013) advises about the necessity of benefits to be shared equitably and distributed without elite capture. Therefore, participation ought to include all project parties regardless of training, insider and outsider alike are to be recognized.

The reviewed literature above has given rise to six principles of stakeholder engagement. These are local project identification, local conceptualization, local control, shared ownership of the project, equity, and local empowerment. These principles are ideal for making the local community prime in linking conservation and development goals through CBC projects. CBC projects have been critiqued for failing to give priority to local contexts, therefore, it is critical that project design addresses use stakeholder engagement principles to remedy this. Eskerod *et al.* (2015) points to the importance of considering and integrating stakeholder needs and concerns as a pathway to the design of organization goals. Such a design attracts groups' backing, thereby enhancing organization survival chances which here means project performance.

Involvement of local community in CBC projects is not an end by itself, engagement that breeds empowerment by having active voice is. Ndonye *et al.* (2021b) pointed out that local community regard project as promoting its needs if the project integrates community's preferences, views, and voices in the project design. Hart *et al.* (2005) viewed empowerment as a stakeholder engagement principle that strengthened communities by raising awareness and mobilizing resources and abilities. Community empowerment is anchored in the recognition of traditional knowledge systems, like long standing ecological knowledge (Ndonye *et al.*, 2021b). Campbell and Vainio-Mattila (2003) referred to participatory development praxis-theory debate and argued that universal metatruths on biodiversity conservation that was separate or executed separate from people and ecosystem interaction context for which CBC projects were designed was non-existent. This assertion elevates the central role played by community and long-standing knowledge systems engagement.

Integrating traditional ecological knowledge is an essential CBC project design strategy geared towards attaining community commitment and ultimately project sustainability. Cebrian-Piqueras, Filyushkina, Johnson, Lo *et al.* (2020) employed snowball sampling method in a survey of conservation area residents. The authors tested hypothesis using partial least squares path modelling and found that traditional ecological knowledge was

fundamental principle. The results show that the use of traditional ecological knowledge enhanced provision of ecosystem services, landscape sustainability and the resilience of the social and ecological systems. While the methodology used was short of inferential robustness, the study highlights the importance of indigenous knowhow passed through generations in conservation planning. This long-standing knowledge can inform on the modelling of livelihood programs and conservation initiatives.

Moreover, stakeholder engagement is also manifested by participation. Participation is now increasingly being acknowledged as an important component of environmental and natural resources planning processes. Michener (1998) categorized participation into two main approaches, planner-centered benefits approach, and people-centered approach. According to Michener (1998), planner-centered benefits approach targets to achieve benefits for the planner, financial and administrative efficiency. On the other hand, people-centered approach targets to empower project beneficiaries through capacity enhancement, seeking synergy with native potential and elevating local priorities and needs.

Factoring local participation in the design of CBC projects ensures sustenance of conservation projects. Adom (2016) used a qualitative approach and gathering data using focus group interviews and non-participant observations to measure the use of Asante indigenous knowledge systems in conservation projects in Ghana. The results show that indigenous knowledge systems were instrumental in biodiversity conservation through regulation of local community behavior. These results show that harnessing indigenous knowledge through participation beneficiaries leads to sustenance of the project and its outcomes. It can be contended that traditional ecological knowledge transcends time, its utilization in CBC project design is a sustainable solution.

People-centered participation often materializes to empowerment, unlike planner-centered one which is nominal with community being passive beneficiaries. Stakeholder empowerment is instrumental project design from all discourses. For instance, Heravi, Coffey and Trigunaryyah (2015) had a survey composed of 200 construction companies, examining levels of stakeholder engagement in the planning process of projects. Results of the analysis reveal levels of engagement of stakeholder entities in the planning process, therefore establishing a foundation for further participation to guarantee project success. Involving stakeholder increased the prospects of fair and holistic project decisions.

Due to complexity in CBC project implementation environment, engagement should be from the earliest stages of project design. Bouamrane, Spierenburg, Agrawal, Boureima *et al.* (2016) underscored the prominence of engaging stakeholders early in conservation projects in building understanding for realizing sustainability. The authors reviewed lessons learned from biosphere reserve cases. Their results show that conservation area complexity was due to stakeholder diversity, diverse needs, and perceptions on conservation of nature convoluted project execution process, leading to conflicts on objectives of projects in some cases. The authors contend that stakeholder dialogue must commence in early phase of project design and ought to be anchored on ecological and social solidarity. Throughout the project lifecycle, this dialogue ought to be pursued, reinforced, formalized, and contextualized to the project circumstances in order to maintain local community support.

The justification for participation in CBC projects invalidates scientific knowledge in no way. Scientific knowledge is fundamental in conservation and development, but community projects fail to succeed in cases where external expertise fails to blend with indigenous knowledge. Dawson *et al.* (2021) review of 169 peer-reviewed publications on biodiversity governance found that local institutions and stewardship efforts have effectively employed several actions and capacities to conserve biodiversity. Local communities supported by external experts have a critical role in sustainable natural resource management. In conclusion, CBC project partnerships are important in determining whether the conservation model is harmonious with local community culture, nature interactions. Lastly, CBC project objectives and activities ought not to encroach on local community livelihood practices.

2.8 Regulatory Environment and Performance of CBC Projects

Conservation and development practitioners design CBC projects to protect species, landscapes, and ecosystems. Given the severe threat faced by some species and habitats, regulatory environment where CBC projects are implemented become crucial. Considering this, the enforcement of conservation law must be part of conservation design planning. CBC projects are designed and implemented banking on the theory of change that requires the consideration of the causal logic of the intervention and determination necessary conditions that lead to the desired outcomes, the impacts, and ultimately sustainability. In this thesis, apart from project design variables, it is assumed that regulatory environment ranks among the external factors influencing change along the major pathways in the theory of change. This means that regulatory environment is assumed to be a factor that catalyzes one result

for the next to be achieved. As an external contributing factor, regulatory environment is hereby taken as a driver and an assumption.

Wildlife conservation in Kenya is regularized by government laws as stipulated in the Wildlife Conservation and Management Act, 2013 (No. 47 of 2013). The law is applicable to wildlife resources in public, private and community land and mandates the KWS to uphold conservation law to ensure sustainable wildlife management. For CBC projects to perform as required, the aspect of law enforcement to ward off hunters, gatherers and other parties operating clandestinely for personal gain is of paramount importance. The old philosophy of conservation alienated local community from the resources they had depended on for generations, forcing them to result to conservation vices. For instance, Wiafe (2016) points out that demarcation of conservation areas that did not consider the local inhabitants of an ecosystem, therefore compelling many people into the illegal, subversive economy. This study highlights the problems caused by alienation of the local community; however, the study gives no recommendation of the way forward.

There is need to enhance regulatory environment in biodiversity areas. Shereni and Saarinen (2021) pointed out that communities in biodiversity areas faced a myriad of problems, prime among these being livestock depredation spread of diseases and in worst case scenarios loss of life. In places with high external threats, conservation and protected areas experience dramatic habitat and species losses within their borders (Geldmann Barnes, Coad, Craigie, *et al.*, 2013). Further, conservationists understand that poverty alleviation alone is not enough to deter locals from unsustainable exploitation of biodiversity. Kelman (2013) concurred that an important component associated with efficacy of conservation was a focus on governance, especially capacity building, law enforcement and long-standing conservation partnerships networks that are contextually adaptive and specific. The world's major biodiversity coincidentally occurs in the poorest regions where locals seeking opportunities to better livelihoods often resort to increased resource extraction that threaten it. In Kenya, the biodiversity rich areas such as Laikipia, poor pastoralists and subsistence farmers depend on the environment to eke a living. It is therefore tantamount for this research to establish the moderating influence of regulatory environment created by conservation law enforcement on the assumed relationship between CBC project design and the resulting performance.

Though the study area is dominated by the Ilaikipiak a sub-tribe of the greater Maasai, a community known for conservation and good relations with wildlife. African wildlife,

pastoralists and their livestock have synergistically coexisted for the past 2,000 years (Kioko, Kiffner, Ndibalema, Hartnett and Seefeld, 2015). In addition, Fernandez-Llamazares, Western, Galvin, McElwee, and Cabeza (2020) presented long-historical record of the Maasai pastoralists of Amboseli, Kenya. The authors documented the shifting attitudes towards wildlife considering the changing conservation psychology theories. The authors further point that that the Maasai have coexisted with rich wildlife populations due to the community's traditional ecological knowledge of governance and practices of traditional husbandry that combine with aversion to hunting except in extreme events. However, the globalized nature of conservation vices makes conservation law enforcement indispensable for the realization of CBC project goals.

Investing in enabling regulatory environment lowers conservation vices and improves the chances of CBC projects to perform. For instance, unauthorized resource uses such as wood harvesting, poaching of animal deplete habitats and compromise recovery of species. Bernhard *et al.* (2020) used secondary data in performing spatial and regression analyses to gauge how unauthorized resource use affected integrated conservation development projects in a protected area. Using data from more than 35,000 combined observations, the authors found that integrated conservation and development project investments had a statistically significant negative linear effect on unauthorized resource use. Project design therefore must include measures to curtail unauthorized resource use.

Literature has highlighted that importance of conservation law enforcement in conservation areas. For instance, Rao, Johnson, and Bynum (2007) argued that threat assessment to planned conservation targets was an integral part of conservation planning and management. This could be done by identification, evaluation and ranking of the threats for prioritization purposes. The most prominent threats to biodiversity as identified by past research are poaching of large mammals, illegal bush meat hunting, human encroachment, conflicts of humans and wildlife, and loss of corridors for wildlife migration and dispersal areas (Kiringe, Okello and Ekajul, 2007). This highlights the importance of mainstreaming conservation law enforcement in CBC project design due to the threats to biodiversity that result from some of the activities.

The CBC project performance outcomes of ecological changes that include increase in species population and the well-being of the natural habitat are directly impacted by conservation law enforcement. On this, Obour, Asare, Ankomah and Larson (2016) noted poaching as grave threat to wildlife conservation and tourism development efforts. To add

on to that, conservation must deal with human-wildlife conflicts due to competition for resources and loss of migratory corridors, diminishing of animal dispersal areas and drought refugia (Kiringe *et al.*, 2007). These publications do not offer any solution to the poaching and the human-wildlife conflict that ensues in conservation areas. Regulatory environment is therefore a key to saving the dwindling wildlife species populations, including the endangered ones and wildlife habitats.

Policing efforts are known to be important in conservation projects to ensure a sound conservation environment are though not popular. In a comparative study, Abukari and Mwalyosi (2020) used household survey of villages adjacent to protected areas in Tanzania and Ghana. The study findings show that residents who engage in conservation vices considered policing efforts as militating against their rightful livelihood. Law enforcement was found to be more acceptable in Tanzania as policing efforts were perceived to be protecting local livelihoods. These results show the peculiarity of conservation law enforcement and the importance of engaging local community in conservation policing efforts.

Conservation law enforcement especially through patrols informed by local community informant reports is a strategy of many conservation areas and further affords a conducive environment for the implementation of CBC projects. Linkie, Martyr, Harihar, Risdianto, *et al.* (2015) assessed the performance of conservation law enforcement programs in a protected area. The authors set to investigate whether patrols were able to reduce poaching incidents of tigers (*Panthera tigris*) and their ungulate prey base. The study found that informant poaching reports influenced the success ranger patrols; and that the consequential trends in the population of targeted species improved in response to these conservation actions. These results not only demonstrate the efficacy of regulatory framework in protecting wildlife species, but also indicated to the benefits of stakeholder engagement in form of a network of reliable informants.

While many threats to biodiversity conservation can be mitigated using social and economic approaches, species and habitat protection has had to rely on conservation law enforcement due to serious external threats like poaching. Most CBC projects are implemented in ecosystems that have biodiversity uniqueness, like iconic species. There has been rising a level of poaching of iconic wildlife species, particularly African elephants (*Loxodonta Africana*) and the black rhinoceroses (*Diceros bicornis*) in Sub-Saharan Africa, creating a new sense of urgency for nations and conservation bodies around the world (Obuor *et al.*,

2016). Yang, Ford, Tambe and Lemieux (2014) argue that existing anti-poaching mechanisms are insufficient and unique wildlife species continued to be targeted. Working with researchers at Uganda's Queen Elizabeth National Park, Yang *et al.* (2014) introduced an application for a joint deployment effort with the goal of improving wildlife ranger patrols. The authors argue that their model captures the heterogeneity of poachers' decision making processes, incrementally improves the behavioral model of the poacher population with more data, developed a new algorithm that adaptively improves the resource allocation strategy against the learned model of poachers and finally the demonstration of the effectiveness of the application. The research, though improves of the regulatory environment in a protected area fails to recognize the importance of including such a conservation law enforcement tool in project design.

Coupled with fears about extinction of iconic species of wildlife, there is renewed sense of crisis that provides fresh impetus for the consideration of conservation law in the design of CBC initiatives. This is because CBC projects do not exist in a vacuum and the design need to factor components of project or explicit connections to other initiatives, which address peripheral constraints that are well beyond the projects themselves and may thwart the achievement of the intended goals. Project planners therefore need to scrutinize in more detail the effects of these peripheral factors (Newmark and Hough, 2000). Based on this premise, CBC project design should factor modern law enforcement methods that greatly boost the capacity of conservation bodies to address many of the human-wildlife conflicts. Johannesen (2006) advised that conservation law enforcement should emphasize on utilizing guards and patrols, as it increased the rate of detecting threats in wildlife areas. Despite elevation the criticality of regulatory environment, these studies failed to link the latter with conservation and local development success.

Law enforcement is necessary to save biomes in wildlife areas, as conservation will not be possible without well-established and rich habitats. Enforcement of conservation law could positively influence the ecological performance of a CBC project in terms of species and habitat recovery. Enforcing conservation laws is crucial in curbing unsustainable and unlawful exploitation of wildlife populations. In a study evaluating difficulties and correlates of success in rainforest conservation in 16 conservation areas in 11 countries, Struhsaker, Struhsaker and Siex (2004) found that the single most important strategy that ensured ecological success in protected area was improved law enforcement through better technical and financial support. Tranquilli, Abedi-Lartey, Abernethy, Amsini, *et al.* (2014) studied

data collated about 98 protected areas with tropical forest cover from in 15 countries situated in East, Central and West Africa. The method also included accumulated data about local threats to conservation from both unpublished and published literature. Further, the researchers surveyed long-term field workers and assembled linear models for testing the implication of conservation activities relative to the impact level of threats. The results of the study show that the presence of conservation activities like tourism, research and law enforcement were in the long-term associated with lesser threat impact levels. These studies do not directly link the inclusion of law enforcement in project design as a recipe for ecological performance.

As a community develops and population increases, unchecked practices can have damaging consequences on the environment. In a spatiotemporal approach evaluating the effectiveness of enforcement of conservation in protected areas, Geldmann, Joppa and Burgess (2014) developed a map of global change in two-decade pressure exerted by humans between 1990 and 2010. A correlation between temporal human pressure index and cumulative pressure based on the original human footprint index found that pressure on terrestrial conservation areas increased by 64 percent in Southeast Asia. These results by Geldmann *et al.* (2014) are comported by yet another study by Williams *et al.* (2017), which employed technology of satellite imaging to evaluate the outcomes of CBC projects in Kenyan group ranches. The study measured land-use changes on four Kenyan group ranches. The results indicate that CBC projects with tourism lodges (which include conservation law-enforcement function) were more effective at controlling negative human activities than the projects without lodges. This is because conservation areas are under constant threat from illegitimate practices, such as poaching and cattle encroachment which diminish biodiversity (Critchlow, Plumpre, Andira, Nsubuga *et al.* (2016). Therefore, law enforcement could play a critical role in reducing illegal activities, leading to attitudinal and behavioral changes of local communities in wildlife areas.

Research has noted that patrols by law enforcers can eliminate threats that affect conservation in developing countries by having a well-structured patrol team. For instance, using an *in-situ* data from 1,961 protected areas from 149 countries, Schulze, Knights, Coad, Geldmann *et al.* (2018) assessed conservation project managers and local stakeholders. The results indicate most reported vice was hunting, occurring in 61 percent of protected areas, with disturbance caused due to recreation at 55 percent being second. The researchers noted difference in results were in developing countries, resource exploitation was most prevalent

whereas recreation disturbance was prevalent in developed countries. The reason to this could be that in developing countries, local communities around conservation areas that depended on hunting, wood harvesting, livestock farming and ranching.

Improvement of effectiveness of ranger patrols is expected to decrease the occurrence of illegal activity and add advantage to natural resource management. Using data collected by rangers, Critchlow *et al.* (2017) developed a method to improve allocation of ranger patrols. The researchers targeted diverse blends of conservation priorities and predicted that exposures of illegal activities could be enhanced. From a field test in Queen Elizabeth Protected Area, Uganda, the researchers found out that illegal activity detection could be increased to 250 percent in some cases devoid of change in ranger resources. This research showed that cheap method could be utilized in conservation areas where data on illegal activities is gathered and improve law-enforcement efficiency in settings where resources are limited.

In conclusion, wildlife in Kenya belongs to the state; therefore, any initiative to conserve wildlife must factor the state conservation agencies, especially the KWS, which WCM Act 2012 mandates as the custodian of Kenyan wildlife and gives the statutory body powers to offer security for wildlife and visitors in national parks, wildlife conservation areas and sanctuaries. The success formula for any CBC project is the inclusion of law enforcement structures and especially the role KWS in the project design.

2.9 Theoretical Framework

Theoretical framework affords the analytical structure where the researcher should locale arguments, constructs of the research and therefore add clarity (Matula, Kyalo, Mulwa and Gichuhi, 2018). This study employed some theories that linked variables and directed the association between them. According to Wacker (1998), a theory is structured claim about a conventional conduct assumed to preserve during a substantially extensive range of precise instances. The theories used in this study also contributed to connecting the researcher to past studies while providing assumptions guided the study and helped the researcher in choosing appropriate questions for the study. Further, the theoretical framework gives a direction on the research design chosen and the appropriate data collection method to answer the research questions. Along with conceptual framework, theoretical framework guided this study by offering the foundation for establishing its credibility. Three theories guided this study, the Theory of Change, Participatory Development Theory and Stakeholder Theory.

2.9.1 Systems Theory

Management science has over the years heavily borrowed from systems theory for the sake of understanding how projects function. Mele, Pels, and Polese (2010) point to the origin of “Systems Theory” to the work of Von Bertalanffy (1950). The authors argue that a system is “a complex of interacting elements.” This theory introduced “system” as a scientific paradigm that contrasted mechanical and analytical paradigm that characterised classical science. System theory fundamentally focusses on interactions and Meles *et al.* (2010) pointed that a tenet of systems theory is that behaviour of a single autonomous element is different from the same element’s behaviour when it interacts with other elements. Moreover, another principle of the theory is the idiosyncrasy between open, closed, and isolated systems. This is clear in that, open systems are dynamic and allow exchanges of matter, energy, people, and information with the external environment. On the other hand, closed systems on the other hand permit no exchanges of matter nor information but can allow exchange of energy. Lastly, isolated systems do not permit exchange of elements.

Systems thinking is an approach of considering wholes rather than parts, perceiving patterns of change rather than static snapshots, appreciating the delicate interconnectedness that gives systems their precise character (Caldwell, 2012 quoting Senge, 1990). A system is a complex of interacting factors that became open to and interact with surroundings. System thinking is consequently both part-to-whole and whole-to-part thinking about making connections among the diverse factors, so they fit collectively as a whole.

Project management is mostly composed of open system where projects and their performance are influenced by environment. Systems thinking enables project management professionals to think about how project components are constantly altering as each deal with both internal and external variables. It is through systems thinking that project management moves away from concept of linear causality to circular causality, where one item impacts another, then the item impacts the first, or even, alternatively impacts a different item, which then impacts something else and so on, but in the end impacts the first item.

Circular causality in CBC projects is seen in the fact that project design activities target conservation and local development, improving welfare of both wildlife and local communities. Based on circular causality of the systems theory, this in turn leads to CBC project performance manifested as empowerment of local community, attitudinal change to

acceptance of wildlife conservation, regeneration of biodiversity and sustainable resource use. That said, systems thinking in CBC project performance seems to embrace mutual causality, where two things (conservation and development) influence each other. This influence can be either positive or negative for both, or alternatively negative for one and positive for the other. These causes and effects are habitually simultaneous but can be successive.

While advocating for a place of systems thinking in management of projects, Sheffield, Sankaran and Haslett (2012) argue that nothing stayed the same, pointing out contemporary issues of importance like globalization of supply chains, climate change and human rights are affected by many input factors from an assortment of domains (cyclic causality), combining and resulting to indefinite outcomes. It could then be argued that, as system complexity in conservation projects grows, previously separate domains of development and conservation have become interconnected. This has increased the essence of systems thinking in conservation and development discourses. In summary, system thinking in CBC projects articulates the intuition that whole system properties, and project performance were nested on the dynamic interactions between the conservation and development systems, and none can be relegated for the elevation of the other.

2.9.2 Theory of Change

The theory of change describes and elucidates how and why anticipated change is expected to take place in a particular context. Popularized in the 1990s to capture complex initiatives, the theory of change focuses particularly on mapping out and filling in the missing aspects of a project (the activities of the change initiative) and the desired goals. First, initiative goals are identified and then the designers work back to identify all the conditions (outcomes) that must be in place for the goals to occur. Msila and Setlhako (2013) attribute theory of change to Weiss (1995) whereas Stein and Valters (2012) described it as “a theory of how and why an initiative works”. Theory of change is outcome-based and a causal model since it links outcomes to the specific activities necessary, explaining how and why anticipated change is expected to be arrived at. Theory of change suits best in design of complex initiatives with a rigorous plan for project performance.

Within the complex mission of CBC project design, the concept of theory of change system hinges upon defining the entire essential and enough conditions required to result in the lengthy-term period aim of sustainable development. Project designers must use the concept

of change to cascade backwards from this lengthy-term goal to the intermediate goals of conservation and local development after which early-time period changes, viz; ecological, financial, attitudinal, and behavioral changes which can be a precursor of the preferred change. This technique creates a set of connected CBC project results, the pathway of change. A “pathway of change” graphically epitomizes the change process because the project designers apprehend it and is the framework around which the alternative factors of the concept are developed.

CBC projects are designed to generate earnings and non-cash advantages for stakeholders. On accomplishing this, they offer an inducement and ability for stakeholders to change their conduct, consisting of enhancing their control of resources or discontinuing overuse. This way, community participation in the conservation activities and enterprises ties idle labor and consequently reducing threats and enhancing the status of biodiversity, the ecosystems, and species that CBC project is geared to conserve. This idea is represented Figure 1.

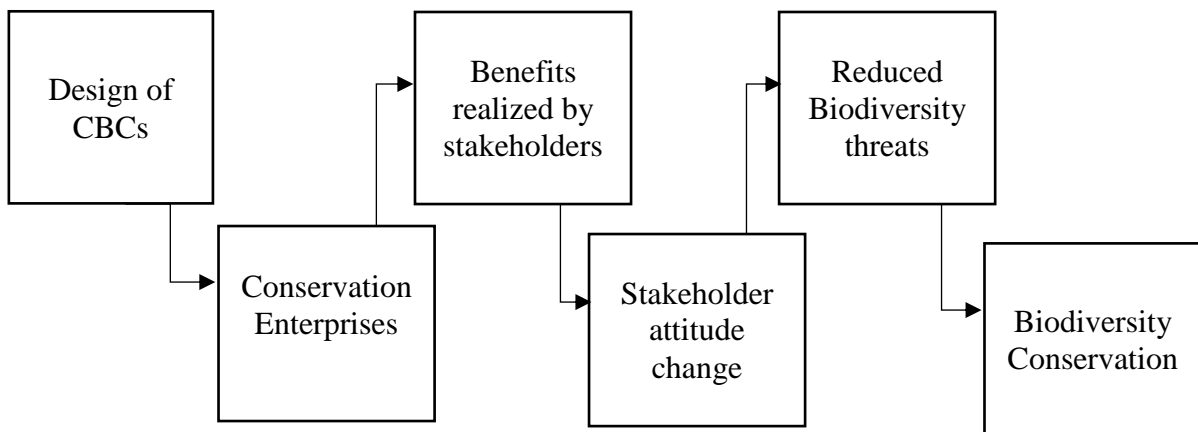


Figure 1: Theory of change
(Adapted from USAID, 2016)

According to Conservation International (2013), the theory of change approach emphasizes on some assumptions that underly the path of change from implementing the chosen project interventions to the intended project outcomes. In these integrated projects, the main assumption is that conservation should provide income and other benefits to the local community thus motivating them to terminate activities that threaten biodiversity. For instance, through conservation enterprises and other services, improved benefits motivate the local community to change attitudes towards conservation and wildlife species. This is unlike other strategies that directly aim at altering resource use management like capacity building for resource management or law enforcement.

2.9.2 Participatory Development Theory

Participation of local community in projects that affect them has gained orthodoxy in development. Literature traces intellectual origins of participatory development to the notion of development conceived and popularized by Mahatma Gandhi in India, decades before India's independence. According to Cornwall (2006), the concept of participatory development gained momentum in late 1960s and 1970s when the global financial establishments and agencies such as the World Bank realized that poverty eradication programs coined in the west flopped in third world countries. Previously, Finsterbusch and Van Wicklin (1987) had pointed out that development initiatives planned by outsiders for any community, no matter the benevolence and intent, was counterproductive. Due to this reality, government, non-governmental and international agencies concluded that the reason behind unsuccessful development initiatives was absence of effective, lasting, and active participation of the envisioned beneficiaries (Van Heck, 2003). This gives a justification of participatory development, a novel remedy to address a range of development problems.

In this study, participation on project management is taken as the extent to which beneficiaries are involved in project initiation, planning and implementation through information sharing, consultation, and decision-making. Precisely, in CBC project design, based on the premise of participatory development theory, focus ought to be on the satisfaction of development needs and conservation of biodiversity with local community at the center. Campbell and Vainio-Mattila (2003) observed that participatory development and CBC projects were like "distant cousins in the intersecting worlds of development assistance and environmental conservation." This notion has seen conservation and development being defined as "opposite sides of the same coin," and based on this premise, development-oriented organizations now integrate conservation rhetoric into policy, just as conservation-oriented organizations are now cognizant of development needs of the local people. This justifies emergence of CBC projects.

Since participatory development is unraveling and boosting human potential, rather than replacing existing systems, beneficiary participation is embraced to give the latter power, as power is known to gravitate to those with solution to problems. Conservation project management embraces public participation to assemble greater resources and achieve more against budget constraints. Project implementation based on participatory development theory is economically efficient by virtue of capitalizing on under-utilized labor. In addition,

such projects take advantage of native knowledge and provide more services for a less cost. To add onto that, another important pragmatic advantage of local community engagement is improved project design. Engagement of beneficiaries guarantees that felt needs are catered for and that the participation shapes the project to local specific needs, something external planners might not get right.

2.9.3 Stakeholder Theory

Stakeholder theory is a normative theory of business ethics and corporate social responsibility. According to Eskerod and Huemann, (2013), stakeholder theory was given the current context in management by Freeman (1984). Ackoff (1974) also recognized the theory where drawing on systems theory, the author advised that stakeholders were elements of a system and that to solve system-wide problems stakeholder participation was required. Environmental problems tend to be complex and dynamic in nature; Reed (2008) opined that these problems required transparent decision-making that was flexible, perhaps that embraces knowledge diversity and values. It is due to this reason that stakeholder theory in conservation decision-making sought and embedded in conservation projects. This had over the time provided the basis for environmental and conservation planning requiring conservation scientists to partner important stakeholders to have diversity of values that result in a range of perspectives. Such stakeholders are project managers, local community who are extractive users and other stakeholder groups.

The establishment of CBC projects based on integration of conservation and development is a new approach of curbing biodiversity loss that is implemented with many public and private actors. According to the Stakeholder Theory, involvement of stakeholders, especially local community should be encouraged to ensure long-term success. The notion here is that conservation cannot implemented in isolation or can they be separated from the setting within which local community interdepend with the ecosystem to be conserved. Local community interaction with the ecosystem and the traditional ecological knowledge emanating from this interaction is central to CBC project design. It is therefore prudent to involve local stakeholders in the design of these integrated conservation and development initiatives. Therefore, design of CBC projects should from the outset involve local communities, integrate indigenous knowledge, and draw on multi-disciplinary stakeholders.

2.10 Conceptual Framework on Relationship between Variables of the Study

This framework illustrates the expectations of the study, and further portrays how the study variables relate to each other. The study determined project design activities' influence on CBC project performance in Kenya with Laikipia conservation region's community owned conservancies as the selected case. It was assumed that the performance of these conservation projects was dependent on four key predictor variables mainstreamed in the project design of these particular projects, namely, scope determination, capacity building of project beneficiaries, project monitoring and control and stakeholder engagement. The joint influence of these project design variables was studied too. The other assumption was that that the relationship between the outcome and the predictor variables was moderated by the regulatory environment in the project jurisdictions, the conservancies. Since conceptual framework should be presented in a graphic diagram (Matula *et al.*, 2018), the above relationships of this study variables are as shown in the Figure 2.

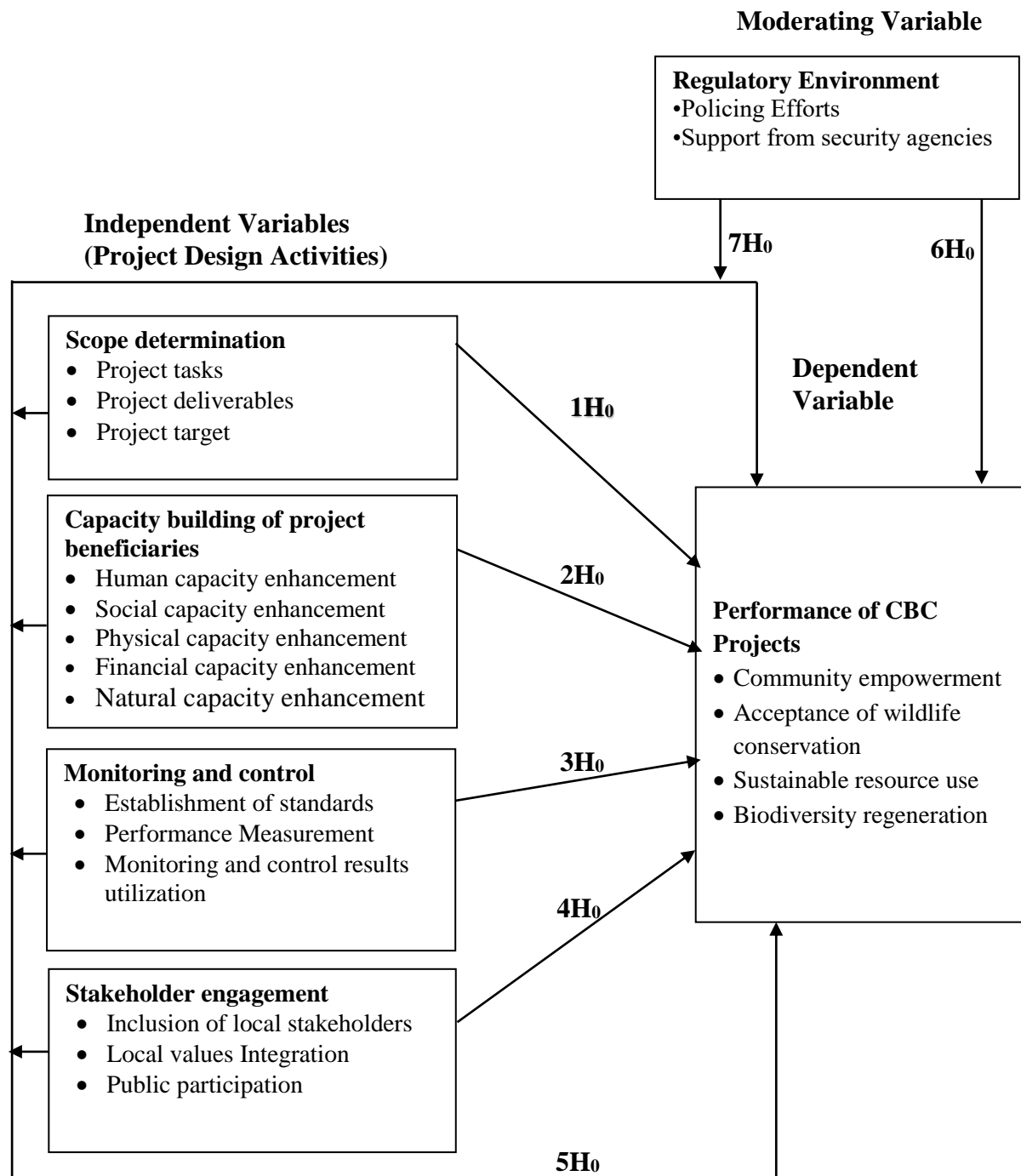


Figure 2: The Relationship between Project Design Activities, Regulatory Environment and Performance of CBC Projects

The conceptual framework in Figure 2 shows the performance of CBC projects in Kenya as the dependent variable of the study. Although the performance of CBC projects was determined by a wide spectrum of factors, this study focused on the project design activities that gave the project its outlook, differentiating the latter from others. In the study, project design aspects of scope determination, capacity building of project beneficiaries, monitoring and control and stakeholder engagement, influenced the final performance of conservation

projects. The performance of CBC projects was manifested through economic changes measured by community empowerment, ecological change measured by biodiversity regeneration of species and habitats, attitudinal changes measured by the acceptance of wildlife conservation and behavioral changes measured by embracing of sustainable resource use in the areas under study. It was assumed that the relationship between the performance of CBC projects and the project design activities was moderated by regulatory framework in the conservation environment by the policing efforts and support from security agencies that ensures the upholding of conservation law.

2.11 Research Gaps

CBC projects are a new epitome in wildlife conservation and community development discourse around the world. Pursuant to this, the performance of ICDP variants especially CBC and CBNRM projects have had a deserving attention from researchers and conservation institutions in the last three decades. However, literature from the scholarly works conducted so far shows no study in existence carried out to determine project design activities' influence on performance of projects. Further, most of the studies are reviews based on published CBC literature and therefore not empirical. To add on to this glaring gap, no study on the influence of performance of these projects in community areas in Sub-Saharan Africa where wildlife and local community live side by side and more so in Kenya was encountered. In addition, there was no study domiciled in areas where poor rural communities depended on the environmental resources for sustenance and hence making the old philosophy of conservation by fines and fences impractical was encountered.

Table 2.1 presents a summary of the identified gaps in research and further the strategies mooted in this study to bridge those gaps.

Table 2.1: Summary of the Knowledge Gaps

Variable	Authors	Focus of the Study	Findings	Knowledge Gaps	Action in this study
Performance of CBC projects	Oldekop <i>et al.</i> (2015)	An assessment of conservation and social outcomes of protected areas	Stakeholder integration achieves socioeconomic, conservation and development outcomes, especially where co-management regimes empower locals economically and socially.	The study is a review of published reports on co-management in conservation and therefore the results cannot be empirically defended	This study empirically examined stakeholder engagement influence on performance of CBC projects
	Ogara <i>et al.</i> (2013)	CBC and ecotourism as an environmental management practice for climate change adaptation	CBCs were appropriate practices for community adaptation to climate change since the projects offered opportunities for livelihood diversification resilient enough to climate change	The study did not examine CBC project performance as a function of project design, but as a means of climate change adaptation strategy	This study empirically studied CBC project performance as a function of project design especially in participatory rural development in localities of wildlife
Scope determination	Banda Jr and Pretorius (2016)	The effect of scope determination on the performance of infrastructure projects	The study demonstrated the correlation between project scope definition level and infrastructure projects success	The study is based on construction project management and highlights scope definition at the initiation stage	This study will determine the extent to which scope determination influences performance in community conservation projects
	Fageha and Aibinu (2014)	Management of Project Scope Definition to enhance outcomes	The paper developed a conceptual framework of an ongoing study that sought to find out whether project scope definition accounted for differences in stakeholders' concerns.	The study develops a conception of project scope that accounts for complexity presented by stakeholders and therefore silent on the essence of scope in project design	This study is empirical and shows the essence of scope determination as part of project design to prevent the risk presented by different stakeholder views

Capacity building of project beneficiaries	Nthiga <i>et al.</i> (2015)	Community tourism livelihoods and biodiversity conservation in Kenya	Capacity building in CBCs through tourism conservation enterprises significantly contributed to local development and biodiversity conservation.	The study focusses on capacity building through tourism conservation enterprises in two group ranches only and ignores the fact that capacity building is an essential part of project design	This study examined capacity building through sustainable livelihood framework in different types of CBC projects and recognizes that capacity building as part of project design
	Koutra and Edwards (2012)	Capacity Building through Socially Responsible Tourism Development	A participatory approach to research indicated that poor progress in poverty reduction programs was because of lack of capacity building. The study proposed four types of capitals: social, human, physical, and financial.	The study focusses on tourism capacity building to eradicate poverty and ignores natural capital and therefore not holistic	This study focused on capacity building as part of project design meant to spur project performance and includes building of natural capital to empower locals
Monitoring and controlling	Rezania <i>et al.</i> (2016)	An exploratory study of monitoring and control in the context of managing projects.	The analysis validated the levers of control framework in the context of managing projects, revealing the interrelatedness of monitoring and control and project performance.	The study focuses on project monitoring and control systems that enhances performance in project organizations	This study examined project monitoring and control as a part of project design and its contribution to conservation projects
	Sheil <i>et al.</i> (2015)	The role of local community in monitoring and control in conservation project management	The research found that monitoring and controlling by local community contributed to effective protection and deterred unregulated exploitation of resources	The authors fail to show how monitoring and controlling as a part of project design contributes to project performance	This study went beyond local monitoring to recognize that monitoring and controlling as part of project design that directly influences performance of conservation projects.
Stakeholder engagement	Heravi <i>et al.</i> (2015)	The study examined the level of stakeholder involvement during the project planning process	Findings demonstrated engagement levels of four stakeholder groups in project planning and further established a basis for further	The study is a content analysis that only highlights stakeholder involvement in projects	This study has empirically showed the connection between project stakeholder engagement and performance.

			stakeholder engagement improvement.		
	Bouamrane, <i>et al.</i> (2016)	A review of lessons learned from case studies in stakeholder engagement and conservation of biodiversity	Complexity due to stakeholder diversity and varying perceptions and needs concerning conservation complicate implementation processes, leading to conflicts about the project objectives	The study only identifies early stakeholder dialogue as the solution to complexity by stakeholders therefore ignoring other project design measures in the stakeholder engagement continuum	This study showed how holistic stakeholder engagement strategies throughout the project cycle influences project performance
Regulatory environment	Schulze <i>et al.</i> (2017)	An assessment of threats to conservation areas	Unsustainable hunting is a problem in developing countries; disturbance from recreational activities is a problem in developed countries.	The study does not point the fact that conservation law enforcement provides the required regulatory framework for conservation	This research showed that regulatory environment is not only necessary for stopping threats, but also a moderator in the relation between project design and project performance
	Linkie <i>et al.</i> (2015)	An evaluation of the effectiveness of conservation law enforcement patrols and local informant networks	The study found that local informant reports on poaching influence ranger patrol success; resultant population trends of target species change in response to these conservation actions	The study links the effectiveness of regulatory environment to local community participation and fails to show how it contributes to the goal of biodiversity conservation	This study not only showed importance of local community participation in regulatory environment aspects but also showed how the later contributes to the goal of conservation as a factor and as a moderator.

2.12 Summary of Literature Review

This chapter has critically reviewed and explored theoretical and empirical literature related to the study variables. The concept of project performance, its relevance and importance in conservation project management was discussed. The literature reviewed performance of CBC projects, which gained prominence due to sustainable development policies and the failure of ‘fines and fences’ approach as the dependent variable. Literature on the performance of CBC projects as an ICDP strategy was explored where four domains of attitudinal, behavioral, ecological, and economic changes were identified as the indicators of CBC the performance expressed as sustainable resource use, local community empowerment, biodiversity regeneration, and acceptance of wildlife conservation.

The independent variable of the study, project design was discussed, and it was established that CBC projects ought to be designed in consideration of where conservation and economic development goals intersect, a design that links these two often conflicting goals. Project design variables of scope determination, capacity building of project beneficiaries, monitoring and control and stakeholder engagement were identified to be the most relevant in CBC project space. Due to the polysemic nature of design in conservation projects and that, conservation in Sub-Saharan Africa is highly reliant on conservation law enforcement; regulatory environment was explored as a moderating variable since it was part of biodiversity conservation in the study area. Lastly, the theories that have given the orientation to the study, namely, theory of change, participatory development theory and stakeholder theory are discussed. The review of past literature was essential in linking the study with other empirical studies.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter designates how the study was conducted to answer the research questions. The chapter sections consist of philosophy that underpinned the study, the research design employed to address the research questions, the population targeted, sample size and the sampling procedure. Towards the end, data collection instruments used, their validity and reliability, the data collection procedure and data analysis techniques are explored.

3.2 Research Paradigm

Pragmatism was the epistemological stance adopted as the conceptual lens through which the study variables were examined and the as the guide to methodological aspects of this study. The importance of a research paradigm had been underscored by Wambugu, Kyalo, Mbi, and Nyonje (2015) who noted its contribution to the direction on inquiry strategies, methods of data collection, analysis, and interpretation. Due to pragmatism's potential to permit mixing of methods, it yields better research insights, affording chance for application of varied theories and/or disciplines. To add onto that, pragmatism suits inquiries of project management due to the complexity involved and the fact that project management has eclectic origins.

The study was outcome-oriented whose interest was to determine relationships of the variables under study. This notion is supported by Creswell and Plano Clark (2011) that the main concern of pragmatism is to find out what works in a particular situation and what enables solutions to problems. In addition, Shannon-Baker (2016) argues that pragmatism emphasizes on "communication and shared meaning-making" therefore creating practical solutions to social problems. The stance of pragmatism rubbishes positivism and instead posits that no concept can fulfill its needs (objectivity, falsifiability, critical test, and so on); and rejects anti-positivism, since in reality, any theory might fulfill them. In step with Parvaiz, Mufti and Wahab (2016), pragmatists believe there ought to be no questions on the legal guidelines of nature and reality and concept of knowledge.

Therefore, recognizing multiple influences that affect the performance of social projects, adding to the subjectivity found in project design, a pragmatism framework was the most appropriate means of inquiry for this study. Further, in project management, as Cameron

and Sankaran (2013) asserted, usage of mixed methods could inspire transition from conventional surveys, interviews, and case studies methods. In project management, there is need for imaginative and innovative approaches of using mixed methods for triangulation and add more in-depth enquiry and a wider standpoint of the complex research problems under investigation.

Pursuant to the pragmatic underpinning, abductive reasoning process was employed in the study, essentially moving back and forth between an inductive and a deductive reasoning process to answer the research questions. Parvaiz *et al.* (2016) defined abduction process as a retroductive process of forming theories or hypotheses that explains facts or unexpected observations. Considering this, abductive approach was followed, and the researcher sought to bring out the best explanation of how project design influences the performance of conservation projects. To explain this complex relationship, this study combined both numerical and cognitive reasoning.

3.2.1 Research Design

A correlational study design was adopted for this study epitomized by non-intervention, the researcher recorded respondent opinions on the subject matter. According to Curtis, Comiskey and Dempsey (2016) is an ideal design for determining the prevalence and relationships existing between variables, and in addition, the design yields data that can be used in forecasting events. Correlation was used in establishing relationship among variables, and regression models for prediction, thus correlational design was ideal. Further, Curtis *et al.* (2016) points out that correlational research findings are good at informing and improving management decisions, which is an important significance of this study. Besides the correlational approach, the study is also cross-sectional in its design. Cross-sectional design was suitable as it takes a cross section of the population to obtain a representative sample. Applying cross-sectional survey in this study intended to collect information from the predetermined population in Laikipia conservation region at one juncture (Fraenkel and Wallen, 2008). As a mixed method, this study was not geared towards exploring a phenomenon by utilizing either quantitative or qualitative approaches since it was not assumed that answers to the identified and developed problem area could be provided by one methodology or even a one philosophical standpoint such as positivism and interpretivism. It was assumed that answers to the research problem could be realized by integrating both quantitative and qualitative approaches.

The pragmatism paradigm anchoring meant that the central reasoning for adoption of mixed methods in this study was that it would place a focus on understanding and explaining the underlying structures and mechanisms. Wambugu *et al.* (2015) point that philosophically, mixed method is the ‘third wave’ of research movement. This study used mixed method approach and therefore not cognizant of the false dichotomy purported to exist between quantitative and qualitative approaches. The position taken in this study was that quantitative methods cannot be termed as necessarily positivist, and neither can qualitative techniques be termed as necessarily hermeneutic. Based on this premise, this study integrated quantitative and qualitative strands. On this, Creswell, and Plano Clark (2011) opined that both approaches had inherent weaknesses and strengths. The researcher opined that combining the quantitative and qualitative methods in the study would strengthen both methods. Based on the above arguments, investigating a complex project management problem would require a pragmatist approach since a dichotomous leaning would not help. Adopting either quantitative or qualitative analysis only deals with the empirical realm and does not penetrate to the real.

The study also employed convergent mixed method approach of the parallel-databases (Creswell and Plano-Clark, 2011). Parallel qualitative and quantitative data collections were independently executed and merged during results interpretation. As used by Feldon and Kafai (2008), the study intended to use these two data types to examine facets of the phenomenon, and the two sets of independent results were then be synthesized and integrated. The convergent mixed method design of the study therefore had two strands. A quantitative strand composed of a cross sectional survey of the members of CBC projects involved in the sustainable livelihood initiatives within community owned conservancies in the Laikipia conservation region and a qualitative strand composed of focused group discussions and document analysis.

3.3 Target Population

The study’s target population comprised of CBC project members engaged in Bee Keeping, Bead Works, Livestock Works, Tourism Works, and Moran Enterprises. These were the CBC projects constituted by the community-owned wildlife conservancies in Laikipia for implementation of alternative livelihood projects. The alternative livelihood projects undertaken by the s were meant to divert sections of the population that would otherwise engage in conservation vices. This study was based in the Laikipia Conservation region

within Laikipia County, which has various community owned and private owned wildlife conservancies and group ranches. Specifically, members in those conservancies that are exclusively community-owned, community managed and registered with or recognized by NRT and the LWF. This was because by their description and formation, these conservancies were the entities that implemented CBC projects.

In a report on the State of Conservancies in 2019, NRT lists the following as the active in Laikipia Conservation Region community conservancies: Naibunga Upper, Naibunga Central, Naibunga Lower, Il Ngwesi and Lekurruki (NRT, 2019). According to LWF 2012-2030 Wildlife Conservation Strategy for Laikipia County, alongside the NRT member conservancies, Makurian and Kuri (LWF, 2012) are the other two community owned conservancies of the Laikipia Conservation Region. The design of these CBC projects was meant to utilize different resources to improve local community livelihoods and concurrently promote wildlife conservation. From the sampled conservancies, the CBC projects in the study area and the memberships are as presented in Table 3.1.

Table 3.1 Target Conservancies and CBC Projects

Conservancy	Number of Projects	Number of Members
1. Naibunga Upper	14	267
2. Naibunga Central	11	124
3. Naibunga Lower	6	103
4. Il Ngwesi	7	47
5. Lekurruki	6	115
6. Kuri	5	72
7. Makurian	4	183
Total	53	911

Source: Conservancy Offices

The respondents targeted 911 individuals involved in Bee Keeping, Bead Works, Livestock Works, Tourism Works, and Moran Enterprises. These individuals were deemed to directly participate in the design of the alternative livelihood projects and the day-to-day activities of these projects.

3.4 Sample Size and Sampling Procedure

To make it possible in inferring the findings to the whole population under study, the research constituted a procedure of picking a representative sample of respondents.

3.4.1 Sample Size

According to High (2000), sample size is taken to be important in generating meaningful outcomes in studies. Determination of the sample size followed Krejcie and Morgan (1970) formula that is found in Appendix S. This formula results to a sample size precise enough to afford accuracy in inferring the findings to the population with certainty. See equation 3.1.

$$S = \frac{X^2NP(1-P)}{d^2(N-1) + X^2P(1-P)} \dots\dots\dots (3.1)$$

Where.

S = intended sample size.

X² = table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size (911).

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (0.05)

Therefore,

$$S = \frac{3.841(911)(.50)(1-.50)}{0.05^2(911-1) + 3.841(.50)(1-.50)} = 270.39$$

There were 270 respondents chosen and according to Krejcie and Morgan's (1970) table sample size determination as seen in Appendix S, if population is 900, a sample size of 269 is adequate to represent the population and so was a sample of 270 for a target population of 911. Further, it was also important for the sample size to be sufficient to afford adequate accuracy to provide sound foundation of judgments on the findings with certainty, becoming a necessity to find out whether this sample size as recommended by Krejcie, and Morgan (1970) was adequate to make inferences.

In a comparison of estimated sample size by Krejcie and Morgan (1970) formula and that of Cohen's (1988) statistical power analysis, Chuan (2006) concluded that sample size estimated by use of Cohen's Statistical Power Analysis was expressive and satisfactory. Based on Cohen's (1988) Statistical Power Analysis, the prerequisite sample size from a population of 500 in performing a correlation test is 85, while a sample size of 116 was sufficient for analysis by multiple regression. Chuan (2006) further opines that a sample

size of 217 for a population of 500, as recommended by Krejcie and Morgan (1970) was large, pointing out that 120 respondents were adequate to answer research questions using correlation and multiple regression. These opinions provided enough prove that 270 respondents for a population of 911 was sufficient for both correlation and multiple regression which were quantitative analysis techniques used.

With the sample size determined, proportionate stratification was done where stratum's sample was made to be proportional to the stratum's population size. See Formula 3.2.

$$n_h = (N_h / N) * n \dots\dots\dots (3.2)$$

Where n_h = sample size for stratum h , N_h = population size for stratum h , N = total population size, and n = sample size.

3.4.2 Sampling Procedure

Due to geographically diverse target population, multistage sampling was adopted to improve the chances of representation thus guaranteeing that every unit of the population had an equivalent chance of being sampled. The multistage sampling entailed sampling based on the tiered structure of the natural clusters occurring in the population. At each respective stage, a different type of cluster was randomly sampled giving rise to nested clusters at the successive stages. Finally, the sampling procedure comprised selecting a random sample of CBC project members in the clusters chosen at the penultimate stage.

First, the respondents for this sample came from the seven identified community conservancies implementing CBC models and recognized by NRT (NRT, 2018) and LWF (LWF, 2012). Since the number of conservancies under consideration was less than 200, according to Watson (2001), rather than a sample, a census was most preferable. Pursuant to this, respondents were from the seven community conservancies under study. Secondly, based on the same premise of the number of projects under consideration being less than 200, the study targeted all the 53 CBC projects in the seven conservancies. Stratified random sampling was the last level of sampling since the target population was assumed to be heterogenous. The stratified random sampling targeted conservancy project members, assuming that the population representation increased the efficiency of the study.

The study used the community conservancies as the strata to sample individuals participating in the CBC projects. To realize proportionate stratum representation, samples were independently calculated using the similar ratio to get akin percentage of respondents

from each stratum as shown in Formula 3.2. In each conservancy, the registers of all CBC projects were obtained and with the recruited research assistants help, the researcher compiled a master list that gave the conservancy master list, then numbers were assigned on it. The next step involved random numbers table that was utilized to handpick respondents from the conservancy master list relevant to each category. By using the table of random numbers, all project participants of the conservancy had an equal chance of being recruited into the sample of the study. The significance of this was that it gave the study the required threshold of utilizing inferential statistics in the data analysis.

Table 3.2: Sampling in the Strata

Strata	Number of Members	Strata Sample
1. Naibunga Upper	267	79
2. Naibunga Central	124	37
3. Naibunga Lower	103	31
4. Il Ngwesi	47	14
5. Lekurruki	115	34
6. Kuri	72	21
7. Makurian	183	54
Total	911	270

Source: The Researcher

3.5 Research Instruments

The pragmatism grounding of the study paved the way for the adoption of a mixed method approach. A quantitative strand of a cross-sectional survey was done on CBC project members. Concurrently, a qualitative strand of a focused group discussion and document analysis were utilized to generate qualitative data for convergence during interpretation and discussion of the results. The researcher thus utilized three data collection tools, namely, questionnaire (Appendix B), a focused discussion guide (Appendix C), and a document analysis guide (Appendix D).

3.5.1 Questionnaire for the CBC Project Members

The quantitative strand of the study comprised of data collection using questionnaires. Questionnaires necessitated collection of lots of information over a short period from respondents. In addition, questionnaires are ideal and objective for collecting information about attitudes, perceptions, beliefs, knowledge, and even behavioral concerns. Saunders, Lewis, and Thornhill (2016) justify the use of questionnaire as a tool of choice since it enables the researcher to study and elucidate how variables are related, cause-and-effect

relations in particular. Further, Kothari (2009) supports use of questionnaires arguing that besides being a tool capable of collecting lots of data, they are simpler to administer, analyze and economical. Questionnaires are also known to be free from researcher's bias. Closed-ended questions were the only ones used in this study's questionnaires.

The instrument had seven sections designed to cover background information and the research variables. Section A comprised six questions that collected data on the CBC project type, personal data such as gender, age, level of education, the respondent project category, and the number years of membership. The rationale of this section was to get the contextual data of the respondents. Section B intended to collect data on the performance of CBC projects based on the already established indicators from the works of Brooks *et al.* (2006a). Section C, D, E, and F solicited for information of the project design variables of scope determination, capacity building of project beneficiaries, monitoring and control and stakeholder engagement respectively as identified from the reviewed literature. Lastly, Section G sought information on the moderating variable of regulatory environment. The set of questions in the questionnaire were intended to gather data about the respondents' opinions and perceptions on the problem under study. Sections B-G comprised of Likert-scale type of questions that enabled the researcher to perform statistical analysis.

3.5.2 Focused Group Discussion Schedule for Conservancy Officials

Focused group discussion schedule was used to collect in-depth information from conservancy officials, specifically chairmen of conservancy boards and conservancy managers. Focused group discussion gave an opportunity to seek clarification as required (Kothari, 2009). This was purposively targeting information rich key informants and aimed at getting data that verified and added meaning to cross-sectional survey data collected using questionnaires. The focused group discussion was deemed to be beneficial as it afforded the researcher a chance to probe and note semantics that improved gathered information. It also gave the researcher an opportunity to voice-record the discussion for reference during the qualitative analysis. This data has been used in triangulating cross-sectional survey results, hence improving validity of the findings. The data collected from the focused group discussion provided richness based on real experiences of those who are involved in the CBC projects, a context that could not have been achieved from the initial survey.

3.5.3 Document Analysis Schedule

Another tool used in the qualitative strand of the study was document analysis schedule. According to Bowen (2009), document analysis is a form of qualitative study approach whereby the researcher deduces information from documents to give a voice and meaning to a research problem. This study considered strategic plans, project documents and reports, wildlife census reports, patrol reports and other documents associated with the community operated conservancies in Laikipia County. Content analysis of the collected documents was performed to gather documented evidence of CBC projects design indicators. Document analysis was an invaluable component in this study for triangulation. A prior developed checklist of material and themes guided data collection (see Appendix D).

Table 3.3 presents the summary of the data collection tools, the respondents and the data that was collected.

Table 3.3: Data Collection Instruments, Respondents and Data Type

Instrument	Respondents	Data
Questionnaire	Members of the CBC projects in the community conservancies	The extent of the Performance of CBC projects. The extent to which Project Design Activities is are factored in CBC projects. The level of Regulatory Environment
Focused Group Discussions	Conservancy Board Chairs Managers of conservancies	Voices on Project Design Activities, Regulatory Environment, and the Performance of CBC projects
Document Analysis	N/A	Published information on Project Design Activities, Regulatory Environment, and the Performance of CBC projects

3.5.4 Piloting of the Research Instruments

To provide valuable insights and increase validity and reliability, the instruments tools were tested on a pilot sample in one of the conservancies to establish whether respondents comprehended the instructions and the questions, and whether the questions had the same meaning to all respondents of the study (Kelley, Clark, Brown and Sitzia, 2003). Ten respondents from Il Ngwesi Conservancy were used to answer the questionnaire. Il Ngwesi was the most established of the conservancies under study and hence a possibility to generate a better data for the test. During a rangeland management training of Il Ngwesi Conservancy Board, mock discussions were held to pilot the focused group discussion guide and the document analysis schedule was used to collect documents in Naibunga Upper

Conservancy offices in Il Polei. Il Ngwesi was one of the conservancies under study, it was assumed that the randomness of the sampling method used in the main study and the size of the sample selected (270 respondents) eliminated the possibility of sample contamination. Thereafter, supervisors were given the pilot study results for evaluation and to rule whether the data generated by the instruments was appropriate. After discussions with the supervisors, the strata approach was changed to reflect the conservancies rather than the CBC projects. In addition, other typesetting issues such as wording, layout and instructions of the instruments were dealt with.

3.5.5 Validity of Research Instruments

This study was cognizant that a key indicator of the quality of instruments used was the validity of the measures. Validity refers to “the correctness and truthfulness” (Christensen, Johnson, and Turner, 2014) or “appropriateness, meaningfulness and usefulness” (Wambugu *et al.*, 2015) of an inference that is made from the results of a research study. Validity is important in research instruments since it is a crucial criterion; it shows the degree to which a data collection tool measures what it is intended to measure (Kothari, 2009). It is not plausible to gauge validity from the data collection tool but only from the data the tool collects, internal validity of the instruments was ensured before data collection. Content validity, the extent of satisfactory coverage of the investigative questions (Wambugu *et al.*, 2015) was ensured by having it verified by conservation project managers and the supervisors. As for construct validity, the degree to which the questions in the data collection tool measure the presence of those constructs it intended to measure, the researcher ensured that all the questions were anchored in the reviewed literature. Further, methodological triangulation helped in ensuring internal validity by enforcing the cross-sectional survey results with those from focused group discussions and the document analysis. Ostlund, Kidd, Wengstrom, and Rowa-Dewar (2010) used mixed methods investigations in healthcare and exemplified triangulation as a methodological metaphor for drawing inferences from quantitative and qualitative results. To this end, this study compared the findings from the quantitative and qualitative strands by looking for the convergence and complementarity of these findings.

3.5.6 Reliability of Research Instruments

This is the extent to which the data collection tool yields the same results over and over (Darr, 2005). Scholars agree that to the fact that reliability cannot be realized without

validity (Patton, 2001) evidence that validity is necessary in establishing reliability. To guarantee reliability, research instruments were piloted to establish whether the questions in them agreed with concepts under study. After piloting, Cronbach's Alpha coefficient which estimates the consistency of responses to multiple Likert-type scales (Gliem and Gliem, 2003), was computed. On this, Tavakol and Dennick (2011) advises that Cronbach's Alpha should be computed for each construct to avert bloating the value of alpha by incorporating many questions. A standardized Cronbach's Alpha is a function of the number of test items and the average inter-correlation among the items as shown in equation 3.3.

$$\alpha = \frac{N\bar{r}}{1+(N-1)\bar{r}} \dots\dots\dots (3.3)$$

Where.

N = represents item number

\bar{r} = represents average inter-item correlation among items

The formula shows that, as items number increases, the value of Cronbach's Alpha increases too. Cronbach Alpha will also be low if average inter-item correlation is low. Theoretically, Cronbach's Alpha is a coefficient of consistency (reliability) and not a statistical test. The coefficient normally ranges between zero and one (0-1). Coefficients that are close to one, mean that there is a greater internal consistency in the scale items. An agreement exists that coefficient values of 0.7 and above are acceptable reliability coefficient (Gliem and Gliem, 2003). For this study, the Reliability Coefficients of the pilot test were as reported in Table 3.4.

Table 3.4: Pilot Test Reliability Coefficients

Variable	Cronbach's Alpha	No. of Items
Performance of CBC Projects	.744	16
Scope Determination	.770	12
Capacity Building of Project Beneficiaries	.917	17
Project Monitoring and Control	.962	11
Stakeholder Engagement	.895	15
Regulatory Environment	.745	10

Table 3.4 shows that the Cronbach's Alpha Coefficients (α) for the study variables varied between 0.744 and 0.962 in the pilot study. Based on existing practice, coefficients $\alpha > 0.7$ are within acceptable limits while $\alpha > 0.8$ are adequate. With all the reliability coefficients being within the acceptance range, the researcher proceeded to the collection of main data.

3.6 Data Collection Procedure

Pursuant to University requirements, a research permit was gotten from National Commission for Science, Technology, and Innovation. Once in the field, two research assistants from the local community with previous experience in conducting conservancy household surveys were recruited and trained to collect data for the cross-sectional survey strand of the study. For effectiveness, the researcher worked closely with the research assistants during the data collection where each of the latter was assigned some specific conservancies from which to collect data. In the concurrent qualitative strand, the researcher purposively sampled five managers from the NRT member conservancies and three chairmen of the Conservancy Boards and held two separate focused group discussions. At the same time, documents that fitted the research criterion in the conservancy offices were reviewed.

3.7 Data Analysis Techniques

Data analysis phases in this study comprised data cleaning, data reduction, differentiation of the collected data and explanation. The data cleaning comprised of coding and tabulation to expose any incongruities in the responses and assigning of special numbers to the responses for analysis. Statistical Package for Social Sciences (SPSS) Version 25.0 was used where cleaned data were entered with counter checking being done to ensure erroneous entries were not done. The SPSS software was then run to generate the required statistics. The analysis was performed observing the rationale that Likert, or ordinal scales comprising of five or more categories can be treated as continuous scales without any harm to the analysis (Sullivan and Artino, 2013).

3.7.1 Quantitative Data Analysis

The study employed both correlational design and cross-sectional approaches. In the quantitative strand, survey data was subjected to quantitative analysis for interpretation and understanding of numerical data produced. Descriptive techniques, specifically means, frequencies, and standard deviations were used to illustrate the variables under study. Data on CBC project performance, scope determination, capacity building of project beneficiaries, monitoring and control, stakeholder engagement and regulatory environment were subjected to descriptive techniques to depict occurrence in the population (Kothari, 2009).

The relationship between predictor and dependent variables was established using Pearson Product Moment Correlation Coefficient (r) to establish the direction and the strength of the relationship between the variables and test the study hypothesis. A coefficient r of 1 is an indication of perfect positive relationship, coefficient r of -1 is an indication of perfect negative relationship and a coefficient r of 0 is an indication that there is no relationship (Kothari and Garg, 2018). In this study, the decision rule regarding relationship strength was according to Field (2013). This meant that an r value of 0.10 - 0.29 was taken as an indication of a weak relationship; an r value of 0.3 - 0.49 was taken as an indication of a moderate relationship, where as an r value of 0.5 – 1.0 was taken as an indication of a strong relationship.

In addition, regression was also used as an inferential technique to model the relationship between the predictor variables (project design activities) and the dependent variable (performance of CBC projects), enabling the researcher to make predictions about the value of the latter based on the scores of the former. Furthermore, regression was conducted between a combination of all the predictors under joint project design activities and the dependent variable to ascertain their joint influence on the latter. To gauge the moderating effect of regulatory environment, stepwise regression was utilized. This was realized by building of three regression models to ascertain the effect of moderation (Zikmund, 2002).

Composite scoring, the principle of quantification of construct calculated by summation of respondent's responses for each Likert item in a variable was utilized in the correlation and regression analyses. The justification for the use of composite scores is provided by Warmbrod (2014) who gave two crucial concepts validating interpreting and reporting of summed scores (composite scores) obtained from Likert scales to enumerate social science constructs. Firstly, the proposition that in Likert scales, the construct under measurement is not expressed by a one statement since a Likert scale is by classification a multiple-item scale. Secondly, resultant scores from a Likert scale are summed scores whose determination is through a merged responses to several statements rather than responses to a single statement.

The test of moderation in this study followed Hayes (2015). In the moderation analysis, the focus was on the effect of the relationship between the predictor variable and the outcome variable. In order to develop a moderation model by testing the stated hypothesis a conceptual model was proposed as shown in Figure 3, where.

X = Project Design Activities (predictor)
Y = Performance of CBC Projects (outcome)
W = Regulatory Environment (moderator)

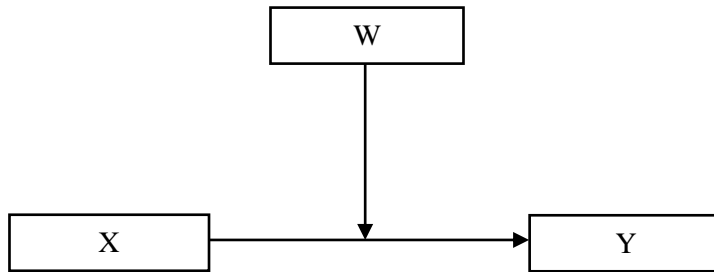


Figure 3: Conceptual Model of Moderation.

3.7.2 Qualitative Data Analysis

For triangulation purposes, qualitative data was also gathered from focused group discussions and secondary sources, specifically text documents. This non-numeric information was analyzed qualitatively using framework-based approach and document analysis.

3.7.2.1 Framework Based Approach

To analyze qualitative data from the focused group discussions, framework-based approach was used. The framework-based approach used in this study comprised five interconnected steps that provided clear guidance to the researcher on data analysis. These stages, as pointed out by Smith and Firth (2011) depict the process from collection of data, its management to the development of illustrative accounts. The stages were familiarization, construction of a thematic framework, the indexing and sorting, summarization of data and display and mapping and interpretation (Hackett and Strickland, 2018). According to Ritchie, Spencer, and O'Connor (2010), these stages enable researchers to label and classify the data and then organize it based on the main concepts, themes, and categories.

Core to this approach was the generation of a 'thematic framework' particularly for this study. Collected data was classified and organized into a thematic framework that were based on the study identified themes, concepts, and categories. This study looked at the collected qualitative data from aprioristic view, based on the indicators of the variables under study and therefore did not adopt an open-minded stance that could allow categories to emerge. Moreira and Costa (2016) argue that aprioristic approach was ideal as it not only

complied with research questions and objectives but was also flexible enough to allow unforeseen categories to emerge.

In the familiarization, following focused group discussions (n=8), field notes were made and at the same time audio recordings of the discussions were transcribed. The researcher then familiarized himself with the contents to obtain a broad overview of participants' responses by reading the transcripts with the field notes and listening to the audio recordings three times. In addition, notes on each transcript were made, writing down the statements and viewpoints of interest and significance based on the variables. The familiarization stage enabled immersion in the data and the researcher deemed it crucial to ensure the themes in the next stage were reinforced by the data.

The second stage in the analysis comprised of constructing a thematic framework. Hackett and Strickland (2018) assert that thematic framework construction helps in organizing the data. The researcher, while remaining conscious of the objectives of this study reviewed the lists and the important topics that emerged in stage one. These topics were written down in a notebook, each topic on its own page, based on their significance to the variable guide and closeness of viewpoints emanating from the discussions. In the third stage, these topics were then coded and indexed thematically based on the study variables (aprioristic) and the effectively generating preliminary thematic framework 'coding index' of themes and sub-themes.

The fourth stage involved summarizing and displaying the data where a Focused Group Discussion Themes Matrix (see Appendix F) for initial themes (the variables) was constructed. The information was recorded in the matrix based on the participants who were managers and chairmen of the conservancies as it was deemed prudent to record each participant information and comments separately. To maintain anonymity, the participants were labelled as Manager 1, Manager 2, Manager 3, Manager 4, Manager 5, Chairman 1, Chairman 2, and Chairman 3. The last stage involved mapping and interpretation that followed completion of the Thematic Matrix (n=8) for each of the themes (variables). Next, another chart that contained main themes (variables) and sub-themes (indicators of variables) was constructed by iterative movement across the transcripts to find and elucidate information and pick out significant and appropriate quotes that were then converged with the results of the cross-sectional survey during interpretation of results. This was the Focused Group Discussion Sub-Themes Matrix (see Appendix G).

3.7.2.2 Document Analysis

Text documents identified were interpreted to give voice and meanings and affirm quantitative strand results alongside those from focused group discussions. In document analysis, O’Leary, (2014), points that there existed three prime kinds of documents, namely, public records, personal documents, and physical evidence. This study used eight public records only (n=8). The documents used were State of Wildlife Conservancies in Kenya Annual Reports (4) Strategic Plans (3) and Group ranch report (1). According to Frey (2018), document analysis is conducted just like other qualitative analysis methods, it features same procedures such as repetitive reviews, examination, and data interpretation to get the meaning and empirical knowledge of the construct under study. Bowen (2009) points out that document analysis includes coding the content into themes akin to how interview and focus group transcripts are analyzed. The researcher adopted the same five stages used in the Framework Based Approach of the Focused Group Discussion analysis and an aprioristic approach by using the same categories. This was necessitated by the need to respond to the research questions and to ease convergence of the three streams of data. The document analysis thematic and sub-thematic matrices were as shown in Appendices H and I.

3.7.8 Hypothesis Testing

Hypothesis was tested using two tailed Pearson Product Moment Correlation. The test intended to gauge magnitude and significance levels of the relationship between project design activities and the performance of CBC projects. The two-tailed test was also convenient given that the predictor variable influence on the dependent variable could either be positive or even negative. This being a social science research, 95% confidence interval (p-value =0.05) was used as a yardstick to decide statistical significance of the correlation. Pursuant to this, a p-value ≤ 0.05 was an indication of the correlation being statistically significant and a p-value > 0.05 was an indication of the correlation being not statistically significant (Bryman, 2008).

Table 3.5: Testing Hypothesis

Objective	Hypotheses	Point of Rejection
To determine the extent to which scope determination influences performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between scope determination and performance of community-based conservation projects in Laikipia region.	Reject H₀ if p-value is < 0.05 Fail to reject H₀ if p-value is > 0.05
To assess the extent to which capacity building of project beneficiaries influence performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between capacity building of project beneficiaries and performance of community-based conservation projects in Laikipia region.	Reject H₀ if p-value is < 0.05 Fail to reject H₀ if p-value is > 0.05
To establish how monitoring and control influences performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between monitoring and control and performance of community-based conservation projects in Laikipia region.	Reject H₀ if p-value is < 0.05 Fail to reject H₀ if p-value is > 0.05
To examine how stakeholder engagement influences performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between stakeholder engagement and performance of community-based conservation projects in Laikipia region.	Reject H₀ if p-value is < 0.05 Fail to reject H₀ if p-value is > 0.05
To establish the extent to which joint project design activities influence performance of community-based conservation projects in Laikipia region.	H₀: There is a significant relationship between joint project design activities and performance of community-based conservation projects in Laikipia region.	Reject H₀ if p-value is < 0.05 Fail to reject H₀ if p-value is > 0.05
To determine how regulatory environment influences performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between regulatory environment and performance of community-based conservation projects in Laikipia region.	Reject H₀ if p-value is < 0.05 Fail to reject H₀ if p-value is > 0.05
To establish the extent to which regulatory environment moderates the relationship between project design activities and performance of community-based conservation projects in Laikipia region.	H₀: Regulatory environment has no significant moderating influence on the relationship between project design activities and performance of community-based conservation projects in Laikipia region.	Reject H₀ if p-value is < 0.05 Fail to reject H₀ if p-value is > 0.05

3.8 Limitations of the Study

Conducting this study was confronted by several design and methodological characteristics that might have impacted findings and their interpretation. For instance, there were different opinions on the concepts project design and performance of CBC projects in the target population. To mitigate this, both in the questionnaire and the focused group discussion guide, these concepts were broken down into comprehensible aspects that the respondents dealt with in day-to-day project work. Furthermore, it was assumed that the responses from

the target population were factual. The study also employed a cross-sectional research design, with the respondents participating in the study only once and at a particular time.

The target population was heterogeneous and response to the study variables had variances, outliers and in some cases extreme scores. Since this study was grounded on pragmatism, an effort was made to establish social structures behind the extreme scores of the variables under measurement. Such variation was reduced by triangulation achieved due to the qualitative data collected by use focused group interviews and document analysis to gain insight into the matters at hand.

3.9 Delimitations of the Study

This study was confined to project design activities influence on performance of community-based conservation projects and not the entire project lifecycle since the aim of the study was to focus on project design. It focused only on the “what” of project design, specifically key features, structures, and the criteria for success part of the project design.

A project is not an end by itself, but a means to an end, this makes it sensible to establish if a project is successful, notwithstanding if its end. The overall performance of a project might be decided from the angle of the approach, that is, the project itself; or the end, as an example, what it was meant or anticipated to perform based on the interests of the stakeholders. CBC projects ought to attain the purpose of conservation of biodiversity and concurrently improve community welfare by spurring local development. Consequently, this study focused on that end, the achievement of concurrent goals of conserving biodiversity and improving of local community welfare.

There are many variables of CBC project design that exist in the literature. Due to scope of this study, these variables were categorized in to the four variables as defined in the conceptual framework and the respective indicators for the same variables. Further, there are many other published and known frameworks of project design, this study was not based on any project design framework, however, important elements in these frameworks were employed to formulate and customize a framework for guiding the research.

Lastly, CBC gives prominence to local input, a bottom-up approach that exclusively banks on the self-organization of resident resource users (Galvin *et al.*, 2018). Based on this and the fact there are many conservancies in Laikipia conservation region, this study sampled the conservancies fitting Galvin *et al.* (2018) definition, therefore targeting only community

owned conservancies and excluding privately owned conservancies.

3.10 Ethical Considerations

While conducting this study, attention was accorded to ethics as encouraged by standard practice. Matula, *et al.* (2018) point out that ethical issues in studies are evident from choosing topic of a study to utilization of the realized findings. It was ensured that research ethics were attended to by obtaining respondents' voluntary consent. Wambugu *et al.* (2015) emphasized that participants need to agree to participate in the research through informed consent. CBC project officials were called in advance; the latter in turn informed the members who had been picked out as respondents in the sample. On actual visit to the participants in the sample, efforts were made by the researcher and the research assistants to brief them on the rationale of the research and the fact that the data that was gathered was meant to be for academic purposes only.

Further, the researcher upheld anonymity of the respondents to guarantee their confidentiality and privacy. The data collection instrument did not require respondents to write their names, and respondent's personal identity was not divulged anywhere in the process of this study. Furthermore, during the data collection, the ultimate caution was taken to respect respondent's human dignity. Diversity of respondents was key and all segments of the local community in the conservancies and those who wished to partake in the study were accorded that opportunity through random sampling. Finally, the findings of the study were only used for scholarly purpose without diversion and were not shared with any other person or institution.

3.10 Operationalization of Variables

The objectives, the variables, the indicators for each variable of the study, the measurement scale and the analysis performed while conducting this study were as presented in Table 3.6.

Table 3.6: Operationalization of Variables

Variable	Indicators	Scale	Analysis Techniques	Tool of Analysis
Performance of CBC projects	Community empowerment Acceptance of wildlife conservation Sustainable resource use Biodiversity Regeneration	Interval	Parametric	Descriptive Analysis
Project Scope Determination	Projects tasks Project deliverables Project targets	Interval	Parametric	Descriptive Analysis Correlation Analysis Regression Analysis
Capacity Building of project Beneficiaries	Human capacity enhancement Social capacity enhancement Physical capacity enhancement Financial capacity enhancement Natural capacity enhancement	Interval	Parametric	Descriptive Analysis Correlation Analysis Regression Analysis
Monitoring and Control	Establishment of standards Performance Measurement Monitoring and control results utilization	Interval	Parametric	Descriptive Analysis Correlation Analysis Regression Analysis
Project Stakeholder Engagement	Inclusion of local stakeholders Local values Integration Public Participation	Interval	Parametric	Descriptive Analysis Correlation Analysis Regression Analysis
Regulatory Environment	Policing Efforts Support from security agencies	Interval	Parametric	Descriptive Analysis Correlation Analysis Regression Analysis Stepwise Regression Analysis

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter contains the research findings as outlined and described in chapter three (methodology) and gives interpretations and discussion of the findings. In this chapter, the study's response rate, the respondents' background information, testing of the study assumptions to gauge suitability for parametric tests and elaboration of the Likert Scale used in the questionnaire as an interval measure are given first in that order. Following this is the analysis of each variable arranged according to research objectives to enable a logical flow. The analysis sections cover descriptive analysis, correlation, research hypothesis testing and then lastly the inferential analysis that models and predicts the relationship between the predictor and outcome variables. The results from the qualitative strand of the study are then integrated at the interpretation and discussions of each study variable.

4.2 Questionnaire Return Rate

This study had a sample size of 270 and the same number of questionnaires were distributed to members of CBC projects in the community owned conservancies in Laikipia region. A total of 252 questionnaires were returned, an effectiveness attributed to the local research assistants. Out of the 252 questionnaires, 14 were badly filled, therefore, 238 questionnaires were valid for analysis, a response rate of 88.1 percent that was considered satisfactory for this type of study. Scholars hold the opinion at least a 60 percent response rate is sufficient for analysis in social sciences (Richardson, 2005) but it could go lower in different contexts. Two focused group interviews were conducted targeting eight key informants (5 conservancy managers and 3 chairmen of conservancy boards) guided by a focused group discussion guide to enrich and triangulate the cross-sectional survey results.

This mixed method study also included analysis of documents to gather secondary data. Documents from the two organizations that coordinated alternative livelihood projects in the conservancies, the NRT and the LWF were targeted. From these organizations, and conservancy offices; strategic plans, community livelihood project reports and general state of conservancies' reports were obtained. There were no documents showing a detailed M&E plans, Benefit Sharing Agreements and Financial Reports. Patrol Reports and Conservation Agreements were confidential and the information in them was relayed in the focused group

discussions. Eight documents that comprised of; four annual state of conservancies' reports, three conservancy strategic plans and one group ranch progress report were reviewed.

4.3 Background of the Respondents

Background of the respondents' section was meant to profile the context that could affect the opinions and perceptions. The information gathered included respondent age, gender, the education level, the length of membership in the project and the position held. This was intended to establish whether the sample had a normal distribution and avoid bias in the study.

4.3.1 Respondent CBC Project Affiliation

The researcher established respondents' affiliation to the several available CBC projects. Table 4.1 shows gives the tabulation of the findings.

Table 4.1: Respondent CBC Project Affiliation

Project Category	Frequency	Percentage
Livestock Works	20	8.4
Tourism Works	8	3.4
Bead Works	54	22.7
Moran Enterprises	16	6.7
Bee Keeping	33	13.9
More than One Project	107	45.0
Total	238	100.0

According to the findings tabulated in presented in Table 4.1, a greater number of the respondents, 45.0 percent were members of more than one project. Those who were exclusively members one project were as follows: Bead Works (22.7%), Bee keeping (13.9%), Livestock Works (8.4%) Moran Enterprises (6.7%) and Tourism Works (3.4%). Being in more than one project was popular, probably because each alternative livelihood project generated income and therefore being a member of more than one CBC project increased the chances of more benefits to the members.

4.3.2 Distribution of Respondents by Gender

The cross-sectional survey tool gathered demographic data on the respondent gender. The distribution by gender findings is presented in Table 4.2.

Table 4.2: Gender distribution of the Respondents

Gender	Frequency	Percentage
Male	129	54.2
Female	109	45.8
Total	238	100.0

The findings tabulated in Table 4.2 show that males comprised 54.2 percent of the respondents, while respondents from the female gender were 45.8 percent. Although the male gender was above, these findings show the conservation projects designers were cognizant of the importance of inclusivity in community projects. In addition, in most communities in rural Kenya, women are the foremost users of natural resources, involving them in management of natural resources as an important stakeholder group is highly encouraged as per the 2010 Constitution of Kenya and Affirmative Action.

4.3.3 Distribution of the Respondents by Age

Given the differences in experiences of different age groups, this study gathered information on the age of the respondents as it was deemed critical as age was assumed to not only affect opinions and perceptions, but also formed a basis of scope determination in terms of conservation and development tasks and targets. Seven categories of age were given, and Table 4.3 displays the resulting findings.

Table 4.3: Distribution of Respondents by Age

Age bracket	Frequency	Percentage
Below 26 years	34	14.3
26-30 years	41	17.2
31-35 years	69	29.0
36-40 years	21	8.8
41-45 years	52	21.8
46-50 years	5	2.1
51 and above years	16	6.7
Total	238	100.0

Table 4.3 shows that majority of the respondents were 31-35 years (29.0%) with 41-45 years age bracket coming in second (21.8%). Respondents of the age bracket 26-30 years (17.2%) were third with the fourth position going to those below 26 years of age (14.3%), 8.8 percent were between 36-40 years, those above 51 years were 6.7 percent and lastly 2.1 percent were aged between 46 and 50 years. The findings denote that majority of the CBC project members were of the age of 45 years and below. These are the ages when heads of

households utilize environmental resources the most to support education and subsistence of their families. This shows that the alternative livelihood programs target the section of the population with the highest chances of committing conservation vices. According to Johannesen (2006), CBC project scope ought to target those sections of the population deemed to be a threat to biodiversity and provide them with alternative livelihoods.

4.3.4 Distribution of the Respondents According to Education Level

The questionnaire required respondents of the study to reveal their respective education level. It was assumed as Johannesen (2006) posited, alternative livelihood projects in the conservancies targeted population sections that might to a larger degree, rely on natural resources for sustenance. Table 4.4 displays the distribution of the respondents according to education level.

Table 4.4: Distribution of Respondents According to Education Level

Level of Education	Frequency	Percentage
Other	120	50.4
Secondary	75	31.5
Certificate	28	11.8
Diploma	10	4.2
Bachelor's Degree	5	2.1
Master's Degree	0	0
PhD	0	0
Total	238	100.0

The results presented in Table 4.4 point to the fact that half of the respondents (50.4%), were either of primary school level or had not attended school at all, 31.5 percent were of secondary school level, 11.8 percent were of certificate level of education, 4.2 percent were of diploma level, and 2.1 percent were of bachelor's degree level. None of the respondents were of either master's degree or PhD education level. These findings imply that majority of CBC project members in community conservancies in Kenya are either illiterate or are of basic education level. It was important to explore the level of education as since community members of higher education levels were expected to be tied up in career jobs. Those with lower education levels will usually have no career jobs, making them the heavy users of the natural resources as a source of sustenance.

4.3.5 Distribution of the Respondents Based on Position Held in the Project

The respondents were required to reveal the position they held in the CBC project organization structure. The responses are shown in Table 4.5.

Table 4.5: Distribution of Respondents Based on Position Held in the Project

Position Held	Frequency	Percentage
Member	189	79.4
Treasurer	15	6.3
Secretary	19	8.0
Chairman	15	6.3
Total	238	100.0

The findings presented in Table 4.5 indicate that 79.4 percent of the respondents were ordinary members, 6.3 percent treasurers, 8.0 percent were secretaries and 6.3 percent held chairmanship positions in the projects. The presented findings also show that the respondents were not normally distributed to various positions in the projects. This is expected since the projects have only three officials, the chairman, the secretary and the treasurer and members therefore form the biggest chunk of the CBC projects. In addition, too many officials in the sample could usher bias, it was assumed ordinary members were better placed to give a rational opinion.

4.3.6 Distribution of the Respondents by Years of Project Membership

The survey tool required respondents to specify the duration they had been members of their respective project organizations in years. The responses on duration of project membership were as displayed in Table 4.6.

Table 4.6: Years of Project Membership

Statistics		
N	Valid	238
	Missing	0
Mean		3.02
Mode		3

According to the results displayed in Table 4.6, the mean duration (in years) that the respondents had been active in the projects was 3.02 years, while the mode was 3 years. This means that greater number of the respondents had been active members for more than two years and were therefore able to give valid answers on the workings of the projects in terms of the design of the projects.

4.4 Testing of the Assumptions of the Study

Parametric tests were conducted in this study; hence the researcher assumed some certain characteristic about the collected data. The researcher was cognizant that violation of the assumptions would affect the conclusion and the interpretation of the results. Therefore, in this study, the researcher conducted reliability test, multicollinearity diagnostics, test for normality and linearity test to check whether the data collected data upheld these assumptions.

4.4.1 Reliability Test

To test for reliability, Cronbach's Alpha Coefficient (α) was employed to determine internal consistency, that is, how closely associated the Likert statements were as a group. This was due to the convenience afforded by Cronbach's Alpha coefficient in estimating the internal consistency of a composite score. The coefficient was used since the questionnaire had numerous items measuring the same underlying construct. Table 4.7 displays the results of the reliability test.

Table 4.7: Reliability Coefficients

Variable	Cronbach's Alpha	Number of Items in the Scale
Performance of CBC Projects	.799	16
Scope Determination	.808	12
Capacity Building of Project Beneficiaries	.845	17
Monitoring and Control	.748	11
Stakeholder Engagement	.797	15
Regulatory Environment	.779	10

Table 4.7 results reveal the study's Cronbach's Alpha Coefficients varied between 0.748 and 0.845. According to common practice in research, coefficients that are greater than $\alpha > 0.7$ can be accepted while $\alpha > 0.8$ are deemed as satisfactory.

4.4.2 Multicollinearity Diagnosis

For the regression model to be valid, multicollinearity, which transpires when predictor variables in a model correlate with one another had to be tested first. Such correlation is problematic because independent variables should remain independent. A high degree of correlation among predictor variables can cause problems in fitting the model. The effect of multicollinearity is that reduces the accuracy of the estimate coefficients, therefore

weakening the statistical power of the regression model. Multicollinearity diagnosis test was run in SPSS Version 25 to obtain Variance Inflation Factors (VIF) for the predictors to ensure that the real effect that the predictor variables had on the dependent variable was gauged. Tolerance and VIF are usually the two values given in the models and are coefficients based on the R-squared value obtained by regressing a predictor variable on all the other predictor variables in the model. Tolerance designates the level of variability of the specified predictor variable that could not be explained by the other predictor variables in the model. Very small values of Tolerance (less than 0.10), point to the existence of extreme multiple correlation between the predictor variables and therefore likelihood of multicollinearity.

The values of Tolerance in the model of this study ranged from 0.507 to 0.883, therefore indicating absence of multicollinearity. Tolerance value is the reciprocal of VIF, and multicollinearity is potentially present when VIF is greater than 4; and, definitely a problem with VIF of more than 10. VIF values in the model of this study varied from 1.132 to 1.973, further confirming absence of multicollinearity in the variables. The VIF values for predictor variables are comprehensively displayed in Appendix J.

4.4.3 Normality Test

The parametric tests employed in this research were done under the assumption that the collected data was normally distributed and from a normal population. Thode (2002) cautioned that where these assumptions fail to hold, conclusions derived from such data cannot be presumed to be reliable and accurate. It is also important to note that for large samples, it is prudent to conduct normality tests to accord credibility to the test of the research hypothesis. Pursuant to this, normality test, that matches scores from the sample to a normally distributed set of scores having similar mean and standard deviation was performed.

To test normality, Shapiro-Wilk W test was adopted. According to Peat and Barton (2005), Shapiro-Wilk W is a coefficient anchored on the correlation amongst the sample scores and similar normal scores and is known to have better power in detecting whether the sample scores emanate from a normal distribution. Shapiro-Wilk W test is normally positive statistic and less than or equal to one and the closer to one the statistic is, the higher the correlation between the sample scores and the normal scores, an indication of normality. When W statistic = 1, then that means the sample variable scores are perfectly normal, and

this is rare in a natural setting. Shapiro-Wilk W coefficient being significantly smaller than 1, is an indication that the sample scores are not normal (Ghasemi & Zahediasl, 2012). In addition, the devoid null hypothesis for Shapiro-Wilk W test is that the sample scores are normally distributed and significance values greater than the chosen alpha ($p=0.05$) mean that the hypothesis is not rejected. Since SPSS software tests and gives results for both Shapiro Wilk W and Kolmogorov-Smirnov. Recommendations are that for tests of smaller samples of $n = 3$ to 2000, Shapiro Wilk W test is used, for larger samples that are more than 2000, Kolmogorov-Smirnov is used. This study's sample was $n = 238$, this made Shapiro Wilk W test the most convenient.

Table 4.8 gives the results of Shapiro Wilk W test after running SPSS tests of the predictor and dependent variable.

Table 4.8: Tests of Normality

Variable	Shapiro-Wilk		
	Statistic	df	Sig.
Performance of CBC Projects	.991	237	.180
Scope Determination	.982	237	.104
Capacity Building of Project Beneficiaries	.972	237	.070
Monitoring and Control	.976	237	.092
Stakeholder Engagement	.991	237	.066
Regulatory Environment	.968	237	.056

The results show that W statistics ranged between .968 and .991. There were no variables whose W statistic =1; meaning there was no perfect normal distribution, however, with W scores being significantly close to 1, this was considered acceptable. Furthermore, the rule of the thumb dictates that for significant values of the Shapiro-Wilk Test greater alpha ($p=0.05$), the data is deemed to be normal, and if the significant value is below 0.05, then the data is deemed to be significantly deviating from a normal distribution. The significance values in Table 4.8 ranged from .056 to .180, an indication that the data in the variables were normally distributed.

4.4.4 Linearity Test

Correlation and linear regression were used in the study, and it was of paramount importance to perform a linearity test to check for outliers since these parametric tests are sensitive to outlier effects. The linearity test was realized using scatter plots to manifest the relationship amongst the study variables. As the dependent variable, performance of CBC projects was used to test association with the predictor variables which comprised, scope determination,

capacity building of project beneficiaries, monitoring and control and stakeholder engagement. The tests manifested the existence of linear association amid these variables, therefore validating the use of parametric tests of correlation and linear regression. Appendix K contains the Linearity Tests of this study variables.

4.5 Likert Scale as an Interval Measure

The Likert Scale is extensively used in social science studies and is commonly constructed with four to seven points. Though an ordinal data, Likert Scale is increasingly being accepted as an interval scale. In agreement that Likert Scale data were ordinal, and parametric statistics could not be used, Norman (2010) dissected these arguments and pointed out that many studies that dated back as far as 1930s had consistently showed that parametric statistics were robust enough to withstand these violations of assumptions. Carifio and Perla (2008) argue that it is plausible to do a summation of Likert Scale items and perform parametric analysis on the resulting summations, not only univariate, but also multivariate. The Likert questions had been crafted as a sequence of questions to collectively determine a certain characteristic by computing a composite mean from the Likert-type items. Jr and Boone (2012) argue that composite scores for Likert scales are supposed to be analyzed at the interval measurement scale. Based on these arguments, it was assumed that parametric tests were satisfactorily robust enough to give impartial answers that are closer to “the truth” on analysis of Likert Scale responses.

The analysis therefore utilized composite scores and the judgment rule in the analysis of mean scores was based on the logical equal levels of the score approximated to the first decimal point in line with equidistance arguments (Lantz, 2013). This research used one verbal anchor; 1 = Not at all (NA); 2 = To a little extent (LE); 3 = To a moderate extent (ME); 4 = To a great extent (GE); 5 = To a very great extent (VGE). The judgment rule in this study followed these arguments; Not at All was for the values that lied between $1 < NA > 1.8$; To a little extent for values between $1.8 < LE > 2.6$; To a moderate extent for values between $2.6 < ME > 3.4$; To a great extent for values between $3.4 < GE > 4.2$; To a very great extent for values between $4.2 < VGE > 5.0$. The scale was created based on Lantz (2013) therefore had an equidistance of 0.8.

4.6 Analysis of the Performance of CBC Projects

This study established the CBC project performance in community conservancies in Kenya, specifically targeting Laikipia conservation region. The indicators included, community empowerment, behavioural change to sustainable resource use, acceptance of wildlife conservation, and ecological change in terms of biodiversity regeneration. Community empowerment is crucial indicator of conservation success and community transformation. For CBC projects to be deemed as performing, local community attitude changes to accept conservation is important to reduce threats to natural resources. Natural resources are known to regenerate in a dynamic ecological process, which cannot take place with disturbance by unsustainable subsistence exploitation and commercial harvesting activities. The research sought to find out behavioural change towards adoption of resource use that promotes sustainable development in the conservancies.

Biodiversity conservation and community development link in CBC projects design is that, once local community benefits from enterprises that depend on local natural habitats, the community takes action to protect and sustainably utilize the natural resources. Lastly, the researcher sought to gauge ecological change as manifested through restoration success for biodiversity and vegetation structure in the community conservancies. The key aim of CBC projects is to succour local communities in preserving and managing wildlife resources for sustainable development. This makes sustainable resource use and protection of habitats for biodiversity regeneration key to this endeavour. Important in consideration is the outcomes of CBC projects regarding condition of the habitats in the conservancy and key species.

In the descriptive analysis, the judgment rule was “Not at All” for the values between 1<NA>1.8; “To a little extent” 1.8<LE>2.6; “To a moderate extent” 2.6<ME>3.4; “To a great extent” 3.4<GE>4.2; “To a very great extent” 4.2<VGE>5.0. Table 4.9 gives the results of the descriptive analysis of the Performance of CBC Projects.

Table 4.9: Descriptive Analysis of the Performance of CBC Projects

Statement	NA %	LE %	ME %	GE %	VGE %	μ	Σ
Community Empowerment							
Conservancy employees are from our community	0	20.2	7.6	54.6	17.6	3.70	.986
My CBC project been initiated by the conservancy	0.4	14.7	11.3	48.7	24.8	3.83	.981
Conservancy management helps CBC projects run its activities	0	21.0	18.5	47.1	13.4	3.53	.971
I now earn money from the projects initiated	0.4	13.4	13.4	58.4	14.3	3.73	.884
Improved infrastructure can be attributed to projects	0	27.3	26.9	42.9	2.9	3.21	.881
Acceptance of Wildlife Conservation							
Acceptance of conservation as a viable land use activity	0	10.1	14.7	45.4	29.8	3.95	.922
Agreed to presence of wildlife on their land	0	11.8	17.2	49.6	21.0	3.80	.906
Acceptance of wildlife to support tourism	0	13.4	8.0	53.4	25.2	3.90	.930
Sustainable Resource Use							
I have embraced new ways of supporting my family	0.4	15.1	12.2	50.0	22.3	3.79	.972
No more poaching of wildlife in the conservancy	1.3	13.9	17.2	52.5	15.1	3.66	.939
No more charcoal burning in the conservancy	0.4	11.3	11.8	52.5	23.9	3.88	.916
We now graze our cattle in designated areas only	0.4	8.0	13.0	63.9	14.7	3.84	.783
Tourism is now accepted as a way of income	0.4	8.4	11.8	63.9	15.5	3.86	.793
Biodiversity Regeneration							
There is increased sighting of wildlife	0.4	11.8	12.6	45.4	29.8	3.92	.965
There is increased grass and tree coverage	0.4	10.1	18.5	56.7	14.3	3.74	.840
Increased wildlife species in the conservancy	0.8	13.9	22.3	53.4	9.7	3.57	.877
Composite Mean						3.745	.454
NA = Not at All; LE = To a Little Extent; ME = To a Moderate Extent; GE = To a Great Extent; VGE = To a Very Great Extent; μ = Mean; σ = Standard Deviation							

From the findings in Table 4.9, CBC project performance was rated to be to a great extent given that $\mu = 3.745$. The standard deviation $\sigma = 0.454$ meaning that scores were clustered around the mean, an indication that project performance was to a great extent across the CBC projects across all the conservancies. All but one CBC project performance statements were to a great extent (means = $3.4 < GE > 4.2$).

Table 4.9 reveal that the means of community empowerment cluster statements ranged from moderate extent to a great extent and standard deviations greater than the composite one of 0.454, meaning that the statements had elicited incongruity from the respondents. In terms of empowerment, initiation of CBC projects by the conservancy was to a great extent ($\mu=3.83$ and $\sigma=0.981$) and ranked the highest. An examination of the frequencies in Table 4.9 shows that 48.7 percent and 24.8 percent to a great extent and to a very great extent respectively opined that CBC projects were initiated by the conservancies. The second rated form of community empowerment was earning of income from the initiated projects. The respondents opined that to a great extent, there was earning from the projects initiated ($\mu=3.73$; $\sigma= 0.884$) where 58.4 percent pointed out it was to great extent and 14.3 percent opined it was to very great extent. Rated third was empowerment through local employment which was also to a great extent ($\mu=3.70$; $\sigma =0.986$). The frequencies indicate that 54.6 percent and 17.6 percent agreed to a great extent and to a very great extent respectively, employees in the conservancies were drawn from the local community.

The findings in Table 4.9 reveal that the fourth rated community empowerment statement was that respondents to a great extent felt that conservancy management facilitated the running of the CBC projects ($\mu=3.53$; $\sigma=0.971$). The results further show that 47.1 percent felt that the facilitation to run CBC projects was to a great extent while 13.4 percent believed it was to a very great extent. However, members could not attribute the local infrastructure improvement to the conservancy itself *per se* since the results show that it was to a moderate extent ($\mu=3.21$; $\sigma= 0.881$). The results show that majority of respondents (42.9 percent) opined that to a great extent, improved infrastructure could be attributed to projects, while 27.3 percent and 26.9 percent opined it was to a little extent and moderate extent respectively. This was probably due to the presence of other actors such private investors who lease and construct tourism facilities and the county government of Laikipia in its effort to improve the local infrastructure. Overall, all community empowerment statements except one (initiation of CBC project by conservancy) had means lower than the composite mean ($\mu = 3.745$). This shows that community empowerment realised from the CBC project implementation was not to the expectations of the respondents.

The findings tabulated in Table 4.9 show the acceptance of wildlife conservation indicator cluster statements were to a great extent ($\mu=3.80$ to $\mu=3.95$) and had the standard deviations greater than the composite one of 0.454, meaning that the statements had elicited some inconsistency from the respondents. The findings further show that there was acceptance of

conservation as a viable land use activity to a great extent ($\mu=3.95$; $\sigma=0.922$). Majority of the respondents, 45.4 percent to a great extent and 29.8 percent to a very great extent agreed that conservation was a viable land use activity. This reinforces CBC projects as an emergent land use activity at the livestock-wildlife interface in many pastoral communities in Kenya.

The findings in Table 4.9 show that second in rank was the acceptance of wildlife conservation for tourism purposes in the community conservancies ($\mu=3.90$; $\sigma=0.930$). An examination of the frequencies shows that 53.4 percent (to a great extent) and 25.2 percent (to a very great extent) accepted that wildlife in the conservancies supported tourism. This is deemed important as local communities possessed ecotourism and wildlife conservation-related enterprises in the conservancies and that wildlife is a source of supplementary income for the local community. From the findings in Table 4.9, the third ranked statement was the acceptance of wildlife in community land ($\mu=3.80$; $\sigma=0.906$). Further, the frequencies show that 49.6 percent accepted to a great extent and 21.0 percent accepted to a very great extent the presence of wildlife in the community land. Overall, all items on the acceptance of wildlife conservation had a means above the composite mean $\mu=3.745$ indicating attitudinal change towards conservation and wildlife was very well on course due to the CBC projects.

The findings in Table 4.9 also revealed that the means of sustainable use of resources indicator ranged from 3.66 to 3.88, an indication that there was behavioural change and that sustainable resource use had been embraced in the conservancies to a great extent. However, the higher standard deviations ($\sigma > 0.70$) were indicative of divergence across the respondent scores. Further, the results show that the first ranked statement on sustainable resource use was the cessation of exploitation of habitats through charcoal burning. With a mean $\mu=3.88$ and standard deviation $\sigma=0.916$, the respondents to a great extent agreed that charcoal burning had ceased in the conservancies, where 52.5 percent and 23.9 percent opined that to a great extent and to a very great extent respectively, there was no more charcoal burning.

Examining the frequencies in Table 4.9 shows that the second ranked behavioural change was the acceptance of tourism as an economic undertaking. Majority of the respondents (63.9%) admitted that to a great extent, tourism was accepted as a way of earning a living in the conservancies. Furthermore, the mean $\mu=3.86$ and standard deviation $\sigma=0.793$ indicate that to a great extent, local community has had a behavioural change and have

embraced tourism as an economic activity. This confirms the performance of CBC projects where communities are using their land for tourism and wildlife conservation instead of relying on unsustainable land use systems like subsistence agriculture and pastoralism. Moreover, the results in Table 4.9 indicate behavioural change towards sustainable resource use as the frequencies show that community members have adopted sustainable grazing. Majority, 63.9 percent admitted that to a great extent, cattle grazing was done in designated areas only and 14.7 percent opined it was to a very great extent. The mean $\mu = 3.84$ and standard deviation $\sigma = 0.783$ give an indication the respondents agreed that grazing in the designated areas was to great extent. The results are reinforced by the fact that conservancies had grazing committees and rangeland management plans that led the community in matters of bunched grazing techniques and designating no-grazing and dry-season-only grazing zones.

Achieving sustainable resource use is seldom win-win situation and often requires communities to accept personal cost such as reducing consumption, changing habits. Literature showed that consensus about CBC projects was that trade-offs are more common than synergies. Pursuant to this, the results tabulated in Table 4.9 are indicative of the fact that that community members, to a great extent ($\mu = 3.79$; $\sigma = 0.972$), had embraced new ways of supporting their families. An examination of the frequencies showed that 50.0 percent to great extent had embraced new ways of supporting their family while 22.3 percent opined it was to a very great extent. Poaching can lead to overexploitation and threaten the survival of many endangered species and can either target plants or animals. The results in Table 4.11 show that to a great extent ($\mu = 3.66$; $\sigma = 0.939$) there was no more poaching of wildlife in the conservancy. The frequencies show that greater part of the respondents (52.5%) agreed that to a great extent, there was no poaching of wildlife in the conservancy. Overall, the results in Table 4.9 show all but one sustainable resource use cluster statements had scores above the composite mean $\mu = 3.745$, meaning that behavioural change was widely adopted due to the benefits of CBC projects. This was so because CBC projects, resource use is directly linked to providing alternative livelihoods so that economic benefits from the latter can lessen harvests of the resource.

The results tabulated in Table 4.9 revealed that biodiversity regeneration of species and habitats cluster statements were all to a great extent, ranging from 3.57 to 3.92. The standard deviations were higher than the composite $\sigma=0.454$, an indication that there was divergence of opinions across the respondent scores. Increased sighting of wildlife ranked the highest,

mean $\mu = 3.92$ and standard deviation $\sigma = 0.965$, indicating that it was to a great extent. Frequencies presented in Table 4.9 also reveal that greater part of respondents (45.4%) agreed that wildlife sightings in the conservancies had increased to great extent while 29.8 percent opined that the sightings were to a very great extent. Wildlife exists in a landscape of fear and avoids areas where predators might be lurking, and that includes humans. The sighting of wildlife was an indication of reduced human activity in the conservancies, showing that the CBC projects had brought behavioural change in local community activities. This is because efforts of species conservation often necessitate local communities to find substitute livelihood options to protect or restore the habitats and wildlife species.

Table 4.9 results further show that majority of those surveyed (56.7%) agreed that to a great extent, there was increased grass and tree coverage and 14.3 percent viewed that it was to a very great extent. The results further show habitat recovery in terms of increased grass and foliage because of the project was to a great extent ($\mu = 3.74$; $\sigma = 0.840$). This is evidence that CBC projects have the potential to reverse habitat degradation, increase local biodiversity, and deliver important ecosystem services. Apart from wildlife sightings, it was prudent to establish whether the sightings signalled an increase in the type of species of wildlife in the conservancies. From the frequencies, majority (53.4%) viewed that to a great extent, wildlife species had increased during the CBC projects period. With a mean $\mu = 3.57$ and standard deviation $\sigma = 0.877$, the results show that to a great extent, there was increased wildlife species in the conservancies. Overall, only one statement of biodiversity regeneration was above the composite mean of 3.745, which meant that the regeneration though to a great extent, did not match the expectations of the respondents.

Results from the qualitative data analysis meant to triangulate the results from the cross-sectional survey noted the same trends. From the analysis of the focussed group discussions, it was evident that the local community had been empowered by the conservancies through direct employment and CBC projects such as bead works for women, livestock works, tourism, and *moran* enterprises that targeted the youth. It was clear from the focused group discussion that CBC projects were empowering the community by building new sustainable opportunities, and simultaneously saving wildlife and natural ecosystems. One chairman of a conservancy said.

“We have seen preservation of our local culture and empowerment especially for women as they benefit from bead works a lot.... and we encourage people to join the conservancy projects to earn a living.”

According to the participants, the conservancies had improved infrastructure in the Laikipia conservation region. They pointed out Ilpolei shopping center in Naibunga Upper conservancy as an example, noting that the center has sprouted because of livelihood activities in the conservancies. The most outstanding empowerment pointed was that of human capital in education and health. Education in the conservancy communities had received a major boost as learners benefited from bursaries, schools had been constructed, staffed, and equipped courtesy of the CBC projects. The participants further noted that health of the local community had been improved through immunizations, nutrition and family planning training and construction of clinics.

The document analysis pointed to a community that was enjoying the fruits CBC projects. The State of Conservancies (SOC) Report is an annual publication by the NRT and Kenya Wildlife Conservancies Association (KWCA). The NRT (2019) indicates that there were 1,066 permanent local staff employed in community conservancies and that in the same year alone, 2,737 temporary jobs ranging from road projects to classroom construction were created in the NRT affiliated conservancies. To add on to that, the annual publications point to an upward trend on income associated with livelihood projects. For instance, 1,021 women from nine conservancies were involved in bead work projects in 2018 and had a combined earning of Kenya Shillings 4.7 million. This figure increased to over 1,200 women in the projects across the nine conservancies in 2019, whose combined income jumped 94 percent (compared to 2018) to Kenya Shillings 9.1 million with the sales of more than 100,000 items.

The strides made by ecotourism, which is known to be a significant contributor to local economies through job creation, infrastructure development, and revenue generation were highlighted in the documents. The NRT (2017) noted a 20 percent increase in tourism revenue to conservancies and in addition NRT (2018) reported tourism revenue that amounted to Kenya Shillings 86 million. This revenue was reported to have jumped by 55 percent in 2019 to a tune of Kenya Shillings 133 million (SOC, 2019). Further, according to NRT Strategic Plan 2018-2022, there was a 74 percent increase in revenue to conservancies from tourism between the years 2012-2017. From livestock works, the sale

of 2,335 heads of cattle from 1,175 members earned Kenya Shillings 94 million in 2018 but dropped to 1,532 heads of cattle in 2019 that earned Kenya Shillings 62 million.

Based on NRT, 1,924 learners received Kenya Shillings 9.5 million in bursaries in 2017, and that bursary beneficiaries ballooned to 3,077 in beneficiaries in 2019 (a 60% increase from 2017). The document analysis highlights the empowerment to diversify livelihoods. NRT (2019) reports that 1,489 youth and women profited from microfinance initiatives where 776 received loans to buy motorcycles for *boda boda* public transport businesses and women got loans for startup capital to engage in beadwork and other small enterprises. Based on these results, it is beyond any reasonable doubt that CBC projects in Laikipia region have had a positive performance by empowering local participants while at the same time promoting conservation.

Through the thematic framework analysis, the focussed group interview participants concurred that a positive change of attitude towards conservation has been noted, a change one chairman of a conservancy attributed to benefits from the CBC projects as they promote local community livelihoods by saying that.

“Our community no longer relies on livestock alone; wildlife conservation has become a source of income to us. We have now learned to eat using both hands, we now eat from our livestock, and from conservation”

Another conservancy chairman added that.

“The attitude of our community towards conservation has positively changed over the last years. Conservation is so important here to the extent that it is an item in political campaigns. The current Member of County Assembly rode on conservation and it is one of the reasons he was elected.”

Evidence from documents reviewed indicated that the community readily accepts strategies meant to create a space for wildlife conservation. Yardstick to this is the fact that conservancy members willingly participate in dividing their group ranches to different blocks to allow areas of conservation and areas of cattle grazing. In a blend of external expertise and traditional ecological knowledge, range management experts and local grazing committees, the members practice block and bunched grazing to help habitats to recover. To cement these results, an NRT Community Conservancy member in 2018 said,

“We have always co-existed with elephants, but in the past, we viewed them as something to be wary of. They would collapse our wells, obstruct our paths and

in some cases our young men would come into conflict with them while herding.

Since the sanctuary opened, I think things have changed...”

The document review further pointed to the acceptance of the communities to participate in conservation education programs. The annual NRT (2019) reported that 450 conservancy members that comprised of conservancy board members, managers, and community committee members had been trained on Leadership and Management since 2016. Such training is important as it can impact stakeholder beliefs, perceptions, attitudes, and ultimately influence the acceptance of wildlife conservation.

CBC projects are anchored on the premise of invigorating community economic and social aspirations to trigger sustainable natural resource use. The qualitative strand of the study confirmed the quantitative survey results that with implementation of various alternative livelihood projects in the conservancies, members adopted sustainable use of the natural resources. Thematic framework approach analysis of the focussed group discussion found out that conservancy members had abandoned past conservation vices. For instance, charcoal burning was reported to have been eliminated as those who used to do it embraced other livelihood initiatives. Important to note was that the community has also embraced bunched grazing systems, where land is divided to different zones and grazing patterns are in place to take care of the habitats. This type of conservation grazing is meant to bring balance back to impoverished habitats. One manager said that.

“The community through assistance by NRT range management has grazing committees in the conservancies that carefully direct grazing patterns in the paddocks. This allows some areas to recover from exploitation.”

In CBC projects, livelihood diversification strategies perform a significant role in linking conservation and development. From the focused group discussion, it was evident that the conservancy members had increased local innovation in livelihood and enterprise practices in that households combined diverse portfolios of livelihood activities and assets to advance their welfare and did not rely on cattle rearing alone. As seen in the background information, a wider number of respondents in this study (45.0%) were members of more than one CBC project.

Further in concurrence with these results, the document analysis point to adoption of rational use and skilful preservation and management of the natural resources. From the KWCA (2016), sustainable use of resources such as sale of local products and wildlife tourism were

the main avenues for generating benefits in conservancies. The NRT (2017) pointed to an increased number the conservancy women participating in beadwork with the aim to reduce reliance on livestock and natural resources. Document analysis also showed that bunched grazing had contributed to the rejuvenation of rangelands and land area under strict conservation has been increased by the practice. Furthermore, it was reported that there was reduced poaching incidences in the conservancies, for instance, according to NRT (2017) the proportion of illegally killed elephants had reduced from 56 percent to 34 percent. In Il Ngwesi community conservancy, an International Livestock Research Institute (ILRI) report by Nganga and Robinson (2018) pointed that the members were engaged in a sustainable resource use of hay-making business as an additional source of livelihood. CBC projects in Laikipia conservation region appear to be sound tools that have created the necessary awareness and ushered in sustainable use of local natural resource base, therefore safeguarding the natural capital for the present-day and forthcoming generations.

Lastly, the qualitative analysis of the focussed group discussions and document analysis show that there was CBC project performance in terms of biodiversity regeneration. From the focussed group discussions latest wildlife species sightings indicated that there was a reappearance of species that had been locally extinct. One conservancy chairman said.

*“When I was young, we used to see hirola (*Beatragus hunteri*) but later they completely disappeared. Of late, these antelopes have been sighted severally and we are happy because they are now coming back. This shows our conservation efforts are paying off.”*

The managers of the conservancies believed there were increased sightings of wildlife even within community settlements, especially reticulated giraffe (*Giraffa camelopardalis reticulata*), elephants (*Loxodonta Africana*), impalas (*Aepyceros melampus*), and the Grevy’s zebra (*Equus grevyi*). This pointed to an increased wildlife species population in the conservancies.

Based on the discussions, the respondents pointed to the increased grass and vegetation coverage over the recent years, which they attributed to changes in grazing patterns, land reclamation efforts through gulley filling, bunched grazing, and eradication of invasive species. Other factors that respondents pointed to as being precursors of the biodiversity regeneration were the ending of charcoal burning and reseeded of rangelands through NRT’s natural capacity enhancement. Further, to cement the prove of habitat rehabilitation,

a respondent reported that studies of rhinoceros reintroduction in some conservancies were being done owing to the success of conservation in the region.

The document analysis pointed to an increase in Grevy's zebra, elephants, Cape buffalo (*Syncerus caffer*), Beisa oryx (*Oryx beisa*), eland (*Taurotragus oryx*), gerenuk (*Litocranius walleri*), cheetah (*Acinonyx jubatus*), lion (*Panthera leo*), wild dogs (*Lycaon pictus*) and reticulated giraffe populations (SOC, 2018), confirming the results of the survey and those of the focused group discussions. All the reviewed annual reports showed that there had been increasing acreage of land under conservation and vegetation cover due to land reclamation efforts of gulley filling and elimination of invasive species. Naibunga Upper, Naibunga Central, Naibunga Lower, and Il Ngwesi projects are engaged in rehabilitation efforts of reseeded meant to restore degraded rangelands. The document analysis showed that the local community had noted positive changes in biodiversity overtime. In the Nganga and Robinson (2018) Il Ngwesi conservancy report, the management points out that there were changes in the rangeland condition due to the implementation of rangeland management activities.

4.7 Analysis of Scope Determination

The necessity of determining the scope while designing a project to ensure performance is accentuated in several studies. This study sought to establish the influence of scope determination on CBC project performance. Determination of project scope brings a common understanding among stakeholders about what goes into a project, what gets out of it and what factors define its success. In this respect, based on reviewed literature of conservation projects, the study considered project tasks, project deliverables and project targets as the main indicators of this variable. Through the theory of change, CBC project designers determine the tasks, deliverables, and targets of the project to be worked on to contribute to the series of results leading to conservation and development impacts. In the descriptive analysis, the judgment rule was “Not at All” for the values between 1<NA>1.8; “To a little extent” 1.8<LE>2.6; “To a moderate extent” 2.6<ME>3.4; “To a great extent” 3.4<GE>4.2; “To a very great extent” 4.2<VGE>5.0.

Firstly, the researcher sought to establish the major tasks that link conservation and development as performed by the projects. The respondents were requested reveal the extent to which project task statements linking conservation and development were included in the CBC project design. Further, it was of paramount importance for this study to find out the

clarity on the outputs to be created as the result of CBC project implementation and therefore had statements of project deliverables in the project design scope based on Likert Scale. The last rubric used to measure the level of scope determination in CBC projects was the targets set for improvement by the project designers. CBC projects focus on a community, an ecosystem, or a wildlife species. Together, these conservation project targets should represent the entire array of community and biodiversity at the site of implementation. Table 4.10 shows the results of descriptive analysis of scope determination as a project design activity.

Table 4.10: Descriptive Analysis of Scope Determination

Statement	NA %	LE %	ME %	GE %	VGE %	μ	σ
CBC Project Tasks							
There are clear project tasks	2.1	21.1	8.0	35.0	33.8	3.77	1.186
Project tasks are customized to fit my group	3.8	11.4	8.9	55.3	20.7	3.78	1.023
The project tasks promote our livelihood	2.5	9.7	12.7	58.6	16.5	3.77	.926
Project tasks promote conservation of wildlife	0.8	9.3	9.7	65.4	14.8	3.84	.818
CBC Project Deliverables							
Project aims to achieve wise use of resources	0	17.7	8.4	49.8	24.1	3.80	.999
We have clear conservation goals to achieve	0.8	29.1	13.1	45.6	11.4	3.38	1.049
We have clear local development goals	0.8	23.2	11.4	51.5	13.1	3.53	1.015
Project outputs are well documented	0.4	19.8	14.3	52.7	12.7	3.57	.961
CBC Project Targets							
The project is designed to give us an alternative livelihood	0.8	16.5	11.0	45.6	26.2	3.80	1.034
The project is meant for my age group and gender	0.4	13.9	16.9	57.0	11.8	3.66	.877
The project is meant to conserve a particular habitat	0.4	14.8	22.4	54.4	8.0	3.55	.855
The project is meant to conserve a particular species	0	14.3	24.1	56.5	5.1	3.52	.800
Composite Mean						3.66	.548
NA = Not at All; LE = To a Little Extent; ME = To a Moderate Extent; GE = To a Great Extent; VGE = To a Very Great Extent; μ = Mean; σ = Standard Deviation							

Descriptive analysis findings from Table 4.10 shows that project task indicators had means that ranged from 3.77 to 3.84, an indication they were included in the design of CBC projects

to a great extent ($3.4 < \mu < 4.2$). The means are also well above the composite mean $\mu=3.66$, signifying that CBC project tasks were well scoped to link conservation and local development. However, the standard deviations of project tasks statements ($\sigma = 0.818-1.186$) were higher than composite $\sigma = 0.548$ showing lack of uniformity of opinion in the sampled population.

Table 4.10 results show that project tasks scoping to promote conservation of wildlife was to a great extent ($\mu=3.84$; $\sigma = 0.818$) where 65.4 percent of the respondents viewed that to a great extent, the tasks designed to be undertaken by their respective projects promoted conservation of wildlife while 14.8 percent opined that it was to a very great extent. The findings in Table 4.10, customising project tasks to fit demographic groups of gender and age was to a great extent ($\mu=3.78$; $\sigma = 1.023$). An examination of the frequencies shows the tasks undertaken were considerate of demographics with majority (55.3%) being of the view that to a great extent, the tasks fitted respective groups and 20.7 percent opining the tasks fitted respective groups to a very great extent. The results justify the presence of various types of alternative livelihood projects such as Bead Works, Bee Keeping, Livestock Works, Moran Enterprises, and Tourism Works.

Participatory development theory encourages inclusivity that instigates ownership over development processes to realize sustainable impacts. Pursuant to this, CBC projects ought to moot livelihoods customised to the local community. The results shown in Table 4.10 suggest respondents agreed to a great extent, the tasks undertaken in the projects promoted local livelihoods ($\mu=3.77$; $\sigma = 0.926$) where with 58.6 percent and 16.5 percent opined it was to a great extent and to a very great extent respectively. Moreover, the results indicate that to a great extent, project tasks were clear to the participants ($\mu=3.77$; $\sigma = 1.186$). A close examination of the frequencies of the survey shows that 35.0 percent agreed to a great extent and 33.8 percent agreed to a very great extent that the project tasks were clear to them.

The results tabulated in Table 4.10 shows that the means of project deliverables indicators ranged from 3.38 to 3.80, showing that scope determination in terms of project deliverables was included in the CBC project design from a moderate extent to great extent. The means show that only one project deliverable scoping statement had its mean above the composite mean of $\mu=3.66$. This is an indicative of the fact that project deliverable scoping was not optimally done. In addition, standard deviations of project deliverable scoping statements

($\sigma = 0.961-1.049$) were above the composite $\sigma = 0.548$ showing lack of consistency of opinion in the sampled population.

The results in Table 4.10 show that project deliverable scoping to achieve wise use of resources had a mean $\mu = 3.80$ and standard deviation $\sigma = 0.999$ and was the highest ranked in this cluster, an indication that it was to a great extent. The frequencies show that majority (49.8%) opined that to a great extent, and 24.1 percent to a very great extent, project activities were geared towards making members aware of wise use of resources. The CBC project deliverable of wise utilization of natural resources is central to achieving sustainable resource use and the regeneration of biodiversity. Documentation of project deliverables ranked second as 52.7 percent viewed it was to a great extent and 12.7 percent viewed that it was done to a very great extent. A mean $\mu=3.57$ and a standard deviation of $\sigma = 0.961$ meant that the documentation of deliverables in the design of CBC projects was to a great extent. This confirms the necessity of documenting scoped CBC project deliverables to ensure clarity and enables stakeholders to see what needs to be done and what has been promised in the project.

The results from Table 4.10 further show that clarity of local development goals was ranked third where 51.5 percent viewed that to a great extent, there were clear local development goals, 13.0 percent viewed that it was to a very great extent. However, a notable 23.2 percent opined that the clarity of local development goals was to a little extent. The indicator had a mean $\mu=3.53$; $\sigma = 1.015$ which shows that to a great extent, there were clear local development goals. The local development as part of scope is critical for economic outcomes of CBC projects. The fourth ranked project deliverable scoping statement was clear conservation goals. The mean $\mu=3.38$ and standard deviation $\sigma = 1.049$ indicate that the clarity of conservation goals was to a moderate extent with the frequencies showing that 45.6 percent viewed the clarity to be of great extent and 29.1 percent being of the view that the clarity was to a little extent. The conservation goal deliverable as part of scope is critical for ecological outcomes of CBC projects in terms of biodiversity regeneration.

The findings in Table 4.10 indicate that the means of statements on project targets ranged from 3.52 to 3.80, an indication that to a great extent, the CBC project design had clear project targets. In addition, standard deviations of project deliverable scoping statements ($\sigma = 0.800-1.034$) were higher than the composite $\sigma = 0.548$, an indication that there was no consistency of opinion in the sampled population about the scoping of project targets. Furthermore, Table 4.10 shows that with a mean $\mu = 3.80$ and standard deviation $\sigma = 1.034$,

project activities targeted an alternative livelihood to a great extent. The frequencies in Table 4.10 show that most of the respondents (45.6%) opined that project activities to a great extent targeted an alternative livelihood while 26.2 percent believed it was to a very great extent. Alternative livelihood is the means through which CBC projects empower the local community and divert them from unsustainable exploitation of natural resources and ensure that ecological outcome target achieved through biodiversity regeneration.

From the survey results in Table 4.10, it was evident that the second important project target scoping statement was the calibration of the projects to target demographic characteristics of the local community. With mean $\mu = 3.66$ and standard deviation $\sigma = 0.877$, CBC projects targeted age groups and gender to a great extent. From the frequencies, majority of the respondents (57.0%) viewed that to a great extent, CBC projects deliberately targeted age groups and gender. The targeting was particularly on age group (such as Moran enterprises for the youth), gender (such as bead works for the women), and livestock works (for household heads who owned cattle). This targeting was geared to divert sections of labour from unsustainable exploitation of natural resources.

The concept of habitat is critical to modern ecology as species diversity is positively correlated with habitat area. It was important to find out whether particularly, habitats were a target in the CBC projects. The results from Table 4.10 show that the third important indicator of the project target scoping according to the respondents was the target to conserve a particular habitat. The mean $\mu = 3.55$ and standard deviation $\sigma = 0.855$ indicate that to a great extent, project activities targeted to conserve a particular wildlife habitat. The mean is however less than the composite mean of $\mu = 3.66$, showing that scoping to target to conserve a particular habitat was not done satisfactorily. An examination of the frequencies in the Table 4.10 shows that majority (54.4%) viewed that targeting of a particular wildlife habitat was to a great extent while 22.4 percent viewed that it was to a moderate extent. Identification and prioritization of species for conservation activities is a key strategy in CBC projects. The results show that activities targeting to conserve a particular species ranked fourth where 56.5 percent, the majority, were of the view that it was to a great extent while 24.1 percent viewed that it was to a moderate extent. The mean $\mu = 3.52$ and standard deviation $\sigma = 0.800$ show that to a great extent, the CBC projects were designed to conserve a particular wildlife species. The mean is however less than the composite mean of $\mu = 3.66$, showing that scoping to target to conserve wildlife species was

not done satisfactorily. Targeting habitats and species for conservation is an important precursor to biodiversity regeneration.

Pursuant to the survey results, the qualitative strand of the study corroborates the results from the cross-sectional survey. Qualitative analysis of the focused group discussions revealed that project tasks were purposive and geared towards empowering the community to change their perception on the use of resources and ultimately towards conservation. Other tasks targeted to reclaim the habitats that had been destroyed by exploitation or climate change. For instance, project tasks included reseedling of rangelands, gulley filling to mitigate soil erosion and clearing of invasive species such as *Acacia reficiens* and *Opuntia stricta* from the rangelands. These conservation-oriented tasks earned the members some allowances and therefore were a source of livelihood. One chairman observed that.

“Our tasks that are meant to conserve our environment but are also act as a source of income. Our community earns money from the activities, so we kill two birds with one stone.”

The community members were also performing tasks meant to bring about behavioral change towards sustainable resource use. These tasks were paddocking of the conservancy areas and bunched grazing which are geared towards achieving biodiversity regeneration. Document analysis identified alternative livelihood tasks undertaken to be those meant to empower the community such as through provision of income (SOC, 2018; SOC, 2019). These tasks were enterprise startups for community members, bead craft, livestock husbandry, livestock fattening for better cattle prices. Document review also showed that conservancy members were involved in infrastructure improvement tasks that earned allowances for their households.

Further, the thematic framework analysis of the focussed group discussion found out that the projects had clearly set deliverables to be achieved. The respondents pointed out that the projects were directed at empowering the community across all the demographic categories. The respondents specifically identified youth and women enterprises, livestock works and tourism enterprises, all geared towards promoting local livelihoods. In addition, the respondents identified the rejuvenation of rangelands in the conservancies as an important project deliverable. A conservancy manager said that.

“We keep plans where the conservation and development goals planned in each community conservancy are listed. Everything that is done in the projects

originates from these plans which are drawn by the community assisted by experts from our donors.”

Document analysis further concurred with the survey and group discussion results. For instance, Naibunga and Lekurruki conservancies had clear cut project deliverables in their respective Conservancy Management and Community Development blueprints. In both conservancies, these project deliverables were.

Goal One: Improving services for community development

Goal Two: Building peace and security

Goal Three: Conserving wildlife

Goal Four: Growing and diversifying our economy

Goal Five: Improving the condition of our rangelands

Other reviewed documents point to important project deliverables that link conservation and local community development such as good infrastructure for tourism, education, health, and conservancy management; the goal to develop innovative and unique tourism attractions; the plans to equip conservancy rangers with tools and equipment to respond to poaching.

The qualitative analysis authenticated the cross-sectional survey results that the design involved targets to promote conservation and local community welfare. The respondents composed of managers and chairmen of conservancies pointed out that alternative livelihood initiatives targeted various categories of the local population. A conservancy manager observed that.

“The youth in our conservancy are fully engaged in livelihood activities to support conservation. Through the support of NRT, we now have boda enterprises for the youth to earn a living and our women have not been left behind too, from the comfort of their homes, they are now able to earn a living through beadworks.”

The health of the community members was also a project target too with respondents confirming that donors had constructed health facilities and that there were ongoing child nutrition programs in their conservancies. Literature argues that the presence or absence of benefits to the community is what mattered to spur acceptance of wildlife conservation (Groom and Harris, 2008). Charcoal burners and alcohol brewers were also project targets for the purpose of eliminating the vices. On the biodiversity regeneration front, respondents

of the focussed group discussion pointed to the targeting of rangelands for rehabilitation, elimination of invasive plant species to restore rangelands and targeting of livestock owners for bunched grazing to allow habitats to regenerate.

The results of the analysis of the documents validate those of the survey and group discussions too. All conservation reports reviewed showed that CBC projects targeted the youth and women for livelihood and empowerment programs through establishment of microfinance services in the conservancies. Wildlife species particularly elephants, cheetah, wild dogs, and lions were targets for conservation as they are endangered. For instance, NRT (2019) reports that.

“Our activities are meant to conserve particular wildlife species: Four conservancies are handling endangered species sanctuaries with the financial assistance of NRT and partners.”

The reviewed documents ratified the survey and the focussed group discussions results by highlighting those rangelands are targets for rehabilitation through reseedling, gully filling, bunched grazing, and efforts to eradicate invasive plant species.

4.7.2 Scope Determination and Performance of CBC Projects

The first objective of the study sought to establish the extent of the relationship between scope determination and the performance of CBC projects in Laikipia region. Pursuant to this, the following null hypothesis was tested.

***H₀₁:** There is no significant relationship between scope determination and performance of community-based conservation projects in Laikipia region.*

As indicated in the operationalization of variables in Chapter Three, Scope Determination had been measured using three indicators, namely, Projects tasks, Project deliverables and Project targets. However, based on the two principles provided by Warmbrod (2014) composite scores of scope determination and those of performance of CBC projects were used in both correlation and regression analyses. The results of the correlation between Scope Determination and Performance of CBC Projects composite scores are presented in Table 4.11.

Table 4.11: Correlation of Scope Determination and Performance of CBC Projects

		Scope Determination
Performance	Pearson Correlation	.542**
	Sig. (2-tailed)	.000
	N	238

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

From the findings in Table 4.11, it was established that Scope Determination was positively and significantly correlated with the Performance of CBC Projects. With coefficient $r = 0.542$, the correlation was deemed statistically significant at $p = 0.05$. These results grant enough evidence. The null hypothesis for the entire population was rejected and it was therefore concluded that scope determination was statistically and significantly related to CBC project performance in Laikipia region.

To further investigate how the predictor and outcome variables were related, a simple linear regression was carried out to establish whether Scope Determination could significantly predict the Performance of CBC Projects. This prediction was modelled as follows.

$$Y = a + \beta_1 X_{SD} + e$$

Y = Performance of CBC Projects, a = constant, β_1 = Beta coefficient
 X_{SD} = Scope Determination, and e = error term

Table 4.12 depicts the ensuing regression analysis results (Appendix L shows the full regression analysis results).

Table 4.12: Regression of Scope Determination on Performance of CBC Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
	.542a	.294	.291	.38246	.294	98.237	1	236	.000

Model ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.370	1	14.370	98.237	.000 ^p
Residual	34.522	236	.146		
Total	48.892	237			

Model Coefficients	Unstandardized Coefficients		Standardized Coefficients		T	Sig.
	B	Std. Error	Beta			
(Constant)	2.097	.168			12.466	.000
SCOPEDETERMIN	.450	.045	.542		9.911	.000

- a. Predictors: SCOPEDETERMIN
- b. Dependent Variable: PERFORMANCE

The results from the regression analysis presented in Table 4.12 revealed that scope determination was indeed related to CBC project performance ($r = 0.542$ at $p = 0.05$). From the model summary, the value of $R^2 = 0.294$, suggesting that scope determination explains 29.4 percent of the change in performance of CBC projects score. This means that other factors not found in the model explain 70.6 percent of performance of CBC projects. The model coefficients show a beta value of 0.542, denoting that a unit increase in scope determination leads to 54.2 percent increase in the performance of CBC projects. Overall, at 0.05, the model was deemed to be statistically significant.

The findings in Table 4.12 show that the F ratio in the Model ANOVA was significant since $F_{(1,236)} = 98.237$ at $p = 0.05$ pointing out the computed model had a statistically significant predictive capability. This means that performance of CBC projects could reliably be predicted based on the level of scope determination done during project design.

Based on these statistical findings, the following is substituted regression model that could predict the Performance of CBC Projects in terms of Scope Determination.

$$Y = 2.097 + 0.542SD + 0.168$$

Where: Y = Performance of CBC Projects
 SD = Scope Determination

From the survey results, scope determination features in project design to a great extent ($\mu = 3.66$; $\sigma = 0.548$) and strongly correlates with the performance of CBC projects ($r = 0.542$ at $p = 0.05$). The results agree with Pretorius (2016) that scope determination was a recognized and an effective means of improving project success chances. Further, the results concur with those of Banda Jr. and Pretorius (2017) that prioritization of tasks that enable project management to plan and assign resources effectively was a precursor of project performance; and Mirza *et al.* (2013) in that, defining project and product scope at the design stage is essential for product and project success. The results underscore the importance of identifying and describing all the conservation and development work required to bring the project to fruition.

The findings are also consistent with project management standards (PMI, 2017) in that correct defining of tasks and deliverables in project design is foundational to good project management. Conservation projects are implemented in complex and dynamic environments and ensuring the dreaded scope creep bug call for clarity of tasks, deliverables, and project targets. This calls for processes that ensure project scope is factored

in the design of the project. Therefore, the results of the study concur with those of Derenskaya (2018) in that determining the project scope forms the basis of all project decisions which are ultimately geared towards achieving the planned deliverables.

These findings of the study are in conformity with Andersen (2006) who pointed out the importance of clear milestones in a project scope to be more than just showing progress, but also communicating about the project itself. The conservancies were found to have clear cut project milestones and deliverables in their respective Conservancy Management and Community Development blueprints. Additionally, these findings coincide those of Kikwatha *et al.* (2017) who opined that targeting the right beneficiary led to a significant contribution to the success of a project.

The results comport arguments by Bernhard *et al.* (2020) that CBC projects should target the habitats where intelligence points to higher levels of unauthorised resource use compared to others. In the study, it was established that the projects were designed to target specific demographics for empowerment (youth and women groups) and other groups involved in vices such as former charcoal burners and alcohol brewers. The scope of the projects included keystone wildlife species particularly elephants, cheetah, wild dogs, and lions, all as targets for conservation as they are endangered.

Thematically, these findings comport past academic literature on CBC projects. For instance, Miller *et al.* (2012) points out to the connection between local development through alleviation of poverty and biodiversity conservation. The study found out that the project tasks were purposive and geared towards conservation of biodiversity resources and at the same time improving the welfare of the local community through alternative livelihood initiatives. Based on the quantitative and qualitative analysis performed, projects tasks were found to have been designed with the intent to decrease the frequency of activities regarded to be ecologically detrimental by replacing them with alternative livelihood activities that are of lower impact but able to afford equivalent benefits.

These findings also concur with theory of change Stein and Valters (2012) described it as “a theory of how and why an initiative works”. The findings point to the fulfilment of the “if, then” logic in that local community is more likely to develop favourable attitudes towards conservation if the CBC projects implemented were scoped to better their own livelihood needs (Schuett *et al.*, 2016). This also made it important to identify the groups that are more likely to threaten wildlife.

4.8 Analysis of Capacity Building of Project Beneficiaries

To achieve the competing goals of development and conservation concurrently, CBC projects must strengthen the abilities needed by the local community to successfully perform the required tasks. The mainstreaming of capacity building in CBC projects where individuals, institutions are strengthened, and their capabilities enhanced to achieve their own development objectives was measured through the sustainable livelihood framework. The indicators were the enhancement of human, social, financial, physical, and natural capacities. In this, the following judgment rule was used in the descriptive analysis; “Not at All” for the values between 1<NA>1.8; “To a little extent” 1.8<LE>2.6; “To a moderate extent” 2.6<ME>3.4; “To a great extent” 3.4<GE>4.2; “To a very great extent” 4.2<VGE>5.0.

The complexity of CBC project environments necessitates enhancement of human capacity needs such as strengthening of managerial systems of institutions implementing them. Further, social capacity is important for cohesion while financial capacity enables linking conservation and development through conservation enterprises. Furthermore, natural, and physical capacities are also important in linking conservation and development. Table 4.13 shows the descriptive results of capacity building of project beneficiaries as a project design activity.

Table 4.13: Descriptive Analysis of Capacity Building of Project Beneficiaries

Statement	NA %	LE %	ME %	GE %	VGE %	μ	σ
Human Capital Enhancement							
Training in various skills to improve my livelihoods	0	14.7	15.5	45.4	24.4	3.79	.974
Project supports education of the community children	0.4	2.5	37.0	54.6	5.5	3.62	.649
Project supporting health and welfare of the community	0	6.7	5.9	60.9	26.5	4.07	.768
Social Capital Enhancement							
Traditional knowledge is used in the projects we undertake	0	3.4	38.2	53.4	5.0	3.60	.640
Project supports welfare programs of my community	0	13.0	16.4	41.6	29.0	3.87	.980
We often benchmark in other well performing CBC projects	2.1	4.2	5.9	60.1	27.7	4.07	.831
Financial Capital Enhancement							
Availability of credit facilities for startups	0	6.3	34.9	52.9	5.9	3.58	.699
Financial advice is given to us by the conservancy	0	6.7	37.8	51.7	3.8	3.53	.679
We have access to assets for our entrepreneurial activities	0	4.6	37.0	54.6	3.8	3.59	.643
The conservancy assists in marketing of our produce	0	7.6	38.2	50.4	3.8	3.50	.692
Natural Capital Enhancement							
Conservancy seeks to increase conservation land	0.8	11.3	8.0	47.1	32.8	4.00	.970
Land is zoned to conservation, settlement, and grazing areas	0.4	2.1	36.1	56.7	4.6	3.63	.628
The project has initiated habitat and species recovery activities	0	2.1	36.6	56.3	28.2	3.64	.612
There are initiatives to conserve conservancy water sources	1.3	5.0	9.7	55.9	28.2	4.05	.833
Physical Capital Enhancement							
Buildings for livelihoods and conservation are provided	0.8	11.3	11.8	55.5	20.6	3.84	.911
There is provision of tools and equipment	8.8	2.1	35.3	50.0	3.8	3.38	.941
Projects improve infrastructure in the conservancy area	8.4	2.1	35.7	50.0	3.8	3.39	.929
Composite Mean						3.71	.428
NA = Not at All; LE = To a Little Extent; ME = To a Moderate Extent; GE = To a Great Extent; VGE = To a Very Great Extent; μ = Mean; σ = Standard Deviation							

Table 4.13 tabulated the findings of capacity building of project beneficiaries integrated in CBC projects design. With an overall, composite mean $\mu = 3.71$ and standard deviation $\sigma =$

0.428, the analysis determined that capacity building for project beneficiaries was integrated in the design of CBC projects to a great extent. The results from Table 4.13 show that the means of human capital enhancement statements ranged from 3.62 to 4.07. This indicates that to a great extent, the CBC projects design included human capacity enhancement. The means were above the composite mean $\mu = 3.71$ meaning that human capacity enhancement was well factored in CBC project design. The standard deviation of human capacity enhancement statements ranged from $\sigma = 0.694$ to $\sigma = 0.974$, well above the composite $\sigma = 0.428$, an indication that there was inconsistency in the scores.

Table 4.13 findings reveal that the highest ranked human capacity enhancement activity was the support of health and welfare of the local community. Majority (60.9%) opined that support of health and welfare was to a great extent and 26.5 percent saw the same to be to a very great extent. The mean $\mu = 4.07$ and standard deviation $\sigma = 0.768$ show that project support to health and welfare was to a great extent. The CBC projects provide health services to raise awareness about conservation, reduce pressure on natural resources, and eliminate the likelihood of transmission of zoonotic diseases between people, wildlife, and livestock. Second rated human capacity enhancement statement was skills training activity. The results show that the respondents perceived training in various skills to improve my livelihoods to be to a great extent ($\mu = 3.79$; $\sigma = 0.974$) with majority, 45.4 percent polling to a great extent and 24.4 percent to a very great extent. This means that the CBC project design was cognizant that skills are central to improving livelihood opportunities and enhancing productivity and promoting environmentally sustainable development in the conservancies.

According to the results in Table 4.13, the third in rating was support of the projects to the education sector. The mean $\mu = 3.62$ and standard deviation $\sigma = 0.649$ show that project support to the education of the community was to a great extent and majority, (54.6%) opined it was to great extent, however a considerable 37 percent viewed the support being to a moderate extent, perhaps meaning there were areas where education was not being well supported. The design of the projects promotes access to education and health as tangible benefits of community conservancies and alleviate the challenges of poor-quality education in under-resourced schools in the conservation areas.

The second rubric was capacity building was that of human capacity enhancement. Table 4.13 findings reveal that the means of human capacity enhancement ranged from 3.60 to 4.07. This is an indication that enhancement of social capacity was mainstreamed to the

CBC project design to a great extent. Standard deviations social capacity enhancement statements ranged from $\sigma = 0.640$ to $\sigma = 0.980$, well above the composite $\sigma = 0.428$, an indication that there was inconsistency in the scores. The highest rated social capacity enhancement activity was benchmarking ($\mu = 4.07$; $\sigma = 0.831$) which was to a great extent. The mean is also higher than the composite mean $\mu = 3.71$, which indicates that benchmarking was well factored in the design of CBC projects. The frequencies in Table 4.13 show that 60.1 percent opined benchmarking in more successful communities to improve social learning was adopted in the projects to a great extent while 27.7 percent felt it was done to a very great extent. From the results in Table 4.13, support of community welfare programs was rated as to a great extent ($\mu = 3.87$; $\sigma = 0.980$). Its mean being also higher than the composite mean $\mu = 3.71$, which meant that social capacity enhancement through the support of community welfare programs was well enshrined in the CBC project design. The frequencies show that 41.6 percent of the respondents felt that the projects supported welfare programs that bring cohesion in the community to a great extent while 29.0 percent felt that it was to a very great extent.

For sustainability, the use of indigenous cumulative knowledge by the local community is important in linking conservation and development. The study established the use of traditional knowledge in the projects undertaken. The results from Table 4.13 show that a wider number of the respondents (53.4%) opined that traditional knowledge was to a great extent, while 38.2 percent opined it was to a moderate extent. The mean $\mu = 3.60$ and standard deviation $\sigma = 0.640$ shows that, to a great extent, there was community social capacity empowerment using traditional knowledge in the projects undertaken. The mean is however lower than the composite $\mu = 3.71$, this shows that the use of traditional knowledge in CBC projects though to a great extent was still not to the required level.

The findings in Table 4.13 exhibit that financial capacity enhancement statements ranged from 3.50 to 3.59. Although this was an indication that financial capacity enhancement was integrated in the design of CBC projects to a great extent, the means were all below the composite $\mu = 3.71$. This therefore meant that, financial capacity enhancement was not to the required expectations. The standard deviation of financial capacity enhancement statements ranged from $\sigma = 0.643$ to $\sigma = 0.699$, slightly above the composite $\sigma = 0.428$, an indication of a slight variation in the opinions of the respondents. Access to financial capital in terms of assets for our entrepreneurial activities, $\mu = 3.59$ and $\sigma = 0.643$ was rated the first, where majority (54.6%) had the perception that it was to a great extent and 37.0 percent

opining it was to a moderate extent. Availability of credit facilities for start-ups in the projects was rated the second, where the results showed that 52.9 percent found it to be of great extent and 34.9 percent of the respondents found to be of moderate extent. These results show the presence of credit facilities for start-ups in the projects was to a great extent ($\mu = 3.58$; $\sigma = 0.699$).

Furthermore, findings in Table 4.13 reveal that financial advice being given to the conservancy members came in third, ($\mu = 3.53$; $\sigma = 0.679$) where majority of the respondents (51.7%) perceived it was to a great extent and 37.8 percent of respondents opined that it was to a moderate extent. Market linkages meant to provide a direct market are important financial capacities in the sustainable livelihood framework. The results show that 50.4 percent opined that the projects assisted in marketing local products to a great extent while 38.2 felt it was to a moderate extent. Overall, market integration was ranked fourth with mean $\mu = 3.50$ and standard deviation $\sigma = 0.692$, meaning it was to a great extent. Descriptive analysis results in Table 4.13 show that natural capacity enhancement statements mean ranged from 3.63 to 4.05, an indication that all aspects were included in the CBC project design to a great extent. The standard deviation of natural capacity enhancement statements ranged from $\sigma = 0.612$ to $\sigma = 0.970$, above the composite $\sigma = 0.428$, indicating variation of respondent opinions about natural capital capacity building in place. Water is an important form of natural capital that is essential for the balance of ecosystems.

On whether the design of CBC projects mainstreamed conservation of water sources, the results in Table 4.13 show that it was to great extent, $\mu = 4.05$ and $\sigma = 0.833$. An examination of the frequencies shows that 55.9 percent perceived the CBC initiatives conserved the conservancy water sources was to a great extent while 28.2 percent perceived it was to a very great extent. Table 4.13 results show that natural capacity enhancement through increase of land under conservation had the second highest mean $\mu = 4.00$, $\sigma = 0.970$ which shows that it was to a great extent. The results from the frequencies show that majority of the respondents (47.1%) perceived that the CBC projects sought to increase land under conservation to a great extent and 32.8 percent perceived it was to a very great extent. Ecologically, habitat changes are associated with declines of many species, and the two cannot be separated.

The results in Table 4.13 show that the inclusion of habitat and species recovery activities in the CBC design was rated third and was to a great extent ($\mu = 3.64$; $\sigma = 0.612$) where 56.3 percent opined it was to a great extent, 28.2 percent perceived it was to a very great extent

while 36.6 percent to a moderate extent. Though it was integrated to a great extent ($\mu = 3.64$), the mean was below the composite mean $\mu = 3.71$, which indicates that habitat and species recovery activities were not to the required level. Fourth rated was the zoning of the conservancy land into grazing, conservation, and settlement areas. The frequencies show that majority of the respondents (56.7%) viewed land zonation to have been to a great extent, while 36.1 percent were of the view that it was to a moderate extent. The mean $\mu = 3.63$ and standard deviation $\sigma = 0.628$ indicate that the zonation of the conservancy land was to a great extent. Though zonation was integrated into design to a great extent ($\mu = 3.63$), the mean was below the composite mean $\mu = 3.71$, which indicates that zoning of the conservancy land into grazing, conservation, and settlement areas was below expectations of the respondents.

The descriptive analysis findings in Table 4.13 physical capacity enhancement statements ranged from moderate extent to a great extent. The standard deviation of physical capacity enhancement statements ranged from $\sigma = 0.911$ to $\sigma = 0.941$, well above the composite $\sigma = 0.428$, an indication that respondent opinions about physical capacity enhancement in CBC projects was spread and inconsistent. Provision of buildings for livelihoods and conservation ranked the highest. From Table 4.13, the majority (55.5%) of the respondents felt that provision of buildings for livelihoods and conservation were to a great extent while 20.6 percent felt it was to a very great extent. With a mean $\mu = 3.84$ and standard deviation $\sigma = 0.911$, that was an indication that provision of physical capacity through buildings for livelihoods and conservation was to a great extent factored in the project design. This mean was above the composite mean $\mu = 3.71$, which shows that provision of buildings for livelihood and conservation was well factored in the CBC project design.

It was prudent to find out on the improvement of physical capacity through general infrastructure in the conservancies. Findings tabulated in Table 4.13 reveal that 35.7 percent of the respondents were of the view that improvement of infrastructure in the conservancy area was to a moderate extent, 50.0 percent of the respondents viewed the infrastructure improvements were to a great extent. Overall, the results from Table 4.13 indicate that the projects design factored improvement of infrastructure for conservation and livelihood to a moderate extent ($\mu = 3.39$; $\sigma = 0.929$). This mean ($\mu = 3.39$) is well below the composite mean $\mu = 3.71$, an indicative sign that improvement of infrastructure as a CBC activity was below expectations. It is further evident from the descriptive statistics in Table 4.13 that there was provision of tools and equipment as 35.3 percent opined it was to a moderate

extent, 50.0 percent perceived it to be to a great extent. These results confirm that to a moderate extent, the project design included provision of tools and equipment required for conservation work and community livelihood projects ($\mu = 3.38$; $\sigma = 0.941$). This mean ($\mu = 3.38$) is well below the composite mean $\mu = 3.71$, an indicative sign that provision of tools and equipment required for conservation work and community livelihood projects was below expectations.

The findings of the survey were confirmed and complemented by the qualitative strand of the study. Focused group discussion analysis shows that there was a tangible support towards education sector in the conservancies that could be evidenced through bursaries to the learners, construction, staffing and equipping of schools. From the results of the focused group discussions analysis, human capacity enhancement was through bolstering of local community managerial skills and abilities. Technical training to conservancy management, women, youth, and rangers was cited as the best example. A conservancy chairman said.

“We get trained on livelihood and conservation matters, rangers benefit from training by different institutions, some of them have now achieved Kenya Police Reserve status. Our women groups and youth have had livelihood enterprise training. The community is frequently trained on management of rangelands courtesy of NRT.”

Focused group discussion analysis results point to significant health support in the conservancies through establishment of health facilities and staffing. In addition, analysis of substantiated the survey and focused group discussion results. The review pointed to extensive education support through school facilities, staffing, bursaries, and teacher training. The state of conservancies report, NRT (2017) reports that 1,924 learners received bursaries, and the bursary beneficiaries grew to 3,077 learners in the year 2019 (NRT, 2019). The NRT (2019) reports that the main donor in the five of the sampled conservancies, the NRT established education program office to specifically coordinate on teachers training, school supplies, infrastructure development in schools, bursaries, and conservation education in general. The documents also highlight on the health support accorded to the conservancies through nutrition, family planning and reproductive health training and establishment of health facilities.

The survey results were supported by those from the qualitative strand. Based on the results of the focused group discussion, youths from the conservancies received training of mitigation to rustling to promote inclusion and cohesion and habitat encroachment.

Benchmarking tours for youth women groups for social learning were also conducted to better performing conservancies in other counties. A conservancy manager reported that.

“Last month our youth groups had an exposure trip to Kalama Conservancy in Samburu County, we want to walk the same path as the youth groups there.”

The results show that CBC projects heavily deployed indigenous ecological knowledge in livelihood initiatives and conservation. Analysis of secondary data from the documents shows that benchmarking trips were meant to create awareness on the use of local skills and knowledge for application in CBC project governance. NRT (2019) reports that.

“Traditional council of elders are used making decisions ranging from peace activities to conservation.... So far, since 2016, 450 indigenous leaders completed NRT’s bespoke Leadership and Management Program.”

The NRT (2018) outlines the social capacities that had been enhanced project beneficiaries: 850 women trained in rangeland and peace initiatives; 420 youth trained on community welfare awareness; 120 rangers were trained on human rights. The report further points to empowerment of traditional institutions in the conservancies. Other social capacity initiatives noted from the document review were conservation trips for school going children to inculcate conservation at early ages and a program of peace ambassadors across the conservancies to improve social cohesion. From the analysis of focused group discussion donors operate Conservancy Livelihoods Fund, a reservoir for conservancies to develop proposals on community priorities matters. A manager pointed out that.

“We have a revolving fund to support youth and women startups. My conservancy has utilized three million shillings for livelihood projects from it,”

Further, as a way of financial capital capacity building, donors were reported to have been sourcing a new investor for the Il Ngwesi Ecolodge were negotiations neighbored a deal whose lease was worth Kenya Shillings 26 million. According to the group discussion results, the NRT and the private management of Loisaba Conservancy provided market linkages for the projects such as livestock works, tourism works, and women bead works. The findings from document analysis comport those from focused group discussions. NRT (2019) pointed to the existence of microfinance services and that since 2015, the NRT Conservancy Livelihood Fund had disbursed US\$ 3 million (Kenya Shillings 300 million as the prevailing rates of April 2020). Documents reviewed further pointed to an organized market linkages for local livelihood produce. For example, NRT (2018) points to beef

selling in Nairobi from livestock works projects and slaughtered in Ol Pejeta Conservancy (private conservancy). Furthermore NRT (2019) reports that.

“Bead works generates orders for beaded products from global markets at scale, then works with conservancy women groups to meet these orders.”

Qualitative analysis shows that there were concerted efforts to external investors for the development of ecotourism facilities. This was reported in Il Ngwesi, Naibunga Lower and Lekurruki conservancies.

The qualitative data analysis showed immense effort towards enhancement of natural capital in the CBC projects. This was evidenced by reseeded of rangelands habitats, gully healing, and containing invasive species, especially *Acacia reficiens* and *Opuntia stricta*. A manager pointed out that.

“We have rehabilitated 50 hectares of rangeland in my conservancy through gully healing and reseeded. We also have efforts to eradicate Opuntia.”

The analysis further found out for better conservation and management of resources in community land, there were efforts by government and key conservation stakeholders to assist with registration of community land to enable legal local ownership. The re-introduction of once thriving wildlife species but now locally extinct such as the hirola (*Beatragus hunteri*) and black rhinoceros (*Diceros bicornis*) was noted as important natural capacity enhancement.

Document review showed natural capital enhancement efforts, especially rehabilitation of dilapidated rangeland habitats. NRT (2019) reported that more than 3,000 CBC project members participated in rangelands rehabilitation activities in 2019, to reclaim 7,000 hectares of once productive land where wildlife and cattle grazed. In addition, NRT (2018) published information on land rehabilitation where 1,478 hectares of habitat and grazing land were cleared of invasive species. Other natural capital capacity enhancement measures documented were bunched and seasonal grazing efforts meant to assist in biodiversity regeneration.

Moreover, the analysis of the focussed group discussion corroborates the survey results in the integration of physical capital enhancement in the CBC project design. In Naibunga Lower, Il Ngwesi and Lekurruki conservancies had had renovation of existing tourist facilities while Naibunga Upper and Naibunga Central conservancies had plans for the development of new ones. In addition, the respondents appreciated the donor funded

development and maintenance of ranger facilities. Conservancy rangers were provided with equipment for rangers such as radios, patrol outposts, offices, cameras for monitoring and Global Positioning System (GPS) devices. A manager observed that.

“We have been boosted with by renovation of two tourism facilities in our conservancy. Rangers have been equipped with cameras, GPS gadgets and three outposts constructed to improve out patrolling capacity.”

At the conservancy management level, the qualitative results show that NRT conservancies had been allocated vehicles, with the donors promising to foot the maintenance bill until such a time when conservancies will be self-reliant. From the reviewed documents, physical capacity enhancement was evident; renovation and development of tourist and health facilities was well documented. Infrastructure such as grading of murram roads, upgrading of airstrip runways was also reported. For instance, NRT (2019) reports grading of 160 kilometres of roads and renovation and upgrading of five kilometres of airstrip runways. This physical capital was built for linking local businesses and improving services such as ecotourism. Lekurruki Conservancy Management and Community Development Plan 2016-2020 validates these findings in that plans and resources had been set aside to renovate Tassia ecolodge and its three-kilometre airstrip. To spur regeneration of habitats, NRT (2018) reported that women groups were supplied with 200 bags of *Cenchrus ciliaris* for the purpose of reseeding the rangelands.

4.8.2 Capacity Building of Project Beneficiaries and Performance of CBC Projects

The second objective of the research was meant to ascertain whether capacity building of project beneficiaries and CBC project performance had any relationship. Therefore, correlation analysis using Pearson’s Product Moment technique was conducted to reveal the strength and direction of the association between the capacity building of project beneficiaries and the performance of CBC projects. In addition, the correlation analysis was meant to test hypothesis and make a judgement on the extent to which capacity building of project beneficiaries was related to the performance of CBC projects as reported by the community livelihood project members.

***H0₂:** There is no significant relationship between capacity building of project beneficiaries and performance of community-based conservation projects in Laikipia region.*

From the operationalization of variables in Chapter Three, capacity building of project beneficiaries had been measured using enhancement of human, social, physical, financial,

and natural capitals. However, based on the premises provided by Warmbrod (2014), composite scores of capacity building of project beneficiaries and those of performance of CBC projects were used in both correlation and regression analyses. Correlation analysis results between Capacity Building of Project Beneficiaries and Performance of CBC Projects composite scores are presented in Table 4.14.

Table 4.14: Correlation between Capacity Building of Project Beneficiaries and Performance of CBC Projects

		Composite Capacity Building
Performance of CBC Projects	Pearson Correlation	.727**
	Sig. (2-tailed)	.000
	N	238

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

The findings presented in Table 4.14 depict a strong and positive relationship ($r = 0.727$) between Capacity Building of Project Beneficiaries and Performance of CBC Projects. In addition, at $p = 0.05$, the findings show that the correlation was significant. The null hypothesis was rejected, it was concluded that capacity building of project beneficiaries was statistically and significantly related to performance of CBC projects.

Further, to model prediction of outcome variable surveyed based on the predictor variable, a linear regression analysis was performed. Below is the regression model.

$$Y = a + \beta_1 X_{CP} + e$$

Where: Y = Performance of CBC Projects, a = Constant, β_1 = Beta coefficient

X_{CP} = Capacity building of the project beneficiaries, and e = error term

Table 4.15 depicts regression analysis results summary (Appendix M shows full regression analysis results).

Table 4.15: Regression of Capacity Building of Project Beneficiaries and Performance of CBC Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
	.727 ^a	.529	.527	.31252	.529	264.584	1	236	.000
Model ANOVA		Sum of Squares		df	Mean Square	F	Sig.		
Regression		25.842		1	25.842	264.584	.000 ^b		
Residual		23.050		236	.098				
Total		48.892		237					
Model Coefficients		Unstandardized Coefficients		Std. Error	Beta	t	Sig.		
(Constant)		.883		.177		4.984	.000		
CAPACITYBUILD		.771		.047	.727	16.266	.000		

a. Predictors: CAPACITYBUILDING

b. Dependent Variable: PERFORMANCE

The regression findings in Table 4.15 reveal that $r = 0.727$, suggesting that capacity building of project beneficiaries strongly influenced the CBC project performance. The Model Summary shows that $R^2 = 0.529$ which suggests that 52.9 percent of variation in CBC project performance was explained by capacity building of project beneficiaries, meaning that a variation of 46.1 percent could be due to other factors outside this model. Further, the Model Coefficients showed that the beta value was 0.727, alluding that an increase by one unit of capacity building of project beneficiaries led to an increase of 72.7 percent in performance of CBC projects.

Overall, the Model ANOVA, $F_{(1,236)} = 264.584$ was significant at $p = 0.05$, an indication that this model is effective. Here, the conclusion is that Capacity Building of Project Beneficiaries included in the project design could reliably predict the Performance of CBC Projects in Laikipia conservation region.

Based on these statistical findings, the following is substituted regression model that could predict the Performance of CBC Projects in terms of Capacity building of project beneficiaries.

$$Y = 0.883 + 0.727CP + 0.177$$

Where: Y = Performance of CBC Projects

CP = Capacity building of project beneficiaries

Theory of change, was used to hypothesize that factoring capacity building of project beneficiaries in the project design, would result to change in local community utilization of natural resources. This shows that a project design that includes building the capacity of project beneficiaries is bound to perform. An important CBC project design strategy focusing on conservancies and bolstering respective prevailing capacities to conserve biodiversity and improve local community welfare. The strategy involved harnessing culture such as bee keeping, livestock rearing, and bead works. These results corroborate Adom (2016) that long standing indigenous practices were the best for empowerment in conservation areas.

Furthermore, the study findings reveal that members of the CBC projects chose multiple projects to participate in. Capacity building through the sustainable livelihood framework shows that different demographic and local groups were empowered using different capacities. This explains the many livelihood projects of different sizes littered across the conservancies. These results comport the findings of O'Connell *et al.* (2017) that in accomplishing conservation goals, community groups and individuals ought to be empowered with different capacities.

The study results further concur with those of Wanje *et al.* (2017) in that capacity building of the beneficiaries of a project was an important driver of project success. The performance *in situ* conservation projects greatly relies on capacities of individuals, community groups and organizations involved. Capacity building of project beneficiaries in CBC projects bridges local institutions to increase the capacity of such initiatives and ensure project success. The local needs and priorities take principal place in the customized design of capacity building activities and projects.

The findings are also consistent with participatory development theory (Cornwall, 2006) in that development ideas imposed from outside the local setting were ultimately bound to be counterproductive. The study established that the CBC project design approach placed local community ownership at the core of capacity building. This supports Dawson *et al.* (2021) that local community traditional ecological knowledge should be integrated into higher levels of conservation project decision-making. Traditional institutions were pivotal in the building of capacities of project beneficiaries which centered on the sustainable livelihood framework dimensions. Further, traditional ecological knowledge took the mantle by providing holistic and localized approaches to social and natural capital capacity building and scientific expertise was a complement of the former. This approach transforms local

communities in conservation areas from passive recipients of donor funds into active partners and leaders in natural resource management.

The study found that enhancement of different capacities was instrumental in alternative sustainable livelihoods which give benefits and lead to change of behavior towards exploitive utilization of natural resources. This is in line with Roe *et al.* (2014) found that alternative livelihood projects provided possibilities for attenuating wildlife and habitat threats. The study results show that the design of CBC projects enhanced the capacities of by substituting exploitive practices and replacing them with livelihoods of lesser impact to the environment such as bead works, controlled livestock rearing and bee keeping.

In some instances, some forms of capacity building did not spur positive perception as being a major part of the project design. For instance, the improvement of infrastructure in the conservancy area was found to be to a moderate extent ($\mu = 3.39$). Burgess *et al.* (2001) argued that incentives used in CBC projects to encourage conservation tended to be public goods such as schools, roads, health centers etc. There results therefore comport Newmark and Hough (2000) that the inducements offered to local communities were public goods and therefore not enough to alter individual conduct. Such inducements may even have different effects on diverse groups as evidenced by the perceptions across the different conservancies.

4.9 Analysis of Project Monitoring and Control

Literature showed that CBC project designers are aware that without robust monitoring and control aspects in the design, there lies a risk of pouring considerable resources into ineffective activities that fail to conserve wildlife and empower the local community. This study underscores the need to determine whether a CBC project was meeting design objectives and having a positive conservation and development effect through establishment of standards. The study paid attention to the fact that ongoing performance measurement was necessary to identify the actions leading to the realization of goals based on the conservation and development strategy. Lastly, the study paid attention to the need to use data emanating from performance measurement to evaluate and revise the conceptual model in the conservation efforts. Based on this, the study had established standards, performance measurement and monitoring results utilization as indicators. In the descriptive analysis, the judgment rule was “Not at All” for the values between 1<NA>1.8; “To a little extent” 1.8<LE>2.6; “To a moderate extent” 2.6<ME>3.4; “To a great extent” 3.4<GE>4.2; “To a very great extent” 4.2<VGE>5.0.

Monitoring and control of CBC projects requires the establishment of standards to act as benchmark for measuring performance. Once the project standards are established, actual performance is then measured gathering information on the progress of conservation and livelihood activities and comparing the same with the established standards. In addition, the use of monitoring results as part of CBC project design was investigated. The descriptive analysis results of project monitoring and control presented in Table 4.16.

Table 4.16: Descriptive Analysis of Project Monitoring and Control

Statement	NA %	LE %	ME %	GE %	VGE %	μ	σ
Established Project Standards							
We set goals to be achieved by our CBC project	0	26.5	16.8	47.9	8.8	3.39	.974
We have established baselines for activities	0	2.9	35.7	53.4	8.0	3.66	.666
There are implementations schedules	0.4	5.5	39.1	52.5	2.5	3.51	.661
We hold frequent meetings to review our goals	0.4	21.0	19.7	47.5	11.3	3.48	.962
Project performance measurement							
Data collected to measure progress	0.8	32.8	24.4	39.1	2.9	3.11	.929
We continually record our CBC project progress	0	2.9	34.9	55.9	6.3	3.66	.642
Collected data compared with established baselines	0	5.0	40.3	51.3	3.4	3.53	.647
We hold meetings to discuss the collected project data	0.4	47.5	25.6	20.2	6.3	2.84	.962
Monitoring results utilization							
Project activities changed as recommended by progress meetings	0	2.9	38.2	53.4	5.5	3.61	.638
Collected information used to improve activities	0	4.2	40.3	52.9	2.5	3.54	.620
Future activities informed monitoring and control data	0	33.6	27.3	36.1	2.9	3.08	.901
Composite Mean						3.40	.424
NA = Not at All; LE = To a Little Extent; ME = To a Moderate Extent; GE = To a Great Extent; VGE = To a Very Great Extent; μ = Mean; σ = Standard Deviation							

The results tabulated in Table 4.16 show that project monitoring and control as a project design activity was factored in the design of CBC projects to a moderate extent ($\mu = 3.40$; $\sigma = 0.424$). Based of indicators, the results further show that the means of established standards statements oscillated between 3.39 and 3.66, meaning the establishment of

standards in the CBC project design ranged from moderate extent to a great extent. The standard deviations of the established project standards statements ranged from $\sigma = 0.661$ - $\sigma = 0.974$, above the composite standard deviation of $\sigma = 0.424$. This is an indication that there was incongruity of opinions among the respondents. This shows that the CBC project design included the establishment of project standards by setting specific performance expectations in terms of targets, and goals to improve conservation and the development of the local community.

From the tabulated results in Table 4.16, establishment of baselines was ranked the first, with a mean $\mu = 3.66$ and standard deviation $\sigma = 0.666$, it meant that establishment of baselines for CBC project activities was to a great extent in the conservancies. Majority (53.4%) opined that establishment of baselines for CBC project activities was to a great extent with 35.7 percent of the respondents perceiving it to be to a moderate extent. The mean of “established baselines for activities” statement was higher than the composite mean of $\mu = 3.40$, which shows that baselines of the CBC projects were established satisfactorily. Further, the results in Table 4.16 show that 125 respondents (52.5%) rated the presence of implementations schedules for CBC project activities to be of a great extent whereas 93 respondents (39.1%) rated the same to be of a moderate extent. The mean $\mu = 3.51$ and standard deviation $\sigma = 0.661$ indicate that implementation schedules were used in the projects were to a great extent. The mean ($\mu = 3.51$) was higher than the composite mean ($\mu = 3.40$), which shows that presence of implementations schedules for CBC project activities was done to a considerable degree.

Further, as part of establishment of standards as a basis of monitoring and control, the study set to ascertain the frequency of progress meetings to review the set conservation and development goals. The results from Table 4.16 show that the widely held view by respondents (47.5%) was that to great extent meetings were held review CBC project goals while 11.3 percent opined that it was to a very great extent. The mean $\mu = 3.48$ and standard deviation $\sigma = 0.962$ indicate that frequent meetings to review CBC project initiative goals were held to a great extent. The mean ($\mu = 3.48$) was slightly higher than the composite mean ($\mu = 3.40$), meaning that the design included meetings to review CBC project goals was done to a considerable degree. Lastly, the results show that to a moderate extent, there was setting of project goals ($\mu = 3.39$; $\sigma = 0.974$). Majority of respondents (47.9%) indicated that to a great extent, the CBC projects set the goals to be achieved and 8.8 percent indicated it was to a very great extent. The mean ($\mu = 3.39$) was slightly lower than the composite

mean ($\mu = 3.40$), which shows setting of CBC project goals to be achieved was not to the expectations.

The findings in Table 4.16 indicate that means of the second indicator of project monitoring and control, project performance measurement ranged from 2.84 to 3.66. This signifies that project performance measurement in the CBC projects was from a moderate extent to a great extent. The standard deviations of the project performance measurement statements ranged from $\sigma = 0.642$ - $\sigma = 0.962$, above the composite standard deviation of $\sigma = 0.424$, an indication of inconsistency of opinions among the respondents on this matter. Based on the results, majority (55.9%) were of the view that to a great extent, project progress was continually recorded, and 34.9 percent viewed that it was to a moderate extent. With mean $\mu = 3.66$ and standard deviation $\sigma = 0.642$, the results indicate that to a great extent, project progress was continually recorded. The mean ($\mu = 3.66$) was higher than the composite mean ($\mu = 3.40$), an indication that project progress was continually tracked. For project monitoring and control, comparison of actual project performance and established standards is necessary. The findings in Table 4.16 show that majority of the respondents (51.3%) opined that to a great extent, collected data was compared with established baselines whereas a considerable portion of the respondents, 40.3 percent opined it was to a moderate extent. The results indicate that overall, to a great extent, data were collected and compared with established baselines ($\mu = 3.53$; $\sigma = 0.647$). The mean ($\mu = 3.53$) was higher than the composite mean ($\mu = 3.40$), an indication that data was collected and compared with established baselines for comparison purposes.

Further, the results in Table 4.16 show that the collection of project data for monitoring and control purposes was moderately adopted ($\mu = 3.11$; $\sigma = 0.929$). An examination of the frequencies shows that that 39.1 percent opined that to a great extent, data were collected to measure progress, however, a considerable 32.8 percent opined it was to a little extent and 24.4 percent rated it to a moderate extent. The mean ($\mu = 3.11$) was lower than the composite mean ($\mu = 3.40$), meaning that collection of project data for monitoring and control purposes was not well conducted. The findings show that majority of the respondents (47.5%) opined that progress meetings were held to a little extent while 25.6 percent and 20.2 percent rated such meetings to have been held to a moderate and great extent respectively. With mean $\mu = 2.84$ and standard deviation $\sigma = 0.962$, the results indicate progress meetings to discuss the collected project data were held to a moderate extent. The mean ($\mu = 2.84$) was far lower

than the composite mean ($\mu = 3.40$). This shows that progress meetings to discuss project collected data was not widely implemented in the CBC projects.

Table 4.16 also shows the results of monitoring results utilization as an indicator of project monitoring and control. The descriptive analysis results show that statements about monitoring results utilization had means that ranged from 3.08 to 3.6. This indicated that monitoring results utilization was factored in the CBC projects as part of project monitoring and control from a moderate extent to a great extent. The standard deviations of the monitoring results utilization statements ranged from $\sigma = 0.620$ - $\sigma = 0.901$, above the composite standard deviation of $\sigma = 0.424$. This means that there were inconsistencies of scores from the respondents. From the results, majority of the respondents (127 accounting for 53.3%) believed to a great extent, CBC project activities were changed as recommended by progress meetings while a considerable number of respondents (38.2%) opined that it was to a moderate extent. With mean $\mu = 3.61$ and standard deviation $\sigma = 0.638$, the results show overall, to a great extent, project activities were changed as based on monitoring and control results. The mean ($\mu = 3.61$) was higher than the composite mean ($\mu = 3.40$). This shows that CBC project activities were widely changed as recommended by based on progress meetings.

The findings tabulated in Table 4.16 shows the extent to which information generated from monitoring and control system was used to improve activities. Majority of the respondents (52.9%) opined it was to a great extent while 40.3 percent opined it was to a moderate extent. The results show that overall, collected information was used to improve project activities to a great extent ($\mu = 3.54$; $\sigma = 0.620$). The mean ($\mu = 3.54$) was higher than the composite mean ($\mu = 3.40$) which was an indication that collected information was used to improve CBC project activities. Monitoring and control results should inform future project activities, an indication of organization learning and adaptive management. On future activities being informed monitoring and control, the results in Table 4.16 show that opinions were spread throughout the continuum; 36.1 percent rated future activities being informed monitoring and activities data to a great extent, 33.6 percent opined it was to a little extent while 27.3 percent opined it was to a moderate extent. Overall, the results show that project future activities were to a moderate extent informed by monitoring and control data ($\mu = 3.08$; $\sigma = 0.901$). The mean ($\mu = 3.08$) was lower than the composite mean ($\mu = 3.40$). This shows that future project activities were not necessarily informed monitoring and control activities.

The qualitative strand composed of focused group interview and document analysis failed to yield a lot of information on the monitoring and controlling aspects factored in the conservation projects. Albeit focused group discussion analysis indicated there were meetings that planned activities and discussed the progress achieved. The respondents pointed to the establishment of grazing zones and wildlife zones and their management committees, perhaps indicating that there were set habitat condition standards. The document review indicated that there was a functioning monitoring and control system to measure the impacts of human activities on the ecosystem. For instance, NRT (2019) reported in 2019, the US Forest Service conducted a participatory baseline study and a community monitoring training.

In a departure from the moderate rating of performance measurement seen in the survey results, the qualitative data however points to a well-entrenched performance measurement system in the conservancy projects. Based on the focused group discussion analysis, it was evident that there were numerous meetings held by the CBC project participants, conservancy committees and annual general meetings to review progress. The discussions also pointed to a continuous record keeping by managers. A conservancy chairman said.

“In our community conservancies, we employ conservancy managers whose work is to keep up to date records on the state of habitats, local development through implementation of livelihoods projects and security incidences involving wildlife.”

It was also clear that there was auditing of conservancy finances to ensure prudent use of resources. The document analysis pointed to performance measurement through quarterly progress meetings held to review livelihood and conservation goal implementation and the annual general meetings. Further, NRT (2018) pointed to satellite imagery, a live vegetation monitoring tool an assistance from the US Department of Interior to establish vegetation cover overtime. With assistance from donors, it was evident that a well-planned way of measuring of conservation and development that comprised of vegetation, wildlife monitoring and social monitoring in the conservancies existed.

In the focused group discussions, the respondents pointed out that after quarterly progress meetings, there was implementation of suggestions and resolutions to realign activities of the projects to realize conservation and development goals. One manager explained that.

“We have held all quarterly progress meetings of the year 2019 and the Annual General Meeting. We are currently implementing suggestions from meetings to improve on chances of promoting conservation and empowering our people.”

This statement alludes to the fact that there was setting of standards and progress to achieve them was measured by members in meetings and recommendations utilized in aligning the resources to achieve goals. The reviewed documents corroborated the findings from the focused group interview. The annual reports and conservancy reports attested to the fact that there was realignment of project activities based on the suggestions and resolutions of the progress meetings. Further, based on habitat monitoring results, there were efforts directed towards rehabilitation and reintroduction of wildlife species.

Despite the average rating of project monitoring and control indicators in the quantitative strand, qualitative analysis pointed to a robust monitoring system in the CBC projects. The focused group discussions pointed to frequent status review meetings and other scheduled events meant to exchange information about the CBC projects. A conservancy chairman pointed out that.

“Our quarterly meetings are very important for the conservancy. We get updates from the conservancy manager on conservation and livelihood activities, we review the schedule status and get our budget status update.”

In addition, the document analysis confirms the monitoring and control aspect. For instance, NRT (2019) points out to a well customized monitoring system using innovative tools. It explains one of the tools used as follows.

“The Conservancy Management Monitoring System (CoMMS) is a simple, cost-effective way for conservancies to collect and monitor trends in wildlife behavior, illegal activities, wildlife mortality and human wildlife conflict.”

There seems to exist a discrepancy between the results of the quantitative strand and the qualitative strand on the level of monitoring and control entrenched in CBC projects in the conservancies. This could be attributed to the fact that monitoring and control was mostly a management function or that CBC project members were not fully involved in monitoring.

4.9.2 Monitoring and Control and Performance of CBC Projects

The third research objective was to establish the extent of the relationship between monitoring and control and the performance of community-based conservation projects in

Laikipia region. Correlation analysis using Pearson’s Product Moment technique was performed to reveal the relationship between composite index of performance of CBC projects (dependent variable) and the composite index of monitoring and control (independent variable). As per the objective, the association between monitoring and control and the performance of CBC projects as reported by the community livelihood project members was tested in the following hypothesis.

H0₃: There is no significant relationship between monitoring and control and performance of community-based conservation projects in Laikipia region.

Following the conducted correlation analysis, Table 4.17 presents these results.

Table 4.17: Correlation between Monitoring and Control and Performance of CBC Projects

		Composite Project Monitoring and Control
Performance of CBC Projects	Pearson Correlation	.380**
	Sig. (2-tailed)	.000
	N	238

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

The results of the correlation analysis in Table 4.17 indicate moderate and positive correlation between performance of CBC projects and monitoring and control, $r = 0.380$. The correlation was significant and moderate at $p = 0.05$ implying that monitoring and control was statistically related to the performance of CBC projects in Laikipia region. Based on these findings, the null hypothesis (**H₀**) was rejected and hence conclusion that at 0.05 level of significance, there is a significant relationship between monitoring and control and performance of CBC projects in Laikipia region.

Moreover, simple linear regression analysis was performed to ascertain the influence that monitoring, and control had on the performance of CBC projects. Composite index of the dependent variable and the composite index of the predictor variable (monitoring and control) were used. This was meant to model and predict CBC project performance in terms of monitoring and control. The linear regression model was.

$$Y = a + \beta_1 X_{MC} + e$$

Where: **Y**= Performance of CBC Projects, **a** = Constant, **β₁**= Beta coefficient
X_{MC} = Monitoring and Control and, **e** = error term

Table 4.18 summarizes the results realised from the regression analysis. (Appendix N shows full regression analysis results).

Table 4.18: Regression of Influence of Monitoring and Control on Performance of CBC Projects

Model	R	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Sig. F Change		
				R Square Change	F Change	df1			
	.380 ^a	.145	.141	.42099	.145	39.870	1	236	.000

Model ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.066	1	7.066	39.870	.000 ^b
Residual	41.826	236	.177		
Total	48.892	237			

Model Coefficients	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	2.361	.221			10.687	.000
MONITORING	.407	.064	.380		6.314	.000

a. Predictors: MONITORING

b. Dependent Variable: PERFORMANCE

From the Model Summary findings in Table 4.18, $r = 0.380$, an indication that monitoring and control moderately and positively influenced the performance of CBC projects. R^2 on the other hand = 0.145, suggesting that monitoring and control explained 14.5 percent variation in performance of CBC projects which in turn meant that 85.5% of variation in the performance of CBC projects caused by other factors not found in the model. This means monitoring and control though positively related to performance of CBC project, did not have a major influence on the latter. The beta value of 0.380 from the Model Coefficients meant that a unit increase in monitoring and control in the CBC project design contributed to 38 percent increase in performance of CBC projects.

The F ratio in the Model ANOVA was statistically significant since $F_{(1,236)} = 39.870$ at $p = 0.05$, meaning that monitoring and control effort mainstreamed in the project design could still be used to predict the performance of CBC projects in Laikipia conservation region.

Based on these statistical findings, the following is substituted regression model that could predict the Performance of CBC Projects in terms of Monitoring and Control.

$$Y = 2.361 + 0.380MC + 0.221$$

Where: Y = Performance of CBC Projects

MC = Monitoring and Control

The results show that monitoring and control was integrated in the design of CBC projects to moderate extent ($\mu = 3.4018$). The correlation between monitoring and control and performance of CBC projects ($r = 0.380$) was a moderate one. The findings of the study support the assertions of Stephenson (2019) that conservation project monitoring and control was inadequate due to weaknesses of capacity, plans, indicators, and had been always short-lived. The findings of the study are further on concurrence with Stem *et al.* (2005) that monitoring in conservation mostly yields mixed results and in addition, monitoring and control was not widely adopted across the sampled conservancies, further, the results concur with Horwich and Lyon (2007) who decried of inadequate monitoring and controlling in conservation projects and argued that the impasse had led to a deficiency of lessons learnt about CBC management and ensuing impacts.

Albeit the findings, the results show that there was an effort to measure conservation project progress to pinpoint progress or constraints. These results agree with FFI (2014) in that a well-designed project monitoring and controlling was essential in conservation to give feedback and as a basis of conservation decisions. Conservation projects operate in an environment full of complex dynamics and managers need a stream of information on projects. This is in line with Craigie *et al.* (2015) who opined that protected area managers often desired better information that could inform their management decisions.

The study findings were also in harmony with Marcia *et al.* (2014) in that conservation project monitoring and controlling had a complementary role to play in advancing more informed conservation practices. This is evidenced by the changing of standards based on the progress meetings and the continued recording of all conservancy activities by the conservancy managers for discussion in the board meetings. It also concurs with Acebes *et al.* (2014) on comparison of the baseline with the actual project results to identify deviations and activate early corrective actions in terms of change if needed. The results are further in concurrence with World Bank (1998) in that project monitoring was meant to collect data that were analysed to pinpoint progress or constraints.

The results pointed to the fact that monitoring and control involved collection of data on wildlife species, habitats, local community welfare, and the project resources. This is in concurrence with Guerra *et al.* (2019), that conservation project monitoring required integrated data approaches that comprised of a broader depiction and enumeration of social-

ecological structures and optimizing of operational resources. Further, the design of the CBC projects gives the bulk of the monitoring and controlling of conservation project and livelihood initiatives to the local community for sustainability. This is in line with participatory development theory (Cornwall, 2006). The study findings further agree with Sheil *et al.* (2015) in that monitoring and control by local community underwrites effective protection and dissuades unregulated exploitation. This is because it created a sense of ownership of the natural resources.

4.10 Analysis of Stakeholder Engagement

Engagement of stakeholders is ranked as an essential ingredient for successful project delivery. Engaging local stakeholders prominently feature of CBC projects and other biodiversity conservation projects. The study set to find out to what extent the local community were engaged as primary stakeholders in the CBC project design. The engagement was measured through finding out the extent of inclusion of the community in the design of the project; the integration of local values through recognition of indigenous knowledge, cultures, and traditional practices; and public participation in all facets of the project and its design. The descriptive results were interpreted based in the following judgment rule; “Not at All” for the values between 1<NA>1.8; “To a little extent” 1.8<LE>2.6; “To a moderate extent” 2.6<ME>3.4; “To a great extent” 3.4<GE>4.2; “To a very great extent” 4.2<VGE>5.0.

From the participatory development theory, the inclusion of local stakeholders is meant to specifically target and consider local opinions for shared ownership and acceptance of the project and pragmatic reasons of maximizing societal benefits. Moreover, use of local values in conservation projects presents a unique opportunity of increasing information base, improving effectiveness and efficiency, and adds local dynamics and perspectives. Lastly, CBC approach and development devolves conservation and local development to the local beneficiaries. The theories used in this study, the theory of change, the theory of participatory development and the stakeholder theory advocate for public participation in community projects. To achieve performance, the complexity of CBC projects renders local community participation indispensable. Participation ensures the views of all stakeholders are integrated into project decision-making, creating openness and dialogues from the outset of the project. In addition, stakeholder participation is an increasingly accepted component of environmental and rural development planning processes.

Table 4.19 gives the results of descriptive statistics results of stakeholder engagement in the design of CBC projects in Laikipia conservation region.

Table 4.19: Descriptive Analysis of Stakeholder Engagement

Statement	NA %	LE %	ME %	GE %	VGE %	μ	σ
Inclusion of Local Stakeholders							
We run the projects in the conservancy	0	4.2	30.3	54.6	10.9	3.72	.711
I was involved in assessment of needs	0	7.1	30.3	51.7	10.9	3.66	.766
I am included in decision making	0.4	4.6	34.5	50.8	9.7	3.65	.736
Projects are based on our local livelihood priorities	1.3	18.1	22.7	48.7	9.2	3.47	.935
Locals give the impetus of the CBC projects in the conservancy	3.8	17.2	21.4	49.2	8.4	3.41	.993
Local values integration							
Traditional knowledge is integrated in the project	0	3.4	32.8	52.1	11.8	3.72	.711
Conservancy team welcomes ideas from me	0	3.8	33.6	51.7	10.9	3.70	.712
Conservancy pays attention to our local ideas	0	2.9%	28.6	53.4	15.1	3.81	.721
The conservancy meets our values as a community	0	10.1	18.1	49.6	22.3	3.84	.886
Public participation							
I participate in implementation of project activities	0	8.0	30.3	52.1	9.7	3.63	.766
Conservancy projects leadership is by our local people	0	3.8	32.8	54.6	8.8	3.68	.685
Participation makes me feel that we are in control of the project	2.1	21.8	25.2	48.3	2.5	3.27	.903
Participation in the project makes me feel my effort is appreciated	1.3	19.3	24.8	52.1	2.5	3.35	.863
Through our project, we oversee our resources	0.4	19.7	20.6	58.0	1.3	3.40	.830
We participate in setting rules on the use of the local resources	0	4.2	32.4	54.2	9.2	3.68	.698
Composite Mean						3.60	.408
NA = Not at All; LE = To a Little Extent; ME = To a Moderate Extent; GE = To a Great Extent; VGE = To a Very Great Extent; μ = Mean; σ = Standard Deviation							

The results displayed in Table 4.19 show that overall, stakeholder engagement project design activity had a composite mean $\mu = 3.60$ and standard deviation $\sigma = 0.408$. This indicates that local stakeholder engagement was factored in the design of CBC projects to a great extent as mean $\mu = 3.4 < GE > 4.2$. From the results in Table 4.19, statements of inclusion of local stakeholder's cluster had means that ranged from 3.41 to 3.72 meaning local

stakeholders were included in the CBC project design to a great extent. Despite being to a great extent, inclusion of local stakeholder statements had standard deviations that ranged from $\sigma = 0.711$ - $\sigma = 0.993$, above composite standard deviation $\sigma = 0.408$. This means that there was inconsistency of scores across the sample. The descriptive analysis results in Table 4.19 show that local community was included in the running of the projects in the conservancy to a great extent ($\mu = 3.72$; $\sigma = 0.711$). On examining the frequencies in Table 4.19, majority of the respondents (54.6%) agreed that to a great extent, the local community was running the projects in the conservancies however to 30.3 percent, opined it was to a moderate extent. Local community was included in the running of the projects had a mean $\mu = 3.72$ which was above the composite mean $\mu = 3.60$, meaning that it was to a satisfactory level.

Further, from Table 4.19, with a mean $\mu = 3.66$ and standard deviation $\sigma = 0.766$, the results show that the local community was included in the conservancy projects' needs assessment to a great extent. The frequencies are however spread along the ranks as 30.3 percent opined that inclusion in needs assessment was to a moderate extent, majority, and 51.7 percent opined it was to great extent while 10.9 percent opined that it was to a very great extent. Moreover, involvement in CBC project needs assessment had a mean $\mu = 3.66$ which was above the composite mean $\mu = 3.60$. This is an indicative that the project design of CBC projects meaningfully involved the local community in needs assessment.

The findings in Table 4.19 show the importance of inclusive decision making in projects as it activated the power of diversity, majority of the respondents (50.8%) agreed that to a great extent, local stakeholders were included in project decision making while 9.2 percent viewed that it was to a great extent and 34.5 percent viewed it was to a moderate extent. Overall, the results show that the local community was included in decision making in the projects to a great extent ($\mu = 3.65$; $\sigma = 0.736$). Inclusive decision making in the CBC projects had a mean $\mu = 3.65$ which was above the composite mean $\mu = 3.60$. This is an indicative that the project design meaningfully engaged the local community in the decision-making level.

Critics of CBC project design and planning argue that the projects were based on wrong assumptions of local livelihood strategies and that the projects did not focus on the values and goals, choices, and activities which mattered to local people. The results in Table 4.19 however show that the projects in Laikipia conservation region were to a great extent ($\mu =$

3.47; $\sigma = 0.935$) based on local livelihood priorities and therefore ensuring that the projects reflected the real local needs. The frequencies of the prioritization of local livelihoods show that 48.7 percent perceived that it was to a great extent and 22.7 percent were of the view that it was to a moderate extent. However, prioritization of CBC projects to local livelihood needs had a mean $\mu = 3.47$, lower than the composite mean $\mu = 3.60$. Although it was to a great extent, this means that, in some instances, CBC projects did not prioritize local livelihood needs. Lastly, the results in Table 4.19 show that local community approved the projects in the conservancy to a great extent ($\mu = 3.41$; $\sigma = 0.993$). The frequencies show that 21.4 percent to a moderate extent approved of the projects in the conservancy and majority of the respondents, 49.2 percent approved the projects to a great extent. The impetus of the CBC projects by the local community had a mean $\mu = 3.41$, which was lower than the composite mean $\mu = 3.60$. Although it was to a great extent, not all CBC projects could have been due to impetus of the local community.

The results presented in Table 4.19 show that statements of local values integration cluster had means that ranged from 3.70 to 3.84, revealing that they were integrated in CBC project design to a great extent. The means of all local values integration were $\mu = 3.70$ to $\mu = 3.84$, well above the composite mean $\mu = 3.60$. This confirms the centrality of local community values in CBC project design as a bottom-up conservation and development approach. However, the standard deviations of the statements ranged from $\sigma = 0.711$ - $\sigma = 0.886$, above the composite standard deviation $\sigma = 0.408$. This means that there was inconsistency of scores across the sample and not all agreed with the statements. The results show that conservancy projects meeting of local community values emerged as the highest ranked indicator, where it was to a great extent ($\mu = 3.84$; $\sigma = 0.886$). Majority of the respondents viewed that the projects in the conservancies met the values of the local community (49.6% to a great extent and 22.3% to a very great extent).

Based on Table 4.19 tabulated results, it is evident that the conservancy projects payment of attention to local community ideas was rated second and was to great extent ($\mu = 3.81$; $\sigma = 0.721$). The frequencies show that majority (53.4%) opined projects were attentive to local ideas to a great extent and 15.1 percent opined it was to a very great extent and a considerable 28.6 percent believed it was to a moderate extent. Meaningfully integrating of traditional ecological knowledge practices, and beliefs in CBC projects is a significant determinant of conservation and local development success. Traditional ecological knowledge practices may improve resource management and integrating it with scientific

knowledge can deliver even better results. As an indicator of local values integration, 52.1 percent of the respondents (majority) opined that traditional knowledge was integrated in the conservancy projects to a great extent while 32.8 percent opined the integration was moderate.

The results in Table 4.19 highlight the importance of indigenous traditional knowledge and practices to conservation and local development since it had a mean $\mu = 3.72$ and standard deviation $\sigma = 0.711$, suggesting that it was to a great extent. Based on the notion of integration of local values, CBC projects offer prospects for indigenous individuals to enhance local perspectives. To this end, majority (51.7%) of the respondents opined that to a great extent, conservancy teams welcomed their ideas and 33.6 percent opined it was moderate. With a mean $\mu = 3.70$ and standard deviation $\sigma = 0.712$, the results show that conservancy management welcomed ideas from members to a great extent.

Table 4.19 results reveal the means for public participation cluster statements ranged from 3.27 to 3.68, an indication that they were featured in the design of CBC projects ranging from a moderate extent to a great extent. Three statements; participation in implementation of project activities, conservancy projects leadership being by our locals and people and local involvement in the setting rules on local resources use had means above the composite mean $\mu = 3.60$ and were therefore deemed to have been well factored in the CBC project design. However, participation makes local be in control of the project, participation that makes locals feel appreciated and the local community being the overseers of the project resources had means lower than the composite mean $\mu = 3.60$ and were therefore deemed to have been not satisfactory in some sections of the population. An examination of the findings in Table 4.19 suggests that local community leadership played a principal role in grassroot conservation and development initiatives. The findings show that to a great extent ($\mu = 3.68$; $\sigma = 0.685$) conservancy projects were led by locals, and majority of the respondents (54.6%) viewed leadership by locals to be to a great extent and 32.8 percent viewed that it to be to a moderate extent. There is significance of active local participation in governance of resources as a channel of building trust and elevating the voices of the local community, a recipe for project sustainability.

Furthermore, the findings depicted in Table 4.19 show that the bigger portion of the respondents (54.2%) viewed that to a great extent, the community participated in setting rules on the use of the local resources while 32.4 percent viewed that participation of the community in setting rules on resource use was to a moderate extent. Overall, the results in

Table 4.19 indicate that community participation in project governance through setting of resource use rules was to a great extent ($\mu = 3.68$; $\sigma = 0.698$). On participation in implementation of project activities, 52.1 percent of the respondents viewed it was to a great extent with 30.3 percent being of the view that it was to a moderate extent. In general, with a mean $\mu = 3.63$ and standard deviation $\sigma = 0.766$, the results indicate that the community members to a great extent, participated in day-to-day implementation of project activities.

Integrated conservation and development projects achieve sustainability performance if the local community manages biodiversity and are in the driving seat of the rural development initiatives. From the results in Table 4.19, majority of the respondents (58.0%) opined that to a great extent, through their projects, they oversaw the local resources. However, a considerable portion held different views, 20.6 percent opined that through their projects, they oversaw the local resources to a moderate extent and 19.7 percent perceived it was to a little extent. Overall, a mean $\mu = 3.40$ and standard deviation $\sigma = 0.830$ indicated that members were only in charge of the local resources to a moderate extent. The results show that participation in the project activities made members feel appreciated to a moderate extent ($\mu = 3.35$; $\sigma = 0.863$), with majority (52.1%) being of the view that participation in the activities made them feel appreciated to a great extent while 24.8 percent opining it was to a moderate extent and 19.3 percent opining it was to a little extent. Lastly, on whether respondents felt in control of their projects because of participation, mean and standard deviation indicate that it was to a moderate extent ($\mu = 3.27$; $\sigma = 0.903$). The in Table 4.36, frequencies show that 48.3 percent (majority) opined that the respondents felt that they were in control of their projects because of participation to great extent, but 25.2 percent and 21.8 percent respectively opined it was to a moderate and little extent.

From the interviews, and the document analysis, inclusion of local stakeholders was well factored in the design of CBC projects. Respondents indicated that the community was supreme in the whole project cycle from project identification, needs assessment, and implementation of the CBC projects. The results show that the CBC projects portrayed engagement of people centered approach level where institutions were empowered and where none existed, local institutions were constituted and empowered. The focused group discussion confirmed that the CBC project design was set in a way to not only engage the community, but also recognize the input of several groupings in the study area. There were sentiments like.

“Conservation and development matters in the meeting are decided by the community. Youth, women, and livelihood groups chart the way forward. In 2019, the members identified six sites where Opuntia was to be eradicated.”

Also, that.

“There are community forums for discussing conservation and livelihood projects matters. The community is at the top of the conservancy structure, above the board, we are their representatives.”

This is a prove that based on participatory theory, CBC project design discarded the conventional top-down conservation planning approach and embraced bottom-up approach to realize sustainable conservation and local development goals. This is happening with the local community being at the center of it all.

The documents reviewed comport these results as they portray the principal decision maker in CBC projects to be the local community. The review of the documents further confirms inclusivity, equality, and diversity was key in the engagement of local community. Demographic groupings such as youth, women, and elders were all engaged at different levels. In Il Ngwesi conservancy, Nganga, and Robinson (2018) reported that all community groups are involved in the CBC project cycle. Furthermore, Lekurruki and Naibunga Conservancy Management and Community Development Plans had integrated community as part of planning, monitoring and evaluation using village forums as the gateway of engagement. The Conservancy Plans show that expenditure decisions were made in annual general meetings where all members were present. According to theory of change, local community inclusion in CBC projects resulted to better decisions that met the needs of the local people, which then translates to improved quality of life. The consideration of the issue as widely as possible, improvements in local community socio-economic conditions and the environment can occur at the same time.

Data gathered from focused group discussions and documents analysis for triangulation purposes gave critical importance to local values integration into CBC project design. The respondents of the group discussion concurred that there was integration of local values in the CBC projects, arguing that local culture provided opportunities that reinforced conservation and community welfare. For instance, local members constitute the conservancy boards, which govern the CBC project and members also form grazing committees. These forums afford the community platforms that combine scientific information and indigenous knowledge in managing grazing in different seasons and

sustaining grass-banks for severe arid situations. Indigenous economic activities such as beading by women, bee keeping, and cattle rearing are integrated in the CBC project design. One conservancy chairman lamented that.

“Local traditions guide our livelihood activities. Donors and experts just bring western ideas to complement our indigenous knowledge.”

Information from documents that were reviewed gave evidence that local culture’s latent contributions to conservation of biodiversity and development space. The reports confirmed that expert knowledge complemented local knowledge in the design and implementation of CBC projects. Practices of bunched grazing heavily borrowed from local Maasai pastoralist culture while women beading was simple transformed to an economic activity by expert knowledge in market integration.

Furthermore, the qualitative strand highlighted local community participation in the CBC projects. Results of the analysis show that community members collectively decided on conservation and livelihood activities. There were statements like.

“Conservancy board’s work is coordination; the group members decide the activities we undertake, and our donors are keen on that.”

A manager of a conservancy observed that.

“Many meetings are held with community members. It is the community that decides on way forward, we are not allowed to dictate ideas on them.”

Stakeholder participation was demonstrated women, finance, grazing and tourism mandated committees put in place to coordinate and monitor the affiliated livelihood projects. Focused group discussion respondents also admitted that there were other forums organized to deliberate on conservation and community livelihood affairs in cases of need. These committees are participatory avenues that CBC project design integrated to ensure entrenchment of bottom-up approach in conservation and development matters.

Based on the document analysis, the conservancy reports and plans all show that CBC project design embraced participatory management of the local natural resources and contribution of local community in planning and execution of livelihood initiatives. Annual state of the conservancies’ report, the NRT (2016) reports that the local community participated in planning, management, and resource use. The NRT (2018), reports that beneficiaries took the expenditure decisions of alternative livelihood project to reflect local priorities. Moreover, NRT (2019) participatory monitoring and evaluation where village

committees were empowered to conduct. Lekurruki Conservancy Management and Community Development Plan 2016-2020 gives prominence to involvement of CBC project members in all planning and implementation activities. A keen observation of the state of conservancies' reports showed that the number of community members participating in the projects had been increasing from 2016 through to 2019.

4.10.2 Stakeholder Engagement and Performance of CBC Projects

The fourth research objective purposed to examine whether stakeholder engagement was related to CBC project performance. The relationship's strength and direction were determined using Pearson product-moment correlation. The correlation test was also used to judge the plausibility of the study hypothesis **H04**.

H04: There is no significant relationship between stakeholder engagement and performance of community-based conservation projects in Laikipia region.

The correlation analysis results were as displayed in Table 4.20.

Table 4.20: Corelation between Stakeholder Engagement and Performance of CBC Projects

		Composite Stakeholder Engagement
Performance of CBC Projects	Pearson Correlation	.641**
	Sig. (2-tailed)	.000
	N	238

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

The findings from Table 4.20, show that stakeholder engagement positively and strongly correlated with CBC project performance ($r = 0.641$). In addition, at $p = 0.05$, the correlation between the two variables was statistically significant. The results provided evidence a significant relationship existed between stakeholder engagement and CBC project performance in Laikipia region, and therefore, the null hypothesis (**H40**) was rejected.

Since stakeholder engagement was significantly related to the performance of CBC projects, a simple linear regression analysis was run to model the prediction of CBC Project Performance using Stakeholder Engagement. The model was.

$$Y = a + \beta_1 X_{ST} + e$$

Where: Y = Performance of CBC Projects, a = Constant, β_1 = Beta coefficient
 X_{ST} = Stakeholder Engagement, and e = error term

Table 4.21 depicts the regression analysis summary. (Appendix O shows full regression analysis results).

Table 4.21: Regression Results of the Influence of Stakeholder Engagement on Performance of CBC Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Sig. F Change	
					R Square Change	F Change	df1		df2
	.641 ^a	.410	.408	.34954	.410	164.169	1	236	.000
Model ANOVA		Sum of Squares	df	Mean Square	F	Sig.			
Regression		20.058	1	20.058	164.169	.000 ^b			
Residual		28.834	236	.122					
Total		48.892	237						
Model Coefficients	Unstandardized Coefficients		Standardized Coefficients		t	Sig.			
	B	Std. Error	Beta						
(Constant)		1.177	.202		5.834	.000			
STAKEHOLDER		.713	.056	.641	12.813	.000			

a. Predictors: STAKEHOLDER

b. Dependent Variable: PERFORMANCE

The regression analysis findings in Table 4.21, show that $r = 0.641$, an indication that stakeholder engagement had a strong and a positive influence on CBC project performance. From the Model Summary presented, $R^2 = 0.410$, illustrating that stakeholder engagement explained 41.0 percent change in CBC project performance, an indication that 59.0 percent of change in CBC project performance could be attributed to other factors outside the statistical model. The beta value derived from the Model Coefficients is 0.641, meaning that a unit increase in stakeholder engagement contributed 64.1 percent increase in CBC project performance.

The results in Table 4.21 also show the F ratio $F_{(1,236)} = 164.169$ was statistically significant at $p = 0.05$ suggesting that performance of CBC projects in Laikipia conservation region could reliably be predicted based on the level of stakeholder engagement included in the project design.

Further, based on these statistical findings, the substituted regression model that could be used to predict the performance of CBC projects in terms of Stakeholder Engagement was as follows.

$$Y = 1.177 + 0.641ST + 0.202$$

Where: **Y** = Performance of CBC Projects
ST = Stakeholder Engagement

Stakeholder engagement is a wide concept, it can range from passive engagement from one end to collaborative partnership in the other end of the continuum. This study found that to a great extent ($\mu = 3.63$), the local members of the community participated in CBC project implementation. The research further found that the local community lead their own CBC projects with little external expertise assistance. These findings are in line Type III with FAO (2003), the group formation level, the highest level of beneficiary engagement. The CBC projects in Laikipia conservation region build and reinforced existing beneficiary institutions to conserve biodiversity and improve local community welfare. The results concur with Muhumuza and Balkwill (2013) in that, engaging stakeholders in CBC projects enhanced the prospects stakeholder satisfaction with project and its outcomes. The design of the CBC projects was choreographed such that the community was granted access to resources while allowing participation through indigenous knowledge input. In addition, Type III engagement, continuous participation of the local stakeholders is well structured and guaranteed.

Moreover, the findings of the study show that local stakeholder inclusion was factored in the CBC project design. The study found that to a great extent ($\mu = 3.65$), local community was included in decision making, and local gave the impetus of the CBC projects, including participation in needs assessment. The findings concur with Bouamrane *et al.* (2016) findings that engaging stakeholders in the conception phases of conservation projects was key to fostering the knowhow for the achievement sustainable development. The results concur with Aga *et al.* (2018) who found that inclusion of beneficiaries in project planning and design significantly influenced behaviour towards the project and its results. The results show that to a great extent ($\mu = 3.47$), CBC projects were centred on local community priorities. The results mirror those of Dawson *et al.* (2021) in that, positive outcomes in projects were realised in situations where the local community was incorporated in project decisions at all levels and phases.

The findings revealed that the integration of local community values was given prominence in CBC projects. External expertise knowledge was only brought in to complement indigenous knowledge systems. Traditional ecological knowledge was used to shape grazing patterns, it informed the rangeland reclamation initiatives and in some cases like

cattle rearing and beading, the activities became livelihood projects. This comports Dawson *et al.* (2021) findings and confirms that communities are bound to the natural resources around them and have always conserved biodiversity over long timescales. Moreover, the results agree with those of Cebrian-Piqueras *et al.* (2020) whose multi-variate analysis results showed that traditional knowledge was key in conservation projects as it improved provision of ecosystem services and social-ecological system resilience.

These findings are also shown that CBC project design puts the local community at the centre of biodiversity conservation and local development. The community is engaged to empower them and realise shared ownership. These results support those of Shereni and Saarinen (2021) in that negative perceptions in CBC projects occur in cases where the local community is not engaged in decision making. Moreover, the results agree with Adom (2016) that indigenous knowledge systems are rich and could be harnessed and blended with modern conservation methods to preserve biodiversity resources in the environment.

CBC projects are criticised for wrong notions on the local community priorities and concerns. Results in this study reveal that CBC projects were to a great extent ($\mu = 3.47$) based on livelihood priorities of the local community. The results of this study have therefore proved that with the right stakeholder engagement mechanism, CBC projects can elevate the priorities and concerns of the local community. The findings are in concurrence with Eskerod *et al.* (2015) incorporation of stakeholder needs is a strategy that establishments can utilize to ensure project performance and sustainability. Communities living in conservation areas bear the brunt of living alongside wildlife. This calls for conservation and development programs targeting such communities to empower and prioritise community needs.

4.11 Analysis of Joint Project Design Activities

In this study, Joint Project Design was the combination of project design activities, namely, scope determination, capacity building of project beneficiaries, project monitoring and control and stakeholder engagement. The joint influence of these factors on performance of CBC projects is tested using descriptive and inferential statistics in this section.

To establish the joint influence of project design activities on the performance of CBC projects, each category's composite means were computed to offer a descriptive analysis of the variables and then comparisons were conducted. In the descriptive analysis, the judgment rule was "Not at All" for the values between 1<NA>1.8; "To a little extent"

1.8<LE>2.6; “To a moderate extent” 2.6<ME>3.4; “To a great extent” 3.4<GE>4.2; “To a very great extent” 4.2<VGE>5.0.

Table 4.22: Descriptive Analysis of Joint Project Design Activities

Variable	n	Min	Max	μ	σ
Scope Determination	238	2.08	4.83	3.66	.548
Capacity building of project beneficiaries	238	2.06	4.82	3.71	.428
Project monitoring and control	238	2.00	4.36	3.40	.424
Stakeholder engagement	238	2.20	4.53	3.60	.408
Composite Mean	238	2.38	4.39	3.59	.339

n = Sample Size; μ = Mean; σ = Standard Deviation

The means, as shown in Table 4.22 ranged from 3.40 to 3.71, indicating that all project design activities were integrated in the design of CBC projects to a great extent as all means were within 3.4<GE>4.2. Scope determination, capacity building of project beneficiaries and stakeholder engagements had means above the composite mean $\mu = 3.59$, an indication that these project design activities were factored in the design of CBC projects and therefore contributed to the performance of CBC projects. Project monitoring and control however had a mean ($\mu = 3.40$) that was lower than the composite mean $\mu = 3.59$, which shows that it was not integrated in the project design to the expected level.

The results presented in Table 4.22 illustrate that capacity building of project beneficiaries was the design activity that ranked the highest; mean $\mu = 3.71$ and standard deviation $\sigma = 0.428$ meaning it was included in the design of CBC project to a great extent. Scope determination came in second; mean $\mu = 3.66$ and standard deviation $\sigma = 0.548$, indicating that the respondents agreed that the CBC project design in Laikipia conservation factored determination of scope into the CBC projects to a great extent. The third project design activity was stakeholder engagement, the mean $\mu = 3.60$ and standard deviation $\sigma = 0.407$ shows that to a great extent, the CBC project design factored the engagement of local community stakeholders. Fourth ranked was the project monitoring and control, the mean $\mu = 3.40$ and standard deviation $\sigma = 0.424$ was an indication that it was factored to the CBC project design to a great extent.

From Table 4.22, the composite mean of joint project design activities was $\mu = 3.59$ and standard deviation $\sigma = 0.339$. This means that project design activities in the study were factored in the design of CBC projects to a great extent as the value was within the range 3.4<GE>4.2. Gauged using a five-point Likert Scale, this is just above average level, an

indication that there was a room for improvement to factor these project design activities in CBC projects that link conservation and development.

4.11.1 Project Design Activities and Performance of CBC Projects

The fifth research objective was meant to establish whether Project Design Activities were related to the performance of CBC projects in Laikipia conservation region. To ascertain the strength and direction of the relationship between project design activities and the performance of CBC projects, correlational analysis using Pearson’s Product Moment technique was performed. To achieve this objective, the study had purposed to establish the relationship that joint project design activities had with the performance CBC projects. This was to be done based on the following hypotheses:

H0₅: There is no significant relationship between joint project design activities and performance of community-based conservation projects in Laikipia region.

The results of the analysis are depicted in the correlation matrix in Table 4.23.

Table 4:23: Correlation between Project Design Activities and Performance of CBC Projects Correlation Matrix

		Composite Project Design Activities
Performance of CBC Projects	Pearson Correlation	.761**
	Sig. (2-tailed)	.000
	N	238

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

Correlation results in Table 4.23, indicate a strong and a positive relationship ($r = 0.761$) amid project design activities and performance of CBC projects. Additionally, the results show that the correlation between the two variables was statistically significant at $p = 0.05$. Based on these findings, there was sufficient evidence to reject the null hypothesis (H_0) and resolve that there is a significant relationship between joint project design activities and performance of CBC projects in Laikipia region. Therefore, Joint Project Design Activities were significantly related to the performance of CBC projects in Laikipia region, and to a larger degree than individual Project Design Activities (scope determination, capacity building of project beneficiaries, project monitoring and control and stakeholder engagement).

The significance of the relationship between joint project design activities and performance of CBC projects was further probed using simple linear regression to establish whether latter could be predicted using the former variable. Composite index of performance of CBC projects (dependent variable) and the mean score of indicators of project design activities (predictor variable) were regressed. The linear regression model was.

$$Y = a + \beta_1 X_{PD} + e$$

Where: Y = Performance of CBC Projects, a = Constant, β_1 = Beta coefficient
 X_{PD} = Joint Project Design Activities, and e = error term

Table 4.24 presents the regression analysis summary. (Appendix P shows full regression analysis results).

Table 4.24: Regression Results of the Influence of Project Design Activities on Performance of CBC Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
	.761 ^a	.579	.577	.29535	.579	324.486	1	236	.000
Model ANOVA		Sum of Squares	df	Mean Square	F	Sig.			
Regression		28.305	1	28.305	324.486	.000 ^b			
Residual		20.587	236	.087					
Total		48.892	237						
Model Coefficients		Unstandardized Coefficients		Standardized Coefficients					
		B	Std. Error	Beta	t	Sig.			
(Constant)		.077	.205		.374	.009			
JOINTDESIGN		1.021	.057	.761	18.013	.000			

a. Predictors: JOINTDESIGN

b. Dependent Variable: PERFORMANCE

The Model Summary exhibited in Table 4.24 shows that correlation coefficient $r = 0.761$ meaning that at $p = 0.05$, Project Design Activities had strong and significant influence on Performance of CBC Projects. The value of $R^2 = 0.579$, suggesting that Project Design Activities explained 57.9 percent of the respondent score variance in Performance of CBC Projects and that 42.1 percent could be due to other factors not factored in the regression model. From the Model Coefficients in Table 4.24, the beta value is 0.761 indicating that if project design activities increased by one unit, the performance of CBC projects in turn increased by 76.1 percent.

The Model ANOVA presented in Table 4.24 indicates that the F ratio was significant since $F_{(1,236)} = 324.486$ at $p = 0.05$. Since the model is statistically significant at $p = 0.05$, it can be concluded that that Project Design Activities could reliably predict the Performance of CBC Projects in Laikipia conservation region.

Based on these statistical findings, the substituted regression model that could be used to predict the performance of CBC projects in terms of Project Design Activities was as follows.

$$Y = 0.077 + 0.761PD + 0.205$$

Where: Y = Performance of CBC Projects

PD = Project Design Activities

This study was based on the thesis that project design activities had the ability to influence the performance of CBC projects by continually linking conservation and local community development. All the project design activities under consideration influenced CBC project performance. The findings concur with Herrold-Menzies (2006) that a design that combines biodiversity conservation and elevates local economic development creates win-win for local community and endangered wildlife. The associations observed consistently supported predictions that project design activities promoted the performance of CBC projects. The study validated this assertion by establishing that combined joint project design activities explained 57.9 percent variance in the performance of CBC projects and that an increase by one unit of project design activities led to an increase of 76.1 percent in CBC project performance. Pursuant to these results, then conservation project designers ought to embrace scope determination, capacity building of project beneficiaries, project monitoring and control and stakeholder engagement to maximize benefits accruing from CBC projects. However, despite the influence, the joint project design activities had a composite mean of 3.59, meaning there is still a room of improvement for better performance in terms of linking conservation and local community development.

Results have clearly shown that reconciling conservation of biodiversity and local economic development through an effective project design was a precursor of CBC project performance. This is in line with Borrini-Feyerabend and Buchan (1997) who advocated for a project design that leaves locals and natural resources in equilibrium. The results in addition concur with the theory of change, that the project design in CBC projects in Laikipia were able to set the chain of reactions that led to the envisioned change. This is because the results allude that increased community participation in project design and

implementation was associated with behavioral change in embracing sustainable resource use. In addition, engagement in daily project decisions was associated with economic, attitudinal, and ecological success of the initiatives. This supports contentions of Brooks *et al.* (2006b) that successful outcomes of CBC projects were realized if local community is permitted to use natural resources, aided to access markets for alternative livelihood products, and with greater community involvement in the conservation project.

The merits of CBC projects were highly debated in the literature with critiques suggesting that development activities tended to be more elevated and strongly overpowered conservation (Baral *et al.*, 2007); the underlying assumptions of these projects were untested (Johannesen, 2006); alternative livelihood projects used in CBC models were not effective (IUCN, 2012) that the design of the initiatives was habitually anchored on erroneous assumptions about the concerns and priorities of beneficiaries (Wright *et al.*, 2016). The findings differ with these assertions and advocate that the CBC project concept, as practiced in Laikipia region, has succeeded in establishing alternative livelihood projects that have spurred development in the local community and at the same time improved the conservation status of habitats and key wildlife species.

The concept of CBC projects is geared towards achieving sustainable development of the local community by aligning ecological, economic, and social goals. The study found that the project design activities set the chain of events that made the local communities to quit prevailing resource use patterns to embrace sustainable resource use. This is an indication that the communities in Laikipia conservancies traded off some traditional subsistence practices to embrace sustainable development. This agrees with Brooks (2017) who noted that the compromise about CBC projects was that tradeoffs are more widespread than synergies. The results also concur with Miller *et al.* (2012) that while win–win outcomes in CBC projects were elusive, there was evidence that in some circumstances of success in some areas. With a proper project design, ecological, economic, and social outcomes could be linked.

Lastly, the results concur with the theory of change in that project design activities factored in the CBC project contributed to a series of outcomes that ultimately precedent intended outcomes. The projects in the conservancies manifested a backwards mapping where CBC project designers calibrated early, and intermediate outcomes required to achieve the desired long-term goals of local community development and conservation of biodiversity.

4.12 Analysis of Regulatory Environment

The implementation of appropriate laws and regulations to protect habitats and conserve wildlife are important for realization of conservation and development goals in conservancies where CBC projects are implemented. Overall policing and surveillance of habitats and corridors in the conservancies is of paramount importance. The assumption made in this study was that regulatory environment moderated the relationship between project design activities and performance of CBC projects. Based on this premise, performance of CBC projects was expected to improve with better regulatory environment. Regulatory environment was viewed in terms of policing efforts and security actions carried out in the conservancies to afford the right environment to preserve biodiversity. In the descriptive analysis, the judgment rule was “Not at All” for the values between 1<NA>1.8; “To a little extent” 1.8<LE>2.6; “To a moderate extent” 2.6<ME>3.4; “To a great extent” 3.4<GE>4.2; “To a very great extent” 4.2<VGE>5.0.

Wildlife ranger policing effectiveness, for instance the efficacy of the ranger patrols, is an essential regulatory component in preventing illegal activities in conservation areas. Policing efforts in conservancies take the form of conservation law and its implementation, which is, securing of space, keeping transgressors off the conservation areas, and protecting of wildlife. Further, to create a subtle conservation environment in community conservancies, there is need for substantial conservation law enforcement management capacity. This calls for conservancy management to solicit for support from national security agencies to develop enforcement staff abilities, intrinsic motivation, and commitment to work.

Table 4.25 displays the descriptive analysis of the statements measuring support by security agencies.

Table 4.25: Descriptive Analysis of Regulatory Environment

Statement	NA %	LE %	ME %	GE %	VGE %	μ	σ
Policing efforts							
Conservancy has enough rangers who enforce conservation law	32.8	3.4	6.3	28.6	29.0	3.18	1.664
Conservancy ranger patrols enforce grazing patterns	27.3	3.8%	7.1%	44.1%	17.6%	3.21	1.498
Conservancy has put local measures in place to detect wildlife crimes	30.7	13.9	9.7	37.8	8.0	2.79	1.423
Rangers are trained on conservation policing	32.4	5.9	12.2	31.1	18.5	2.97	1.553
Rangers are equipped to deal with conservation vices	31.5	5.0	8.8	43.7	10.9	2.97	1.481
Support by Security Agencies							
There are KWS patrols in the conservancy area	47.1	14.7	14.3	18.1	5.0	2.29	1.712
There is collaboration between conservancy and KWS	23.5	13.4	19.3	39.9	3.4	2.86	1.266
KWS, KFS, Police help conservancy to deal with serious wildlife crimes	9.2	3.4	8.0	61.8	17.6	3.75	1.080
KWS helps in problem animal control to protect the local community	28.6	7.6	15.5	44.1	4.2	2.88	1.349
Local rangers are trained by government agencies	35.7	8.4	8.8	34.9	12.2	2.79	1.522
Composite Mean						2.97	0.846
NA = Not at All; LE = To a Little Extent; ME = To a Moderate Extent; GE = To a Great Extent; VGE = To a Very Great Extent; μ = Mean; σ = Standard Deviation							

The findings in Table 4.25 reveal that policing efforts statements had means that fluctuated from 2.79 to 3.21 signifying that all policing efforts investigated were to a moderate extent. Moreover, the composite mean $\mu = 2.97$ indicating that regulatory environment was to a moderate extent ($\mu = 2.6 < ME > 3.4$). The composite standard deviation $\sigma = 0.846$, was high enough to signify those opinions on regulatory environment across the population was inconsistent. Further, the standard deviations of all regulatory environment statements were above the composite standard deviation $\sigma = 0.846$. This shows that there were varied opinions on the presence of ideal regulatory environment in the population.

The findings in Table 4.25 show that policing efforts statements had means that ranged from $\mu = 2.79$ to $\mu = 3.21$. This shows that policing efforts were factored in the CBC project areas to a moderate extent. Conservancy ranger patrols enforce grazing patterns tiered the highest and was to a moderate extent ($\mu = 3.21$; $\sigma = 1.498$) where majority (44.1%) viewed that enforcement of grazing patterns was to great extent and 17.6 percent pointed that it was to a very great extent. Nevertheless, 27.3 percent viewed it was not done at all. Having sufficient frontline law enforcement rangers was rated second and was to a moderate extent ($\mu = 3.18$; $\sigma = 1.664$) where 28.6 percent to a great extent and 29.0 percent to a very great extent opined that the conservancy had enough rangers who enforce conservation law. However, a considerable 32.8 dissented and opined there were not enough rangers who enforce conservation law at all, meaning that in some conservancies surveyed, there lacked rangers, or there was no policing by rangers at all. Trained and well-equipped rangers are important in protecting and securing species and their habitats. From the results in Table 4.43, 43.7 percent of the respondents held that to a great extent, conservancy rangers were equipped to deal with conservation vices while 31.5 percent opined that conservancy rangers were not equipped to deal with conservation vices at all. Overall, the results show that equipping of rangers to deal with conservation vices was to a moderate extent ($\mu = 2.97$; $\sigma = 1.481$).

To bolster conservation efforts, rangers ought to be trained on policing skills to protect wildlife and habitats from poaching. The results from Table 4.25 revealed that, to a moderate extent, rangers were trained on conservation policing ($\mu = 2.97$; $\sigma = 1.553$). It was evident that 31.1 percent of the respondents were of the view that rangers were trained on conservation policing to great extent, 18.5 percent viewed that it was to a very great extent while 32.4 percent viewed that the rangers were not trained at all. This spread of opinions was perhaps due to lack of rangers or ranger training in some conservancies under study. Detection systems are important tools for law enforcement in conservancies to combat increasingly sophisticated poaching gangs. The results show that to a moderate extent ($\mu = 2.79$; $\sigma = 1.423$), conservancies had local measures in place to detect wildlife crimes. The frequencies show that 37.8 percent viewed this was to a great extent while 30.7 percent viewed that there were no local measures in place to detect wildlife crimes at all. This is an indication that wildlife crime detection measures were not in all the conservancies under study.

The findings displayed in Table 4.25 reveal that the means statements on support by national security agencies ranged from 2.29 to 3.75, an indication that the support ranged from a little extent to a great extent. The support by the national conservation security agencies, the KWS and the KFS and the Police in dealing with serious wildlife crimes was rated the highest ($\mu = 3.75$; $\sigma = 1.080$) meaning it was to a great extent. These results express the synergy created by conservation institutions in combating wildlife crime and enhancing conservation at grass root level. The frequencies show that 147 respondents (61.8%) viewed the support by security agencies in combating serious wildlife crimes to be to a great extent and 17.6 percent opined it was to a very great extent.

The results in Table 4.25 show that the support by the KWS in dealing with problem animals was ranked second and was to a moderate extent ($\mu = 2.88$; $\sigma = 1.349$) where 44.1 percent perceived that the KWS helped in problem animal control to protect the local community to a great extent, however, 28.6 percent of the respondents opined KWS did not help in problem animal control. Moreover, the results in Table 4.25 show that to a moderate extent ($\mu = 2.86$; $\sigma = 1.266$), conservancies worked closely with the KWS to provide a community-led approach in wildlife conservation. Majority (39.9%) viewed the collaboration between conservancy and KWS to be to a great extent and 23.5 percent viewed that there was no collaboration at all. Training of local rangers to cope with the challenges encountered in enforcement duties was important. The results presented in Table 4.25 show that support by government agencies in training local rangers was to a moderate extent ($\mu = 2.79$; $\sigma = 1.522$) where 34.9 percent of the respondents viewed it was to a great extent while 35.7 percent viewed that government agencies did not train local rangers at all. Patrols in the conservancy area by the KWS was to a little extent ($\mu = 2.29$; $\sigma = 1.712$) and majority of the respondents (47.1%) confirmed that there were no such patrols at all.

Results from qualitative analysis from the focussed group discussion and the document review differed from the survey results and pointed to a robust policing effort in the conservancies. Respondents in the group discussion agreed that there were patrols in the core conservation areas to ensure wildlife and habitats were secure. One manager of a conservancy stated.

“There has been improved security in the conservancy, we have 12 rangers in the conservancy, 11 are armed and have NPR status.”

This shows the managers and chairs of conservancy boards understood that the effectiveness, and that of the policing efforts as an enabler in conservation and local development. Moreover, policing efforts was an important factor in affording any valuable disincentive to illegal activities in the conservation areas. It was also clear from the document review that in their policing efforts, rangers monitored the status of wildlife and habitats using monitoring tools developed by the donor community. There was evidence from the reviewed documents that all NRT affiliated conservancies; Naibunga Upper, Naibunga Central, Naibunga Lower, Lekurruki and Il Ngwesi conservancies had an effective wildlife policing and monitoring tool, the “Wildlife COMMS”, a devolved community-based monitoring system, used by rangers to enter the sightings, numbers and carcasses of wildlife on a datasheet and it informs policing and security operations. For instance, NRT (2019) reports that.

“Each conservancy employs a team of community scouts. Most community scouts are unarmed, and carry out daily patrols to monitor wildlife, gather information, raise conservation awareness among their communities, and other conservancy-specific duties.”

The document analysis also points to fencing in some areas to mitigate human wildlife conflicts when the policing efforts are not adequate. In summary, these policing efforts point to a regulatory environment that creates zero poaching landscape through policing and surveillance.

Further, the findings from qualitative analysis corroborated survey results on the support of conservancies by security agencies. The focussed group discussion results point to support by KWS, KFS and the Kenya Police in ensuring there was an enabling regulatory environment through conservation law enforcement. For instance, respondents pointed out that conservancy rangers were trained at the KWS Academy and awarded the NPR status by the Kenya Police.

It also emerged from the respondents that the KWS and the Police were involved in poaching and extreme security issues in the conservancies and that conservancies worked with KFS on issues concerning trees and especially charcoal burning and logging. A chairman noted that.

“There are no KWS outposts in the conservancies, but we call in the KWS in extreme security issues involving conservation. As conservancies, we also work with KFS too due to issues that relate to trees like charcoal burning”

The document review points to support by important stakeholders in ensuring an enabling environment in the conservancies. The analysis of the information published in the annual NRTs showed that County Government of Laikipia, the KWS and the National Police Service were all involved in training and arming conservancy rangers. The NRT (2019) reported that the KWS was involved in conservancies in wildlife census, mitigation of human wildlife conflict across the conservancies and playing the central role in curbing serious poaching. The Report states that.

“The Joint Operations and Communications Centre at Lewa Wildlife Conservancy acts as a regional hub for security and peace operations, and for the correlation of information. It enables conservancy scouts, the National Police Service, KWS and other law enforcement actors to coordinate their efforts using shared information and data.”

4.12.2 Regulatory Environment and Performance of CBC Projects

The sixth research objective was to establish the relationship between regulatory environment on and the performance of CBC projects in Laikipia conservation region. Pearson Product Moment Correlation Coefficient was utilized to determine this relationship and further test the null hypothesis that.

***H0₆:** There is no significant relationship between regulatory environment and performance of community-based conservation projects in Laikipia region.*

The correlation analysis results between the two variables were as presented in Table 4.26.

Table 4.26: Regulatory Environment and Performance of CBC Projects Correlation Matrix

		Composite Regulatory Environment
Performance of CBC Projects	Pearson Correlation	281**
	Sig. (2-tailed)	.000
	N	238

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

According to the findings in Table 4.26, the correlation coefficient $r = 0.281$, an indication of a weak but positive relationship between Regulatory Environment and Performance of CBC Projects in Laikipia conservation region. Additionally, these findings further reveal that at $p = 0.05$ the relationship between Regulatory Environment and Performance of CBC Projects was statistically significant. Based on these findings, there is sufficient evidence to reject the null hypothesis (H_0) and conclude that there is a significant relationship between regulatory environment and performance of CBC projects in Laikipia region.

Further, given this significant relationship between regulatory environment and performance of CBC projects, a simple linear regression analysis was run to estimate a statistical model that could predict Performance of the CBC Projects in terms of Regulatory Environment.

The linear model that was tested was.

$$Y = a + \beta_1 X_{RGE} + e$$

Where: Y = Performance of CBC Projects

a = Constant

β_1 = Beta coefficient

X_{RGE} = Regulatory Environment

e = error term

Table 4.27 exhibits regression analysis summary results. (Refer to Appendix Q for full regression analysis results).

Table 4.27: Regression Results of the Influence of Regulatory Environment on Performance of CBC Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
	.281 ^a	.079	.075	.43681	.079	20.247	1	236	.000

Model	ANOVA	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.863	1	3.863	20.247	.000 ^b
	Residual	45.029	236	.191		
	Total	48.892	237			

Model Coefficients	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	3.297	.104			31.854	.000
REGULATORY	.151	.034	.281		4.500	.000

a. Predictors: REGULATORY

b. Dependent Variable: PERFORMANCE

The results from regression analysis presented in Table 4.27 tell that $r = 0.281$, denoting that regulatory environment and performance of CBC projects in Laikipia Region had a positive but a moderate correlation. From the Model Summary, the coefficient of determination, $R^2 = 0.079$, an indication that 7.9 percent change in performance of CBC projects can be elucidated by regulatory environment and that 92.1 percent of the change in the performance of CBC projects could be elucidated by other factors not captured in the model. The Model Coefficients of the analysis show a beta value of 0.281, meaning that a unit increase of regulatory environment leads to 28.1 percent increase in performance of CBC projects, confirming the weak relationship between the two variables.

The Model ANOVA of the regression analysis in Table 4.27 shows F-ratio $F_{(1,236)} = 20.247$, and was statistically significant at $p = 0.05$, meaning that regulatory environment had a significant influence on the performance of CBC projects in Laikipia conservation region.

From these statistical findings, the following substituted regression model could be used to predict the performance of CBC projects in terms of Regulatory Environment.

$$Y = 3.297 + 0.281RGE + 0.104$$

Where: Y = Performance of CBC Projects

RGE = Regulatory Environment

The survey and qualitative analysis findings have shown that ensuring a good regulatory environment through enforcement of conservation law was essential in the enhancement of conservation project performance. This comports Struhsaker *et al.* (2004) that the single most important strategy that ensured ecological success in conservation projects was technical and financial support, which are important ingredients of improved conservation law enforcement effectiveness. The results further concur with the arguments by Critchlow *et al.* (2016) that conservation law-enforcement is an indispensable element of lessening unlawful activities in protected areas.

Strengthening regulatory environment of CBC projects calls for conservation law enforcement at the protected area sites level. The qualitative strand responses showed that it required effective policing by dedicated law enforcement personnel with resources and equipment for deterrence and interception. The results comport Linkie *et al.* (2015) that patrol success was of paramount importance. The study found that the conservancies had well-designed policing efforts as a regulatory measure to ensure wildlife was not threatened. Johannesen (2006) advised on increasing the use of guards and patrols in anti-poaching law enforcement for the purpose of improving the rate of detection of threats in wildlife areas. Local community function in conservation law enforcement is crucial. This agrees with Linkie *et al.* (2015) that ranger patrol enforcement of conservation law and success was influenced by local informant reports on poaching. The results further concur with the authors that these conservation actions by the local community directly affected target wildlife population trends.

The study showed that optimization of patrol efficacy with an emphasis on the patrol staff capacity indicating that investing in policing efforts to improve patrols was important. The results comport Bernhard *et al.* (2020) in that high investment in patrolling efforts lead to a decrease of conservation vices, whereas low investment in patrolling efforts increased conservation vices. On the support by national security agencies, the results showed that KPR classification given to approved rangers in the community conservancies gave the latter legal status, allowing them to be armed, affording them some powers to arrest and therefore better law enforcement. This confirms the assertions by Tranquilli *et al.* (2014) conservation actions such as law enforcement, ecotourism and research had long-term effects of lowering threat levels in conservation areas.

4.13 Moderating Influence of Regulatory Environment on the Relationship between Project Design Activities and Performance of CBC Projects

The seventh research objective was to determine the moderating influence of regulatory environment on the relationship between project design activities and performance of CBC projects in Laikipia region. For CBC projects to achieve the needs of the locals without compromising the conservation goals, regulatory measures must be instituted to protect wildlife and local communities from each other. The assumption here is that if well executed, regulatory environment can enhance the performance of CBC projects. The testing of a null hypothesis was done to determine the moderating mediation role of regulatory environment on the relationship between project design activities and CBC project performance in Laikipia region.

***H0₇**: Regulatory environment has no significant moderating influence on the relationship between project design activities and performance of CBC projects in Laikipia region.*

Moderation analysis establishes whether relationship between two variables is dependent on the value of a third variable, the moderating variable. According to Field (2013), the analysis establishes how the impact of a predictor variable on an outcome variable fluctuates on introduction of a moderating variable. The moderating effect was assessed based on the fluctuation of the impact that project design activities on CBC project performance on the introduction of regulatory environment. It was assumed that regulatory environment improved the project design activities which in turn enhanced CBC project performance.

Based on the proposed conceptual model in Figure 3 (Chapter 3), if regulatory environment (W) is a moderator, it is then expected to affect the potency or even the direction of the relation between Project Design Activities (X) and Performance of CBC Projects (Y) by enhancing, reducing, or changing the influence of the predictor. The expected Statistical Model was as shown in Figure 4.

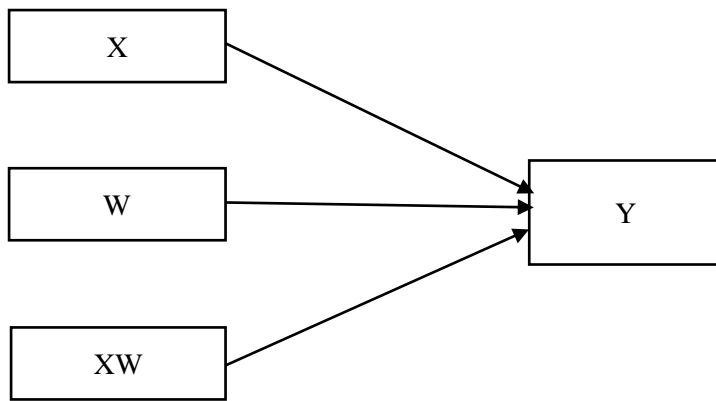


Figure 4: Statistical Moderation Model

From the Statistical Moderation Model in Figure 4, X denotes Project Design Activities (independent variable), Y denotes CBC Project Performance (dependent variable), W denotes Regulatory Environment (moderator variable) and, XW denotes the product of X and W (the independent and the moderator variables). The effect of moderation in the relationship between Project Design Activities and CBC Project Performance was tested using Hayes SPSS PROCESS Macro. The model summary provides r R-Square, F-Statistics, and p-values. The results are as shown in Table 4.29, and full results are tabulated in Appendix R.

Table 4.28: Regulatory Environment Moderation Test

Model Summary							
	R	R-Sq	MSE	F	Df1	Df2	p
	.762	.581	.088	108.196	3	234	.000
Model Pathways							
	coefficient	SE	t	p	LLCI	ULCI	
constant	3.738	.020	183.837	.000	3.698	3.778	
Pathway X-Y	1.017	.061	16.746	.000	.897	1.136	
Pathway W-Y	.004	.025	.180	.857	-.044	.053	
Pathway XW-Y	.070	.067	1.042	.298	-.063	.203	
Test(s) of highest order unconditional interaction(s)							
		R-Sq	F	Df1	Df2		p
X*W		.002	1.086	1	234		.298

The Hayes SPSS PROCESS Macro regression results in Table 4.28 reveals that the R^2 was 0.581, meaning 58.1 percent of CBC project performance was being accounted for by the three exogenous variables in the test, that is, project design activities, regulatory

environment, and the Interaction Term ($X*W$). Pathway X-Y shows that the model was significant ($p=.000$ which is less than $.05$) and that X (project design activities) reliably predicted Y (CBC project performance). Pathway W-Y on the other hand shows that the model was not significant ($p=0.857$ which is more than $.05$), meaning, W (regulatory environment) could not reliably predict Y (CBC project performance). Pathway XW-Y, when project design activities combine with regulatory environment (moderation path) shows that the model was not significant ($p=.298$ which is more than $.05$), and in addition, zero (0) occurs between LLCI – ULCI (range -0.063 to 0.203). This is an indication regulatory environment did not have moderating mediation the relationship between project design activities and CBC project performance. Pursuant to these findings, the null hypothesis (H_0) was not rejected, hence conclusion that regulatory environment did not have moderating mediation role in the relationship between project design activities and performance of CBC projects in Laikipia Conservation Region.

Table 4.28 results show that R^2 change of the Interaction Term $X*W$ was 0.002 , revealing that a relationship among the three variables where the moderating variable (regulatory environment) did not enhance the goodness of fit in the relationship amid project design activities and CBC project performance ($p=.298$ which is more than $.05$). An important assumption of this study was that regulatory environment in the conservancies was an enabler of project design of CBC projects. Pursuant to this, the anticipation was that project design activities influence on CBC project performance would have been higher with higher levels of regulatory environment. The moderation test results have however shown that was not the case.

These results further confirm the long-held assertion that pastoralist groups in Africa have coexisted for long with wildlife population. Pastoralists and their livestock have synergistically coexisted for the past 2,000 years (Kioko *et al.*, 2015). This is because regulatory environment which involves conservation law enforcement did not have any impact on the correlation between project design and CBC project performance. So intricate is the life of Maasai pastoralists with wildlife conservation that Kioko *et al.* (2015) established that Maasai community named their clans and moieties using wildlife species names. The results of this study underscore the fact that perhaps regulatory environment has been in existence among the pastoralist community in Laikipia, enshrined in the traditional knowledge systems.

The failure of regulatory environment to have moderating mediation role comports the findings of Fernandez-Llamazares *et al.* (2020), whose in-depth review of a long historical record of record of attitude changes towards wildlife among Amboseli Ecosystem Maasai pastoralists found that.

“Despite changes in religious beliefs and expansion of modern medicine into rural areas, Maasai have maintained strong connections with nature across many aspects of their culture. In traditional societies with a strong cultural reference to wildlife, there is a relatively peaceful coexistence.”

Thus, the regulatory environment in the CBC project area might have been due to the globalized nature of wildlife crime such as illegal trophy trade and not necessarily meant for the local community who were respondents in this study.

In summary, hypotheses tested in this study and their outcomes were as tabulated in Table 4.29.

Table 4.29: Summary of Hypotheses Test

Study Objective	Hypotheses	Results	Decision
To establish the extent of the relationship between scope determination and the performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between scope determination and performance of CBC projects in Laikipia region.	R ² = 0.294 F (1,236) = 97.788 p = 0.05	H₀ rejected
To determine the extent to which capacity building of project beneficiaries was related to the performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between capacity building of project beneficiaries and performance of CBC projects in Laikipia region.	R ² = 0.529 F (1,236) = 264.584 p = 0.05	H₀ rejected
To establish extent of the relationship between monitoring and control and the performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between monitoring and control and performance of CBC projects in Laikipia region.	R ² = 0.145 F (1,236) = 39.870 p = 0.05	H₀ rejected
To examine how stakeholder engagement was related to the performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between stakeholder engagement and performance of CBC projects in Laikipia region.	R ² = 0.410 F (1,236) = 164.169 p = 0.05	H₀ rejected
To establish the extent of the relationship between joint project design activities and the performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between joint project design activities and performance of CBC projects in Laikipia region.	R ² = 0.579 F (1,236) = 324.486 p = 0.05	H₀ rejected
To determine how regulatory environment was related to the performance of community-based conservation projects in Laikipia region.	H₀: There is no significant relationship between regulatory environment and performance of CBC projects in Laikipia region.	R ² = .079 F (1,236) = 20.247 p = 0.05	H₀ rejected
To establish the extent to which regulatory environment moderates the relationship between project design activities and performance of community-based conservation projects in Laikipia region.	H₀: Regulatory environment has no significant moderating influence on the relationship between project design activities and performance of CBC projects in Laikipia region.	R ² = 0.002 F1 (1,234) = 1.086 p = 0.298 Increase in R ² = 0.2%	H₀ Not rejected

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the important results and conclusions based on data that had been analyzed, interpreted, and discussed in chapter four. In addition, recommendations pursuant to the evidence that this study has generated and the contribution that this study has made to the body of knowledge are highlighted. Lastly, this chapter presents future researchers with the identified suggestions for further studies based of the research findings.

5.2 Summary of Findings

The summary of findings segment presents a synopsis of the findings of the study according to the objectives of the study.

5.2.1 Influence of Scope Determination on the Performance of CBC Projects

In this study, the extent to which Scope Determination was factored in the CBC project design was investigated. The study established that the inclusion of scope determination in the design of CBC projects was to a great extent ($\mu = 3.66$), and it was the second rated project design activity. Furthermore, regression analysis established that scope determination had a positive and significant influence on the performance of CBC projects. Furthermore, the regression model was significant (at $p = 0.05$) and therefore, scope determination was found to reliably predict CBC project performance. In this regard, the regression model showed that 54.2 percent of the change in the performance of CBC projects was accounted for by scope determination.

5.2.2 Influence of Capacity Building of Project Beneficiaries on the Performance of CBC Projects

The study was also set to assess the degree to which capacity building of project beneficiaries was integrated in CBC project design. The findings show that capacity building of project beneficiaries was included in the CBC to a great extent, ($\mu = 3.71$) and it was the highest-ranking project design activity. To establish its criticality, the effect of capacity building of project beneficiaries on the performance of CBC projects was also investigated. It was established that capacity building of project beneficiaries positively and significantly influenced the performance of CBC projects. The regression model was significant (at $p = 0.05$) and therefore, capacity building of project beneficiaries was found

to reliably predict CBC project performance. This influence was to a great extent since the regression model showed that 72.7 percent variation in the performance of CBC projects could be attributed to capacity building of project beneficiaries.

5.2.3 Influence of Monitoring and Control on the Performance of CBC Projects

The study set out to find out the extent to which monitoring, and control was factored in the design of CBC projects. The findings of this study revealed that monitoring and control was factored in the CBC project design to a moderate extent ($\mu = 3.40$), making it the lowest-ranking project design activity. Furthermore, monitoring and control's influence on the performance of CBC projects was also investigated and it was established that monitoring and control had a positive and significant influence on the performance of CBC projects. The regression model was significant (at $p = 0.05$) and therefore, monitoring and control reliably predicted CBC project performance. The regression model indicated that 38 percent variation in the CBC project performance was accounted for by monitoring and control factored in the project design.

5.2.4 Influence of Stakeholder Engagement on the Performance of CBC Projects

An examination of how stakeholder engagement was related to the performance of CBC projects in Laikipia conservation region was conducted. This was achieved by measuring the extent to which stakeholder engagement was included in the design of CBC projects across the conservancies. The study findings showed that stakeholder engagement was done to a great extent ($\mu = 3.60$), and that it was the third-ranking project design activity. Additionally, the results showed that stakeholder engagement significantly and positively influenced the performance of CBC projects. The regression model was significant (at $p = 0.05$) which meant that stakeholder engagement was able to reliably predict CBC project performance. This influence was to a great extent since the regression model showed that 64.1 percent variation in the performance of CBC projects was accounted for by stakeholder engagement.

5.2.5 Influence of Joint Project Design Activities on the Performance of CBC Projects

It was also among the objectives of this research to investigate the overall extent to which joint project design activities were included in the CBC project design. It was established that the inclusion of the joint project design activities in the design of CBC projects was to a great extent. ($\mu = 3.59$) Furthermore, the research findings were that joint project design activities had a strong positive and a significant influence on the performance of the CBC

projects. This is evidenced by the fact that based on the regression model, 76.1 percent change in the performance of CBC projects was elucidated by joint project design activities. The regression model was significant (at $p= 0.05$) meaning that joint project activities could reliably predict CBC project performance. This was an indication of the strong impact of joint project design activities as the contribution to the performance of CBC projects is more than each of the project design activities considered independently.

5.2.6 Influence of Regulatory Environment on the Performance of CBC Projects

It was also among the objectives of this research to ascertain the effect that regulatory environment had on the Performance of CBC Projects. The findings of the performed analyses denoted that regulatory environment was implemented in the areas where CBC projects operated to a moderate extent ($\mu= 2.97$). Moreover, the relationship amid regulatory environment and performance of the CBC projects was also determined. It was established that regulatory environment positively and significantly influenced the performance of the CBC projects. In addition, despite the weak correlation between regulatory environment and CBC project performance, ($r=0.281$), the regression model was significant (at $p= 0.05$) and therefore, regulatory environment could still predict CBC project performance. Based on the regression model, 28.1 percent change in the performance of CBC projects could be explained by the regulatory environment in the conservancies.

5.2.7 The Moderating Influence of Regulatory Environment on the Relationship between Project Design Activities and Performance of CBC Projects

It was within the confines of the study to find out whether regulatory environment moderated the relationship between project design activities and CBC project performance. To ascertain this, Hayes PROCESS Macro confirmed that regulatory environment increased the influence of project design activities on the performance of CBC projects marginally by 0.2 percent. However, the Interaction Term influence on CBC project performance was not significant. This meant that regulatory environment did not moderate the relationship between project design activities and the performance of CBC projects. Despite this, some conservancies had robust conservation law enforcement structures in the CBC project design. It is prudent to argue that regulatory environment in the CBC project area might have been due to the globalized nature of wildlife crime such as illegal trophy trade and not necessarily meant for the local community who were respondents in this study.

5.3 Conclusions of the Study

The influence of project design activities on CBC project performance were investigated. An abductive approach tested theoretically derived regression models. Three theoretical lenses were used in the study, the theory of change, the participatory development theory, and the stakeholder theory. Project design is a fundamental function in project management, and it is known to have a major influence of the project performance. Project management relies on a good design to circumvent pitfalls due to complexity and provide parameters to maintain crucial project attributes. The vitality of project design, especially the features to be included in the final outlook cannot be overemphasized. There can be more than one design presented to stakeholders, and the latter usually chooses the one that best suits their needs. This section presents study conclusions based on the project design activities thought to be of vital importance in CBC project design.

Research objective one determined the extent of the relationship between scope determination factored in conservation project design and the performance of CBC projects. The pointers used to address this research question were the project tasks, project deliverables and project targets thought to link conservation and development. This study has concluded that scope determination had a significant influence on the performance of CBC projects in Laikipia region. This denotes the necessity if scope determination aspects in CBC project design to continually link conservation and development.

The degree to which capacity building of project beneficiaries was related to the ensuing CBC project performance in Laikipia conservation region was also investigated. The indicators drawn from sustainable livelihood framework where the extent enhancing social, natural, human, financial, and physical capitals in the CBC projects was determined. This study concludes that capacity building of project beneficiaries has a significant and a positive influence on CBC project performance, which underscores the cruciality of enhancement of capitals, especially based on the sustainable livelihood framework.

It was prudent to find out whether CBC project design involved tracking, reviewing, and adjusting in order to achieve required performance. Pursuant to this, establishing the monitoring and control influence on performance of CBC projects was crucial. This was achieved through investigating the extent of establishment of project standards, measurement of performance and utilizing monitoring and control results to adjust projects back to the course. It was concluded that monitoring and control had moderate positive

influence on performance of CBC projects. A disconnect was found between quantitative and qualitative strands on the extent of monitoring and control of CBC projects. It was therefore emphasized that monitoring and control in the conservancies implementing CBC projects should be embraced and improved. Furthermore, monitoring utilization of land, land-cover in conservation areas, near-real-time monitoring of the conservation law enforcement actions, as well as consistent all-inclusive assessments of how land is used, land-cover variation is emphasized.

The study was mindful that engagement of stakeholders led to shared ownership, empowerment and many other aspects which lead to sustainability of CBC projects. Stakeholder engagement was found to have been positively and significantly related to CBC project performance. In addition, stakeholder engagement was found to influence CBC project performance. The engagement was based on the extent of inclusion of local stake community, integration of their indigenous knowledge and their participation in the CBC project lifecycle. These results have shown that long standing indigenous knowledge, local institutions are prime factors that can guarantee community project performance and sustainability.

Further, the degree to which joint project design activities influenced performance of CBC projects was also determined. The indicators that were used to conceptualize project design activities were scope determination, capacity building of project beneficiaries, project monitoring and control and stakeholder engagement. It was resolved that joint project design activities have a strong positive influence on the performance of CBC projects in Laikipia region. In addition, the influence of joint project design activities on the performance of CBC projects was found to be stronger than individual design activities. It is therefore emphasized that all project design activities should be embraced and improved. To benefit more, a comprehensive approach is desirable such that all project design activities are factored.

In the study, the influence of regulatory environment on the performance of CBC projects was also established. The regulatory environment indicators used were the policing efforts for curbing conservation vices by conservancies and the support from national security agencies. From the findings, conclusions were made that regulatory environment positively and significantly influenced the performance of CBC project in Laikipia region, though moderately. It was additionally resolved that regulatory environment was key to

conservation dimension of CBC projects and its improvement was of paramount importance.

Finally, the moderating mediation influence of regulatory environment on the relationship between joint project design activities and the performance of CBC projects in Laikipia region was established. It was resolved that the influence of joint project design activities on the performance of CBC projects did not depend on regulatory environment. However, in this connection, the influence of joint project design activities on performance of CBC projects increased by 0.2 percent because of regulatory environment. Given the lack of moderation effect, it could still be argued that regulatory environment was important in conservation areas to ward off international poachers due to the globalized nature of illegal wildlife trade. In addition, the regulatory environment is important for the mitigation of human-wildlife conflicts. Thus, conservancies in Laikipia conservation region ought to invest in regulatory environment and especially in terms of the enforcement of conservation laws.

5.4 Recommendations of the Study

In accordance with the research findings, subsequent recommendations have been made. As scope determination was found to have positively influenced the performance of CBC projects, organizations implementing CBC projects ought to continually improve on it. Efforts should be made to mainstream conservation and development-oriented project scope to combat threats. Moreover, actions should be taken to target the keystone wildlife species and habitats for protection while concurrently targeting to improve the wellbeing of local demographic groups thought to be a threat to natural resources. Literature has shown that conservation projects are shrouded with internal and external complexities. This calls for clear and results oriented scope of the CBC projects that will achieve the competing goals of conservation and development. In addition, project designers ought to pay attention to the administrative and governance scope given that local community will require capacities to run complex alternative livelihood projects, for instance, an eco-tourism facility.

Capacity building of project beneficiaries emerged as the top project design activity factored in the CBC project design. Due to complexity of CBC project environment, enhancement of capacities of the project beneficiaries is key to equip them to continually mitigate the challenges from the environment. CBC projects are designed to distract and divert labor from unsustainable consumption of natural resources, this renders capacity building

essential for the beneficiaries to be able to initiate and manage alternative livelihoods. Therefore, effectiveness of conservation project design and planning can be boosted by incorporation external expertise to boost indigenous institutions and the wider society based on sustainable livelihood framework. In addition, the capacity building should be devised to spur local economic, cultural, and political facilitating environments. The project design should consider capacity development of the local community institutions to enable them to play an oversight role of the conservation projects. This is because sustainability of community projects critically relies on enabling local institutional environment.

Monitoring and control give information on the progress towards the achievement of project objectives at any given time in relation to respective targets and outcomes. Although the qualitative strand showed that there was robust monitoring and control measures in the conservancies implementing CBC projects, the quantitative strand perceived it to be to a moderate extent. It is therefore recommended that there should be promotion of engagement of local community in issues of biodiversity, especially in monitoring and controlling activities geared towards conservation and sustainable use of local resources. Moreover, in accordance with theory of change, in fulfilling long-term CBC project goals, monitoring and control in the design should focus on immediate goals that must be realized if the long-term goals are to be fulfilled.

CBC projects are implemented in conservation areas with local communities who have for generations interacted with wildlife. Such communities have developed rich traditional knowledge systems that are highly connected with the environment they live in. It is important that CBC projects engage and supports the traditional knowledge systems of these local communities in conservation wildlife and its habitats. Further, the indigenous community economic activities could be improved to achieve better production by bringing in expertise knowledge to complement the traditional one. Since a considerable importance is attached to local knowledge, effective outreach and communication with local communities, especially local cultural institutions, the retainers of indigenous knowledge systems. Such outreach and communication could be attained if project design includes engagement not only at the project design and planning phase, but also during the entire project lifecycle. The design of CBC projects should counter the negative role that is sometimes played by the local elite by being cognizant of power relations at the lower level and ensure all local community wishes are integrated into the project.

The study showed that joint project design activities influenced the performance of CBC projects more than the individual project design activities of scope determination, capacity building of project beneficiaries, monitoring and control and stakeholder engagement. This underscores the vitality of holistic design of CBC projects that incorporates all aspects of the environment of implementation. CBC project design identifies key elements of conservation and development and sets the overall tone and therefore conservancies should adopt an approach that views the system as an interconnected whole that is part of a larger world and integrate all aspects.

Regulatory environment level was found to have positively influenced the performance of CBC projects in the conservancies to a moderate extent. However, regulatory environment was found not to have moderated the relationship between project design activities and the performance of CBC projects. Despite lack of moderating effect, regulatory environment was highlighted in the literature to be important for securing wildlife against globalized illegal trophy trade and mitigation of human-wildlife conflict. The descriptive and qualitative analysis results pointed to the central role played by regulatory environment in projects that link conservation and development in the communities in a country of peculiar policies like Kenya where all wildlife belongs to the state regardless of area of habitation. Since regulatory environment was to a moderate extent, that means there is a room for improvement as laws and regulations relating to habitat protection and conservation are critical. In this regard the conservancies and the donor community should invest more in ranger training and empowerment. Synergies with national security organs should also be improved to ensure the regulatory environment becomes an enabler of conservation and development.

5.5 Contribution to Knowledge

Project design is an imperative element of a project and without it, there lacks structure for the project development process to stand on and ensure future project performance. Project design represents an outline of the different factors related to the project, that given a project the uniqueness and are included in the planning, then tracked by the management and the development team. There is dearth of empirical studies that emphasize on the project design element, with most studies focusing on the planning aspects. Furthermore, the studies that have touched on project design have failed to incorporate project performance as a dependent variable in a study centered on cross-sectional design approach to ascertain the

accruing benefits a project would realize from the design aspect. This study empirically established the significance of project design to conservation project performance.

Literature reviewed does not expressly point to project performance, but project success. Project success is an outdated measure of projects as it considers mainly the iron triangle of scope, budget, and schedule. This measure of success is reductionist, it fails to capture an array of other parameters that can determine the success of a project. This study vouches for project performance, a multidimensional concept that measures the success of projects considering all the aspects of it. Additionally, most literature encountered on project success are about critical success factors, a biased view of how and why projects fail to be successful. Such studies relegate project design to just an item and sadly, an add-on of planning. This study promotes the essence of project design from this simplistic view, and the aspect that gives a project its main outlook, the study elevates project design to an important factor that influences project performance.

There have been profound changes in the global conservation movement over the decades with venerable fortress conservation paradigm being replaced with neoliberal conservation. Conservation based on neoliberal policies too have been critiqued that they tend to have ineffective outcomes and reinforce existing power relations such as elite capture and the conflicting goals of conservation and development. Certainly, conservationists have questioned the compatibility of conservation and development and contended that the trade-offs between alternative livelihood and conservation concerns were largely irreconcilable. The findings of this study have shown that with the correct project design, indeed conservation and development goals can be achieved concurrently.

Additionally, CBC projects are part of ICDPs whose implementation has been disapproved for having wrong and untested assumptions about host communities. Others have given wide-ranging and instructive discussions of the design dilemmas of CBC projects, describing the inherent trade-offs in linking conservation and development as a travesty. These arguments have made CBC projects to be doubted as effective conservation tools.

Lastly, the studies that were encountered considered only one outcome as a measure of projects success. This study has investigated four outcomes. These were the empowerment of local community, attitudinal change of local community in accepting wildlife conservation as an economic activity, behavioral change towards embracing sustainable resource use and ecological change in terms of biodiversity regeneration.

5.6 Suggestions for Further Studies

Project design activities have been found to have positively influenced the performance of CBC projects in Kenya, and that all project design activities were to a great extent factored in CBC project design except for monitoring and control which had a moderate influence. It is prudent that prospective researchers should design studies to ascertain elements that affect the implementation of monitoring and control in conservation projects. The determination of these elements may inform on the approaches that can be used to advance the execution of monitoring and control.

The results show that project performance based on community empowerment, acceptance of wildlife conservation, sustainable resource use and biodiversity regeneration was to great extent. Further studies could be carried out to explore the synergies and tradeoffs among these CBC project performance outcomes for better conservation project management.

The study was based on exclusively determining how project design activities influenced the performance of CBC projects in community conservancies. Further studies ought to examine the influence of project design activities on the performance of CBC projects in private conservancies that exist adjacent to the community conservancies and augment the inference of knowledge claims made in this study.

This study did not target the whole fauna and flora, but only animal species. The study could be replicated to ascertain the influence that project design activities had on the performance of the projects targeting those living in forest areas.

REFERENCES

- Aaltonen, K., Kujala, J., Havela, L., & Savage, G. (2015). Stakeholder Dynamics during the Project Frontend: The Case of Nuclear Waste Repository Projects, *Project Management Journal*, 46(6), 15–41.
- Acebes, F., Pajares, J., Galan, J. & Lopez-Paredes, A. (2014). A new approach for project control under uncertainty. Going back to the basics. *International Journal of Project Management*, (32). 423–434. 10.1016/j.ijproman.2013.08.003.
- Ackoff, R. L. (1974). *Redesigning the Future: A Systems Approach to Societal Problems*. New York John Wiley & Sons Inc.
- Adams, W. M., Aveling, R., Brockington, D., Dickson, B., Elliott J., Hutton J. *et al.* (2004). Biodiversity Conservation and the Eradication of Poverty, *Science*, 306, 1146-1149.
- Adom, D. (2016). Asante Indigenous Knowledge Systems: Repositories of Conservation Ethics for Ghana's Biodiversity. *Proceedings of the Academic Conference of on Interdisciplinary Approach*, 7 (2).
- Aga, D.A., Noorderhaven, N. & Vallejo, B. (2018). Project Beneficiary Participation and Behavioral Intentions Promoting Project Sustainability: The Mediating Role of Psychological Ownership, *Development Policy Review*, 1–20.
- Alias, Z., Zawawi, E.M., Yusof, K. & Aris, N.M. (2014). Determining Critical Success Factors of Project Management Practice: A Conceptual Framework, *Social and Behavioral Sciences*, 153, 61-69.
- Alpert, P. (1996). Integrated Conservation and Development Projects, *BioScience* 46, 845-855.
- Andersen, E. S. (2006). Milestone Planning: A different Planning Approach. Paper presented at PMI® Global Congress 2006—Asia Pacific, Bangkok, Thailand. Newtown Square, PA: Project Management Institute.
- Ayana, A.N., Vandenabeele, N. & Arts, B. (2015). Performance of Participatory Forest Management in Ethiopia: Institutional Arrangement Versus Local Practices, *Critical Policy Studies*, doi:10.1080/19460171.2015.1024703
- Bal, M., Bryde, D., Fearon, D. & Ochieng, E. (2013). Stakeholder Engagement: Achieving Sustainability in the Construction Sector, *Sustainability*, 5(2), 695-710,
- Ballet, J., Koffi, K. & Komana, K. (2009). Co-Management of Natural Resources in Developing Countries: The Importance of Context, *Economie internationale*, 120(4), 53-76.
- Banda Jr, R.K. & Pretorius, L. (2016). The Effect of Scope Definition on Infrastructure Projects: A Case in Malawi's Public and Private Implementing Agencies, *South African Journal of Industrial Engineering* December, 27(4), 203-214.
- Bannerman, P. (2008) Defining Project Success a Multilevel Framework. Project Management Institute Research Conference, Warsaw, 5-6.
- Baral, N., Stern, M. & Heinen, J. (2007). ICDP Life Cycles in the Annapurna Conservation Area, Nepal: Is Development Overpowering Conservation? *Biodiversity and Conservation*, 16, 2903-2917. DOI 10.1007/s10531-006-9143-5.

- Bauch S.C., Sills, E.O. & Pattanayak, S.K. (2014). Have we managed to Integrate Conservation and Development? ICDP Impacts in the Brazilian Amazon, *World Dev.* 64, 135–148.
- Bernhard, K., Sabuhoro, E. & Munanura (2020). Effects of Integrated Conservation-Development Projects on Unauthorized Resource Use in Volcanoes National Park, Rwanda: A Mixed-Methods Spatio-Temporal Approach. *Oryx.* 55.
- Bonghez, S. & Grigoriou, A. (2013). Project performance management, PMI Global Congress 2013—EMEA, Istanbul, Turkey. Newtown Square, PA: Project Management Institute.
- Borrini, F.G. & Buchan, D. (1997). *Beyond Fences: Seeking Social Sustainability in Conservation (1st Ed)*, IUCN, Gland, Switzerland
- Bouamrane, M., Spierenburg, M., Agrawal, A., Boureima, A., Cormier-Salem, M., Etienne, M. *et al.* (2016). Stakeholder Engagement and Biodiversity Conservation Challenges in Social-Ecological Systems: Some Insights from Biosphere Reserves in Western Africa and France, *Ecology and Society* 21(4):25.
- Bourne, L. & Walker, D.H. (2005). The Paradox of Project Control, *Team Performance Management*, 11(5/6) 157-178, doi.org/10.1108/13527590510617747.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40.
- Brichieri-Colombi, T., McPherson, J., Sheppard, D., Mason, J. & Moehrensclager, A. (2018). Standardizing the Evaluation of Community-Based Conservation Success. *Ecological Applications*. 28(8), 1963–1981, doi.10.1002/eap.1788/full.
- Brooks, J. (2017). Design Features and Project Age Contribute to Joint Success in Social, Ecological and Economic Outcomes of Community-Based Conservation Projects, *Conservation Letters*, 10(1), 23–32.
- Brooks, J., Waylen, K.A. & Mulder, M.B. (2012). How National Context, Project Design, and Local Community Characteristics Influence Success in Community-Based Conservation Projects, *Proceedings of the National Academy of Sciences* 109(52).
- Brooks, J., Waylen, K.A. & Mulder, M.B. (2013). Assessing Community-Based Conservation Projects: A Systematic Review and Multilevel Analysis of Attitudinal, Behavioral, Ecological and Economic Outcomes, *Environmental Evidence*, 2(2).
- Brooks, J.S. (2016). Design Features and Project Age Contribute to Joint Success in Social, Ecological, and Economic Outcomes of Community-Based Conservation Projects, *Conservation Letters*, 10(1), 23–32, doi:10.1111/conl.12231.
- Brooks, J.S., Franzen, M.A., Holmes, C.M., Grote, M.N. & Mulder, M.B. (2006a). Development as a Conservation Tool: Evaluating Ecological, Economic, Attitudinal and Behavioral Outcomes, *Collaboration for Environmental Evidence* 5(14).
- Brooks, J.S., Franzen, M.A., Holmes, C.M., Grote, M.N., & Mulder, M.B. (2006b). Testing Hypotheses for the Success of Different Conservation Strategies. *Conservation Biology*, 20, 1528-1538.
- Brown, M. & Wyckoff-Baird, B. (1995). *Designing Integrated Conservation and Development Projects*, WWF-US Biodiversity Support Program, Washington, DC.
- Burgess, N.D., Franks, P., Rodgers, W.A., Mattee, A.E., Mgumia, Lovett, J. & Rahbek, C. (2001). Conserving Biological Diversity through the Integrated Conservation and

- Development Project Approach: With Field Examples from The Uluguru Mountains, Tanzania, 15-29 in: *Integrating Conservation and Development: Lessons learned and challenges for the future*. Ministry of Foreign Affairs, DANIDA, Copenhagen.
- Caldwell, R. (2012). Systems Thinking, Organizational Change and Agency: A Practice Theory Critique of Senge's Learning Organization, *Journal of Change Management*, 12(2), 1–20.
- Cameron, R., & Sankaran, S. (2013). Mixed Methods Research Design: Well Beyond the Notion of Triangulation. In: Drouin, N., Müller, R., Sankaran, S. (Eds.), *Novel Approaches to Project Management Research: Translational and transformational*. Copenhagen Business School Press, Copenhagen, Denmark, pp. 383–401.
- Campbell, L.M. & Vainio-Mattila, A. (2003). Participatory Development and Community-Based Conservation: Opportunities Missed for Lessons Learned? *Human Ecology*, 31(3), 417-437.
- Carifio, L. & Perla, R. (2008). Resolving The 50-Year Debate Around Using and Misusing Likert Scales, *Medical Education*, 42(12), 1150–1152.
- Catacutan, D. C. & Tanui, J. K. (2007). Engaging Stakeholders in Integrated Natural Resource Management: Approaches and Guidelines from Land Care, *World Agroforestry Centre*, www.worldagroforestry.org/
- Cebrian-Piqueras, M., Filyushkina, A., Johnson, D., Lo, V., Rodriguez, M. D., & March, H. *et al.* (2020). Scientific and Local Ecological Knowledge, Shaping Perceptions towards Protected Areas and Related Ecosystem Services, *Landscape Ecology* (35).
- Child, B. & Dalal-Clayton, B. (2004). Transforming Approaches to CBNRM: Learning from the Luangwa experience in Zambia. Getting Biodiversity Projects to Work, *Towards More Effective Conservation and Development*, 256-289.
- Christensen, L.B., Johnson, R.B. & Turner, L.A. (2014). *Research Methods, Design, and Analysis, 12th Ed.*, Pearson, Boston.
- Chuan, L.C., (2006). Sample Size Estimation Using Krejcie and Morgan and Cohen Statistical Power Analysis: A Comparison. *Jurnal Penyelidikan IPBL, Jilid 7*, 2006.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences, 2nd Ed.*, Hillsdale, New Jersey.
- Cohen, J. (1992). Quantitative Methods in Psychology: A Power Primer, *Psychological Bulletin*, 112(1), 155-159.
- Cohen, J.M. & Uphoff, N.T. (1977). *Rural Development Participation: Concepts and Measures for Project Design, Implementation and Evaluation*, Cornell University, Center for International Studies. Ithaca, New York.
- Conservation International (2013). *Constructing Theories of Change for Ecosystem-Based Adaptation Projects: A Guidance Document*, Conservation International. Arlington, VA.
- Cornwall, A. (2006). Historical Perspectives on Participation in Development, *Commonwealth & Comparative Politics*, 44(1), 62– 83.
- Craigie, I. D., Barnes, M. D., Geldmann, J., & Woodley, S. (2015). International Funding Agencies: Potential Leaders of Impact Evaluation in Protected Areas? *Biological Sciences*, 370(1681).

- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research (2nd Ed.)*. Thousand Oaks, CA: Sage.
- Critchlow, R., Plumtre, A., Andira, B., Nsubuga, M. & Driciru, M., Rwetsiba, *et al.*, (2016). Improving Law Enforcement Effectiveness and Efficiency in Protected Areas Using Ranger-collected Monitoring Data. *Conservation Letters*. 10.1111/conl.12288.
- Curtis, E., Comiskey, C. & Dempsey, O. (2016). Importance and Use of Correlational Research. *Nurse Researcher*. 23. 20-25. 10.7748/nr.2016.e1382.
- Dangi, T.B. & Jamal, T. (2016). An Integrated Approach to “Sustainable Community-Based Tourism”, *Sustainability*, 8(475), doi:10.3390/su8050475.
- Darr, C. (2005). A Hitchhiker’s Guide to Reliability, *SET: Research Information for Teachers*, 3, 59–60.
- Degeorges, A. & Reilly, B. (2009). The Realities of CBNRM and Biodiversity Conservation in Sub-Saharan Africa, *Sustainability*, 1(3), 734-788
- Delacre, M., Lakens, D. & Leys, C. (2017). Why Psychologists Should by Default Use Welch’s t-test Instead of Student’s t-test. *International Review of Social Psychology*, 30(1), 92–101, DOI: <https://doi.org/10.5334/irsp.82>
- Derenskaya, Y. (2018). Project Scope Management Process, *Baltic Journal of Economic Studies*, 4(1), 118-125, doi.org/10.30525/2256-0742/2018.
- DFID (1999). *Sustainable Livelihoods Guidance Sheets*, DFID, London.
- Dogbe, T. (1998). The one who rides the donkey does not know the ground is hot, *PLA Notes*, 27, 34–36
- Don Carlos, A. W., Teel, T.L., Manfredo, M.J. & Mathur, V.B. (2013). Building Capacity to Enhance Protected Area Management Effectiveness: A Current Needs Assessment for the Asian Context, *The George Wright Forum*, 30(2), 154-162.
- Dressler, W., Buscher, B., Schoon, M., Brockington, D., Hayes, T. & Kull, C. *et al.* (2010). From Hope to Crisis and Back Again? A Critical History of the Global CBNRM Narrative. *Environmental Conservation*. 37. 5 - 15. 10.1017/S0376892910000044.
- Eade & Williams (1995). The Oxfam Handbook of Development: Aging with Wisdom and Dignity, *Focus on Gender*, 2(1).
- Eik-Andresen, P., Johansen, A., Landmark, A.D. & Sorensen, A.O. (2016). Controlling a Multibillion-Project Portfolio - Milestones as Key Performance Indicator for Project Portfolio Management, *Procedia Social and Behavioral Science*, 226, 294–301.
- Ercceg-Hurn, D. M., & Mirosevich, V. M. (2008). Modern Robust Statistical Methods: An Easy Way to Maximize the Accuracy and Power of Your Research. *American Psychologist*, 63(7), 591–601. <https://doi.org/10.1037/0003-066X.63.7.591>.
- Eshoo P.F., Johnson, A., Duangdala, S. & Hansel, T. (2018). Design, monitoring, and evaluation of a direct payments approach for an ecotourism strategy to reduce illegal hunting and trade of wildlife in Lao PDR. *PLoS ONE* 13(2):
- Eskerod, P. & Huemann, M. (2013). Sustainable Development and Project Stakeholder Management: What Standards Say, *Journal of Managing Projects in Business*, 6(1), 36-50.

- Eskerod, P. & Larsen, T. (2018). Advancing Project Stakeholder Analysis by the Concept 'Shadows of the Context', *International Journal of Project Management*, 36(1), 161-169.
- Eskerod, P. & Vaagaasar, A. L. (2014). Stakeholder Management Strategies and Practices during a Project Course, *Project Management Journal*, 45(5), 71–85.
- Eskerod, P., Huemann, M. & Ringhofer, C. (2015). Stakeholder Inclusiveness: Enriching Project Management with General Stakeholder Theory. *PM Journal*, 46, 42-53.
- Fageha, M.K. & Aibinu, A.A. (2014). Prioritizing Project Scope Definition Elements in Public Building Projects, *Australasian Journal of Construction Economics and Building*, 14(3), doi.org/10.5130/AJCEB.v14i3.4155
- FAO (2003). *Participatory Development: Guidelines on Beneficiary Participation in Agricultural and Rural Development*, Rural Development Division, FAO Rome Italy.
- Feldon, D. F. & Kafai, Y. B. (2008). Mixed Methods for Mixed Reality: Understanding Users' Avatar Activities in Virtual Worlds, *Educational Technology Research and Development*, 56(5), 575-93.
- Fernández-Llamazares, A., Western, D., Galvin, K.A., McElwee, P. and Cabeza, M. (2020). Historical shifts in local attitudes towards wildlife by Maasai pastoralists of the Amboseli Ecosystem (Kenya): Insights from three conservation psychology theories, *Journal for Nature Conservation* 53.
- FFI (2014). How to Make a Monitoring Plan for Threatened Tree Species: Brief 3, Global Trees Campaign.
- Finstelbusch, K. & Van Wicklin, W.A. (1987). The Contribution of Beneficiary Participation to Development Project Effectiveness, *Public Administration and Development*, 7(1), 1-23.
- Foundations of Success (2017). *Conceptualizing and Planning Conservation Projects and Programs: A Training Manual*. Foundations of Success, Bethesda, Maryland, USA
- Fraenkel, J.R. & Wallen, N.E. (2008). *How to Design and Evaluate Research in Education*, 7th Ed., McGraw-Hill, Boston.
- Frey, B. (2018). *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation* (Vols. 1-4). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781506326139
- Galvin, K. A., Beeton, T.A. & Luizza, M. W (2018). African Community-Based Conservation: A Systematic Review of Social and Ecological Outcomes, *Ecology and Society* 23(3), doi.org/10.5751/ES-10217-230339.
- Garnett, S., Sayer, J. & Du Toit, J.T. (2007). Improving the Effectiveness of Interventions to Balance Conservation and Development: A Conceptual Framework. *Ecology and Society*, 12(1), <https://www.ecologyandsociety.org/vol12/iss1/art2/>
- Geldmann, J., Barnes, M., Coad, L., Craigie, I. D., Hockings, M., & Burgess, N. D. (2013). Effectiveness of terrestrial protected areas in reducing habitat loss and population declines. *Biological Conservation*, 161, 230–238.
- Geldmann, J., Joppa, L. N. & Burgess, N. D. (2014). Mapping Change in Human Pressure Globally on Land and Within Protected Areas. *Conservation Biology*, 28, 1604–1616.

- Gitonga, B.A. (2012). *Project Design, Planning and Implementation: Community Development Projects Approach*, PSI Consultants, Nairobi.
- Gockel, C.K., & Gray, L. C. (2009). Integrating Conservation and Development in the Peruvian Amazon, *Ecology and Society* 14(2),
- Groom, R. & Harris, S. (2008). Conservation on Community Lands: The Importance of Equitable Revenue Sharing, *Environmental Conservation*, (35). 242 - 251.
- Gruber, J.S. (2010). Key Principles of Community-Based Natural Resource Management: A Synthesis and Interpretation of Identified Effective Approaches for Managing the Commons, *Environmental Management*, 45, 52–66.
- Guerra, C., Pendleton, L., Drakou, E., Proença, V., Appeltans, W., Domingos, T. *et al.* (2019). Finding the Essential: Improving Conservation Monitoring Across Scales, *Global Ecology and Conservation*, 18. e00601. 10.1016/j.gecco.2019.e00601.
- Gul, S. (2011). Critical Realism and Project Management: Revisiting the Noumenal and Phenomenal, *African Journal of Business Management*, 5(31), 12212-12221.
- Gurney, G.G, Pressey, R.L, Cinner, J.E., Pollnac, R., & Campbell, S.J. (2015). Integrated Conservation and Development: Evaluating a Community-Based Marine Protected Area Project for Equality of Socioeconomic Impacts. *Phil. Trans. R. Soc.*, 370.
- Hackett, A. & Strickland, K. (2018). Using the framework approach to analyze qualitative data: a worked example, *Nurse Researcher*, 26(2), doi.10.7748/nr.2018.e1580.
- Hart, T., Burgess, R. & Hart, C. (2005). A Participatory Project Management Cycle: Can It Add Value to Agricultural Development? *South African Journal of Agriculture and Extension*, 34(2), 201-220.
- Hayes, A.F. (2015) An Index and Test of Linear Moderated Mediation, *Multivariate Behavioral Research*, 50(1), 1-22, DOI: 10.1080/00273171.2014.962683.
- Heravi, A, Coffey, V. & Trigunarsyah, B. (2015). Evaluating the Level of Stakeholder Involvement during the Project Planning Processes of Building Projects, *International Journal of Project Management*, 33(5), 985-997.
- High, R. (2000). Important Factors in Designing Statistical Power Analysis Studies. *Computing News, Summer Issue*, 14-15.
- Hornstein, H. (2014). The Integration of Project Management and Organizational Change Management is now a Necessity, *Int. Journal of Project Management* 33, 291– 298.
- Horwich, R. H. & Lyon, J. (2007). Community Conservation: Practitioners' Answer to Critics, *Oryx*, 41(3), 376–385.
- Hughes, R. & Flintan, F. (2001) *Integrating Conservation and Development Experience: A Review and Bibliography of the ICDP Literature*, International Institute for Environment and Development, London.
- Ibbs, C. W., Wong, C. K., and Kwak, Y. H. (2001). Project Change Management System, *Journal of Management in Engineering*, 17(3), 159-165.
- IIED (1994). *Population Growth and Environmental Recovery: Policy Lessons from Kenya*, Gatekeeper Series No. 45.
- IMM (2008). *Sustainable Livelihoods Enhancement and Diversification: A Manual for Practitioners*. IUCN, Gland.

- IUCN (2012). *Resolutions and Recommendations: World Conservation Congress*, Jeju, Republic of Korea, 6–15 September 2012. IUCN, Gland.
- Jainendrakumar, T.D. (2015). Project Scope Management in PMBOK Made Easy, *PM World Journal*, 4(4), www.pmworldlibrary.net.
- Johannesen, A.B. (2004). Designing ICDPs: Illegal Hunting, Wildlife Conservation, and the Welfare of the Local People, *Environment and Development Economics*, 11, 247–267.
- Jones B.T.B., Diggle R.W., Thouless C. (2015). From Exploitation to Ownership: Wildlife-Based Tourism and Communal Area Conservancies in Namibia. In: van der Duim R., Lamers M., van Wijk J. (Eds) *Institutional Arrangements for Conservation, Development and Tourism in Eastern and Southern Africa*. Springer, Dordrecht.
- Jones, B. T. & Murphree, M. W. (2004). CBNRM as a Conservation Mechanism: Lessons and Directions. In: B. Child (Ed.), *Parks in Transition: Biodiversity, Rural Development, and the Bottom Line* (63-103). London, UK: Earthscan.
- Jr, H.N. & Boone, D.A. (2012). Analyzing Likert data. *Journal of Extension*. 50.
- Kabuye, J. & Basheka, B.C. (2017). Institutional Design and Utilization of Evaluation Results in Uganda’s Public Universities: Empirical Findings from Kyambogo University, *African Evaluation Journal* 5(1), a190. <https://doi.org/10.4102/aej.v5i1.190>
- Kamau, C. & Mohamed, H. (2015). Efficacy of Monitoring and Evaluation Function in Achieving Project Success in Kenya: A Conceptual Framework. *Science Journal of Business and Management*, (3). 82-94. doi:10.11648/j.sjbm.20150303.14.
- Karanja, (2012). The Role of the Kenya Wildlife Service in Protecting Kenya’s Wildlife, *The George Wright Forum*, 29(1), 74–80.
- Kelley, K., Clark, B., Brown, V. & Sitzia, J. (2003). Good Practice in the Conduct and Reporting of Survey Research, *Int. Journal of Quality Health Care*, 15(3):261-266.
- Kelly, L.M. & Reid, C. (2020). Baselines and Monitoring: More Than a Means to Measure the End, *Evaluation Journal of Australasia*, 1–14, doi:10.1177/1035719X20977522 journals.sagepub.com/home/evj
- Kelman, C.C. (2013). Governance Lessons from Two Sumatran Integrated Conservation and Development Projects, *Conservation and Society* 11(3), 247-263.
- Khan, M.D. Maneeth & Bhushan, S. (2015). Project Monitoring and Controlling Using Earned Value Method, *International Research Journal of Engineering and Technology*, 2(7), 914-917.
- Kikwatha, R.W., Kyalo, D.N., Mulwa, A.S. & Nyonje, R.O. (2017). Project Beneficiary Selection Process and Sustainability of Dairy Goat Projects in Kenya, *International Journal of Innovative Research and Development*, 6(12).
- Kioko, J., Kiffner, C., Ndibalema, V., Hartnett, E., & Seefeld, C. (2015). Maasai people and elephants: Values and perceptions. *Indian J. of Traditional Knowledge*, 1(1), 13–19.
- Kiringe, J.W., Okello, M. & Ekajul, S.W. (2007). Managers’ perceptions of threats to the protected areas of Kenya: prioritization for effective management, *Oryx Vol*, 41 (3).
- Kothari, C.R. (2009). *Research Methodology: Methods and Techniques*, New Age International, New Delhi.
- Koutra, C. & Edwards, J. (2012). Capacity Building through Socially Responsible Tourism Development: A Ghanaian Case Study, *Journal of Travel Research*, 51(6), 779–792.

- Krejcie, R. V. and Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30, 607-610.
- KWCA (2016). *State of Wildlife Conservancies in Kenya Report*, Retrieved from <https://kwcakenya.com/download/state-of-wildlife-conservancies-in-kenya-report/>
- Kyalo, N.D., Mulwa, A.S. and Nyonje, R.O. (2015). *Monitoring and Evaluation of Projects and Programs: A Handbook for Students and Practitioners*, (2nd Ed.), Aura Publishers, Nairobi.
- Lantz, B. (2013). Equidistance of Likert-Type Scales and Validation of Inferential Methods Using Experiments and Simulations. *Electronic Journal of Business Research Methods* (11). 16-28.
- Lee and Bond (2018). Quantifying the Ecological Success of a Community-Based Wildlife Conservation Area in Tanzania, *Journal of Mammalogy*, 99(2), 459–464.
- Lester, A. (2013). *Project Management, Planning and Control: Managing Engineering, Construction and Manufacturing Projects to PMI, APM and BSI Standards*: 6th, 1-567.
- Linkie, M., Martyr, D.J., Harihar, A., Risdianto, D., Nugraha, R., Maryati, *et al.* (2015). Safeguarding Sumatran tigers: Evaluating Effectiveness of Law Enforcement Patrols and Local Informant Networks, *Journal of Applied Ecology*, 52(4), 1-10.
- LWF (2012). 2012-2030 Wildlife Conservation Strategy for Laikipia County, Laikipia Wildlife Forum, and Space for Giants, Nanyuki, Kenya.
- LWF (2016). *Conserving Biodiversity and Natural Processes and Improving Livelihoods in Laikipia Final Report*, Submitted to the Embassy of the Kingdom of the Netherlands, LWF, Nairobi.
- Manoppo, V. (2020). Natural Capital, Social Capital, and Physical Capital in Improving the Performance of Ecotourism in Bunaken National Park, Indonesia, *Advances in Economics, Business and Management Research*, 144, 514-520.
- Marchewka, J. T. (2010) A Framework for Identifying and Understanding Risks in Information Technology Projects, *Journal of Int. Tech., and Information Management*, 19(1), 61-74.
- Margoluis, R., Stem, C., Salafsky, N. & Brown, M. (2009). Design Alternatives for Evaluating the Impact of Conservation Projects, *New Directions for Evaluation*, 2009(122), 85 - 96.
- Mascia, M. B., Pailler, S., Thieme, M. L., Rowe, A. *et al.* (2014). Commonalities and Complementarities among Approaches to Conservation Monitoring and Evaluation. *Biological Conservation*, 169, 258-267.
- Matula, P.D., Kyalo, D.N., Mulwa, A.S. & Gichuhi, L.W. (2018). *Academic Research Proposal Writing: Principles, Concepts and Structure*, ARTS Press, Nairobi.
- McKinnon, M.C., Mascia, M.B., Yang, W., Turner, W.R. & Bonham, (2015). Impact evaluation to communicate and improve conservation non-governmental organization performance: the case of Conservation International, *Philosophical Transactions of the Royal Society B Biological Sciences* 370(1681) doi:10.1098/rstb.2014.0282.
- McShane, T., Hirsch, P., & Trung, T.C., Songorwa, A.N., Kinzig, A. Monteferri, A. *et al.*, (2011) Hard Choices: Making Trade-Offs Between Biodiversity Conservation and Human Well-Being, *Biological Conservation*, 144, 966-972.

- McShane, T.O & Wells, M.P. (2004). *Getting Biodiversity Projects to Work: Towards Better Conservation and Development*, Columbia University Press, New York.
- Mele, C., Pels, J., & Polese, F. (2010). A Brief Review of Systems Theories and Their Managerial Applications, *Service Science* 2(1/2), pp. 126 - 135, © 2010 SSG
- Michener, V.J. (1998). The Participatory Approach: Contradiction and Co-option in Burkina Faso, *World Development*, 26(12), 2105-2118.
- Miller, B.W., Caplow, S.C., & Leslie, P.W. (2012) Feedbacks between conservation and social-ecological systems, *Conservation Biology*, 26, 218-227.
- Millstone, E., Van Zwanenberg, P. & Marshall, F. (2010). Monitoring and Evaluating Agricultural Science and Technology Projects: Theories, Practices and Problems. *IDS Bulletin*. (4) doi.10.1111/j.1759-5436.2010.00185.x.
- Milupi, I.D., Somers, M.J., & Ferguson, W. (2017). A Review of CBNRM, *Applied Ecology and Environmental Research*, 15(4), 1121-1143.
- Mirza, M.N., Pourzolfaghar, Z. & Shahnazari, M. (2013). Significance of Scope in Project Success, *Procedia Technology*, 9, 722-729.
- Moreira, A. & Costa, A. P. (2016). Qualitative Analysis: Quantifying Quality and Qualifying Quantity. 10.13140/RG.2.1.1083.6720.
- Msila, V. & Setlhako, A. (2013). Evaluation of Programs: Reading Carol H. Weiss, *Universal Journal of Educational Research*, 1(4), 323-327.
- Muhumuza, M. & Balkwill, K. (2013). Factors Affecting the Success of Conserving Biodiversity in National Parks: A Review of Case Studies from Africa, *International Journal of Biodiversity*, 1, 1-20.
- Muller, J. & Coetzee, T. (2012). Social Capital and Socio-Economic Development in Developing Political Economies, *African Journal of Public Affairs*, 5(1), 117-131.
- Naughton-Treves, L., Buck, M. and Brandon, K. (2005). The Role of Protected Areas in Conserving Biodiversity and Sustaining Local Livelihoods, *Annual Review of Environment and Resources*, 30, 219-252.
- Ndonye, H.N., Mulwa, A., & Kyalo, D.N. (2021a). Capacity Building of Project Beneficiaries and Performance of Community Based Conservation Projects: A Case of Laikipia Conservation Region Conservancies, *Journal of Economics and Sustainable Development*, 12 (2), 70-82.
- Ndonye, H.N., Mulwa, A., & Kyalo, D.N. (2021b). Stakeholder Engagement and Performance of Community Based Conservation Projects: A Case of Laikipia Conservation Region Conservancies, *Journal of Economics and Sustainable Development*, 12 (4) 41-50
- Nelson F. & Agrawal, A. (2008). Patronage or Participation? CBNRM Reform in Sub-Saharan Africa, *Development and Change*, 39(4), 557-585.
- Newmark, W.D. & Hough, J. (2000). Conserving Wildlife in Africa: Integrated Conservation and Development projects and Beyond, *Bioscience*, 50(7), 585-592.
- Nganga, I. & Robinson, L.W (2018). Community-based rangeland management in Il'Ngwesi group ranch, Laikipia, Kenya: Taking successes in land restoration to scale project. *ILRI Project Report*. Nairobi, Kenya.

- Njau, D.N. & Ogolla, P. (2017). Factors Influencing Project Scope Performance: A Case of Kenya National Youth Service Projects in Kenya, *Strategic Journal of Business and Change Management*, 4(12), 207 – 220.
- Nkhata, B.O. & Breen, C.M. (2010). Performance of Community-Based Natural Resource Governance for the Kafue Flats, *Environmental Conservation*, 37(3), 296–302.
- Noe, C. & Kangalawe, R.Y. (2015). Wildlife Protection, Community Participation in Conservation, and (Dis) Empowerment in Southern Tanzania, *Conservation and Society*, 13(3), 244-253.
- Norman, G. (2010). Likert Scales, Levels of Measurement and the “Laws” of Statistics. *Adv Health Science Education Theory Practice*. 15(5), 625–632.
- NRT (2017). NRT *State of Wildlife Conservancies in Kenya Report*, Retrieved from <https://www.nrt-kenya.org/document-library>
- NRT (2018). NRT *State of Wildlife Conservancies in Kenya Report*, Retrieved from <https://www.nrt-kenya.org/document-library>
- NRT (2019). NRT *State of Wildlife Conservancies in Kenya Report*, Retrieved from <https://www.nrt-kenya.org/document-library>
- Nthiga, R.W., Duim, R.V., Visseren-Hamakers, I.J. & Lamers, M. (2015). Tourism Conservation Enterprises for Community Livelihoods and Biodiversity Conservation in Kenya, *Development Southern Africa*, 32(3), 407–423.
- Ntuli, H. & Muchapondwa, E. (2015). A Bio-economic Analysis of Community Wildlife Conservation in Zimbabwe, Working Papers 560, Economic Research Southern Africa.
- Nyiro, C.W., Amani, M.N. & Nyiro, R. (2017). Drivers of Success for Community Based Natural Resource Projects in Coast Region of Kenya, *International Journal of Environmental Sciences and Natural Resources*, 3(5), 001-011.
- O’Connell, M.J., Nasirwa, O., Carter, M., Farmer, K.H., Appleton, M., *et al.* (2017). Capacity Building for Conservation: Problems and Potential Solutions for Sub-Saharan Africa, *Oryx*, 1-11.
- Obour, R., Asare, R. Ankomah, P. & Larson, T. (2016). Poaching and its Potential to Impact Wildlife Tourism: An Assessment of Poaching Trends in the Mole National Park in Ghana, *Athens Journal of Tourism*, 3(3), 169-192.
- Oldekop, J.A., Holmes, G., Harris, W.E. & Evans, K. L. (2015). A Global Assessment of the Social and Conservation Outcomes of Protected Areas, *Conservation Biology*, 30(1), 133–141.
- Olukotun, A. (2008). Achieving Project Sustainability through Community Participation. *Journal of Social Science*, 17, 21–29.
- Ostlund, U., Kidd, L., Wengstrom, Y. & Rowa-Dewar, N. (2010). Combining Qualitative and Quantitative Research within Mixed Method Research Designs: A Methodological Review, *International Journal of Nursing Studies*, 48. 10.1016/j.ijnurstu.2010.10.005.
- Parvaiz, G., Mufti, O. & Wahab, M. (2016). Pragmatism for Mixed Method Research at Higher Education Level, *Business and Economic Review*. 8, 67-78. doi:10.22547/BER/8.2.5.
- Patton, M. Q. (2001). *Qualitative evaluation and research methods (3rd Ed.)*. Thousand Oaks, CA: Sage Publications, Inc

- Persha, L., Agrawal, A. & Chhatre, A. (2011) Social and Ecological Synergy: Local Rulemaking, Forest Livelihoods, and Biodiversity *Conserv. Science*, 33(1), 1606-1608.
- Plumptre A.J. Alidria, B. Nsubuga, M., Driciru, M., Rwetsiba, Wanyama, F. & Beale, C.M (2017). Improving Law-Enforcement Effectiveness and Efficiency in Protected Areas Using Ranger-collected Monitoring Data, *Conservation Letters*, 10(5), 572–581.
- PMI (2017). *A Guide to the Project Management Body of Knowledge (6th, Ed.)*, Project Management Institute, Newtown Square, Pennsylvania.
- Popova, U. (2014). Conservation, Traditional Knowledge, and Indigenous Peoples, *American Behavioral Scientist*, 58(1) 197–214, doi: 10.1177/0002764213495043.
- Powell, C.T. (2001). Competitive advantage: Logical and philosophical considerations. *Strategic Management Journal*, 22, 875 - 888.
- Qian, X., Barroso, F. & Messer, C. (2019). Addressing Tourism in County-Level Planning Documents: A Pilot Application of the Community Capitals Framework, *International Journal of Tourism Policy*, 9, 282-299. doi.10.1504/IJTP.2019.10027254.
- Rao, M. Johnson, A. & Bynum, N. (2007). Assessing Threats in Conservation Planning and Management: Synthesis, *Lessons in Conservation*, 1, 44-71.
- Reed, J., Van Vianen, J., Deakin, E.L., Barlow, J. & Sunderland, T.C. (2016). Integrated Landscape Approaches to Managing Social and Environmental Issues in The Tropics: Learning from the Past to Guide the Future, *Global Change Biology*, 22(7), 2540-2554. doi.org/10.1111/gcb.13284.
- Reed, M.S. (2008). Stakeholder Participation for Environmental Management: A Literature Review, *Biological Conservation*, 141, 2417 – 2431.
- Rezania, D., Baker, R. and Burga, R. (2016). Project Control: An Exploratory Study of Levers of Control in the Context of Managing Projects, *Journal of Accounting & Organizational Change*, 12(4), 614-635, doi.org/10.1108/JAOC-10-2015-0084.
- Riehl, B., Zerriffi, H. & Naidoo, R. (2015). Effects of Community-Based Natural Resource Management on Household Welfare in Namibia. *PLoS ONE* 10(5).
- Ritchie, J., Spencer, L., & O’Connor, W. (2010). Carrying out qualitative analysis. In Ritchie J, Lewis J (Eds) *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. Sage, London, 219-262.
- Roe D., Nelson, F. & Sandbrook, C. (eds.) (2009). *Community Management of Natural Resources in Africa: Impacts, Experiences and Future Directions*, Natural Resource Issues No. 18, International Institute for Environment and Development, London, UK.
- Roe, D. Mohammed, E.Y. Porras, I. & Giuliani, A. (2013). Linking Biodiversity Conservation and Poverty Reduction: De-Polarizing the Conservation-Poverty Debate, *Conservation Letters*, 162-171.
- Roe, D., Day, M., Booker, F., Zhou, W., Allebone-Webb, S., Kümpel, N. *et al.* (2014). Are Alternative Livelihood Projects Effective at Reducing Local Threats to Specified Elements of Biodiversity and/or improving or maintaining the Conservation Status of Those Elements? A Systematic Review Protocol, *Environmental Evidence*, 3. 1-8. doi10.1186/2047-2382-3-6.
- Ruiz-Mallén, I. & Corbera, E. (2013). Community-Based Conservation and Traditional Ecological Knowledge: Implications for Social-Ecological Resilience. *Ecology and Society* 18(4)12.

- Salafsky, N. (2011). Integrating Development with Conservation: A Means to a Conservation End, or a Mean End to Conservation, *Biological Conservation*, 144(3), 973–978.
- Salafsky, N., Margoulis, R., Redford, K. H. & Robinson, J. G. (2002). Improving the Practice of Conservation: A Conceptual Framework and Research Agenda for Conservation Science, *Conservation Biology*, 16, 1469-1479.
- Sandbrook, C.G. (2009). Putting Leakage in Its Place: The Significance of Retained Tourism Revenue in The Local Context in Rural Uganda. *Journal of International Development*, 22 (1), 124-136.
- Sastre-Merino, S., De los Rios, I. (2012). Capacity building in development projects. 4th World Conference on Educational Sciences, *Procedia-Social and Behavioral Science Journal*, 46, 960-967.
- Sauer, C. & Reich, B. H. (2007). What Do We Want from a Theory of Project Management? A Response to Rodney Turner, *International Journal of Project Management*, 25(1), 1-2.
- Saunders, M., Lewis, P. & Thornhill, A. (2016). *Research methods for business students*. Harlow: Pearson.
- Sayer, J., & Campbell, B. (2004). *The Science of Sustainable Development*, Cambridge University Press, Cambridge, UK.
- Sayer, J.A., Margules, C., Boedhihartono, A.K., Terry S., James D. L., James R., *et al.* (2017). Measuring the Effectiveness of Landscape Approaches to Conservation and Development, *Sustainability Science* (12), 465–476, <https://doi.org/10.1007/s11625-016-0415-z>
- Schuett, M., Dahal, S. & Nepal, S. (2016). Local Perspectives on Benefits of an ICDP: The Annapurna Conservation Area in Nepal, *International Journal of Biodiversity and Conservation*, 8, 138-146.
- Schulze, K., Knights, K., Coad, L., Geldmann, L., Leverington, F., Eassom, A. *et al.* (2018). An Assessment of Threats to Terrestrial Protected Areas, *Conservation Letters*, doi:10.1111/conl.12435.
- Seixas, C. & Berkes, F. (2010). Community-Based Enterprises: The Significance of Partnerships and Institutional Linkages, *Int. Journal of the Commons*, 4(1), 183-212.
- Shannon-Baker, P. (2016). Making Paradigms Meaningful in Mixed Methods Research, *Journal of Mixed Methods Research*, 10(4), 315–318.
- Sheffield, Jim & Sankaran, Shankar & Haslett, Tim. (2012). Systems thinking: Taming Complexity in Project Management. *On the Horizon*. 20. 126-136. 10.1108/10748121211235787.
- Sheil, D., M. Boissière, & G. Beaudoin. 2015. Unseen sentinels: local monitoring and control in conservation’s blind spots. *Ecology and Society* 20(2): 39.
- Shwiff, A.E., Anderson, A., Cullen, A.R., White, P.C. & Shwiff, S.S. (2013). Assignment of Measurable Costs and Benefits to Wildlife Conservation Projects, *Wildlife Research*, 40, 134-141, doi.org/10.1071/WRI2102
- Silva, J.A. & Mosimane, A.W. (2012). Conservation-Based Rural Development in Namibia: A Mixed-Methods Assessment of Economic Benefits, *Journal of Environment and Development* 22(1), 25-50.

- Smith, J., & Firth, J. (2011). Qualitative Data Analysis: The Framework Approach, *Nurse Researcher*, 18(2), 52-62.
- Stein, D. and Valters, C. (2012). *Understanding “Theory of Change”*, in *International Development: A Review of Existing Knowledge*. JSRP Paper 1, London: JSRP and Asia Foundation.
- Stephenson, P.J (2019). The Holy Grail of Biodiversity Conservation Management: Monitoring Impact in Projects and Project Portfolios, *Perspectives in Ecology and Conservation* 17, 182–192.
- Sterling, E.J., Betley, E. Sigouin, A., Gomez, A., Toomey, A., Cullman, G. *et al.* (2017). Assessing the Evidence for Stakeholder Engagement in Biodiversity Conservation, *Biological Conservation*, 209, 159–171.
- Struhsaker, T., Struhsaker, P. & Siex, K. (2005). Conserving Africa's Rain Forests: Problems in Protected Areas and Possible Solutions, *Biological Conservation*, 123, 45-54.
- Suich, H. (2013). Evaluating the Household Level Outcomes of Community Based Natural Resource Management: The Tchuma Tchato Project and Kwandu Conservancy. *Ecology and Society* 18(4), doi.org/10.5751/ES-05875-180425.
- Sullivan, G. & Artino Jr., A. R. (2013). Analyzing and Interpreting Data from Likert-Type Scales, *Journal of Graduate Medical Education*, 5(4), 541-542.
- Sundaresan, S. R. & Riginos, C. (2010). Lessons Learned from Biodiversity Conservation in The Private Lands of Laikipia, Kenya, *Great Plains Research: A Journal of Natural and Social Sciences*, 20 (Spring), 17-27.
- Tallis, H., Goldman, R., Uhl, M. & Brosi, B. (2009). Integrating Conservation and Development in the Field: Implementing Ecosystem Service Projects, *Front Ecology and Environment*, 7(1), 12–20, doi:10.1890/080012.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach’s Alpha. *International Journal of Medical Education*, 2, 53–55.
- Thomas, P. (2013). *Challenges for Participatory Development in Contemporary Development Practice*, *Development Bulletin*, No. 75, ISSN 1035-1132 The Development Studies Network Australian National University.
- TNC (2007). *Conservation Action Planning Handbook: Developing Strategies, Taking Action, and Measuring Success at Any Scale*. The Nature Conservancy, Arlington, VA.
- Tranquilli, S., Abedi-Lartey, M., Abernethy, K., Amsini, F., Asamoah, A., Balangtaa, C., *et al.* (2014). Protected Areas in Tropical Africa: Assessing Threats and Conservation Activities, *PLoS ONE* 9(12), doi.org/10.1371/journal.pone.0114154.
- Treves, A., Wallace, R. B., Naughton-Treves, L. & Morales A. (2006). Co-Managing Human-Wildlife Conflicts: A Review, *Human Dimensions of Wildlife* 1, 1–14.
- UNDP (1997). *Human Development Report 1997*, United Nations Development Program, New York.
- UNDP (2009). *Handbook on Planning, Monitoring and Evaluating for Development Results*, United Nations Development Program, New York.

- UNEP (2014). *Building Natural Capital: How REDD+ can Support a Green Economy*, Report of the International Resource Panel, United Nations Environment Program, Nairobi, Kenya.
- United Nations General Assembly (2015). *General Assembly Draft Resolution, Transforming our World: the 2030 Agenda for Sustainable Development*. New York.
- USAID (2016). *Conservation Enterprises: Using a Theory of Change Approach to Examine Evidence for Biodiversity Conservation*. USAID Office of Forestry and Biodiversity/Bureau for Economic Growth, Education, and Environment.
- Van der Walddt, G. (2012). Project management and performance management: potential transdisciplinary contributions. *The Journal for Transdisciplinary Research in Southern Africa*, 8 (18). doi.10.4102/td.v8i2.229.
- FAO (2003). *Participatory Development: Guidelines on Beneficiary Participation in Agricultural and Rural Development (2nd Ed)*, FAO, Rome.
- Wacker, J. G. (1998). A Definition of Theory: Research Guidelines for Different Theory Building, *Journal of Operations Management*, 16(4), 361-385.
- Wahlen, C.B. (2015). Constructing Conservation Impact: Understanding Monitoring and Evaluation in Conservation NGOs, *Conservation and Society*, 12(1), 77-88.
- Walzer, N. & Merrett, C.D. (2002). Collaboration, New Generation Cooperatives and Local Development, *Journal of the Community Development Society*, 33(2), 19-38.
- Wambugu, L.N., Kyalo, D.N., Mbi, M., & Nyonje, R.O. (2015). *Research Methods: Theory and Practice*. Aura Publishers, Nairobi.
- Ware, A. (2012). *Context-Sensitive Development: How international NGOs operate in Myanmar*, Kumarian Press, Sterling, VA.
- Warmbrod, J.R. (2014). Reporting and Interpreting Scores Derived from Likert-type Scales, *Journal of Agricultural Education*, 55(5), 30-47, doi: 10.5032/jae.2014.05030
- Watson, Jeff (2001). *How to Determine a Sample Size*: Tipsheet #60, University Park, PA: Retrieved from <http://www.extension.psu.edu/evaluation/pdf/TS60.pdf>
- Waylen, K. A., Fischer, A., McGowan, P. J., Thirgood, S.J. & Milner-Gulland, E.J. (2010). The Effect of Local Cultural Context on Community-Based Conservation Interventions, *Conservation Biology*, 24(4), 1119-1129.
- WCED (1987). *Our Common Future*, Oxford University Press, Oxford.
- Wells, M., Brandon, K. & Hannah, L. (1992). *Parks and People: Linking Protected Area Management with Local Communities*. World Bank, Washington, DC.
- Western, D. (1994). *Linking Conservation and Community Aspirations*, in D. Western and R. M. Wright (eds.) *Natural Connections: Perspectives in Community-based Conservation*, Island Press, Washington D.C., 499-511.
- Wiafe, E.D. (2016). Wildlife Laws Monitoring as an Adaptive Management Tool in Protected Area Management in Ghana: A Case of Kakum Conservation Area, *SpringerPlus*, 5(1).
- WildTeam (2017). *Project Management for Wildlife Conservation v2.0*, WildTeam, Cornwall, UK.

- Williams, D., Thorne, J.H., Sumba, D., Muruthi, P. & Gregory-Michelman, N. (2017). Evaluating Outcomes of Community Based Conservation on Kenyan Group Ranches with Remote Sensing, *Env. Conservation*, doi.org/10.1017/S0376892917000418.
- Wing, K.T. (2004). Assessing the Effectiveness of Capacity-Building Initiatives: Seven Issues for the Field, *Nonprofit and Voluntary Sector Quarterly*, 33(1), 153-160.
- World Bank (1998). *Guidelines for monitoring and evaluation for biodiversity projects*, Washington DC, World Bank.
- Wright, J.H., Hill, N.A., Roe, D., Rowcliffe, J.M., Kumpel, N.F., Day, M. *et al.* (2016). Reframing the Concept of Alternative Livelihoods, *Conservation Biology*, 30(1), 7–13.
- WWF (2006). Resources for Implementing the WWF Project & Programme Standards, WWF, <https://intranet.panda.org/documents/folder.cfm?uFolderID=60971>.
- Wysocki, R. K. (2014). *Effective Project Management: Traditional, Agile, Extreme* (7th, Ed.), John Wiley and Sons, New York.
- Yang, R., Ford, B., Tambe, M. & Lemieux, A.M. (2014). Adaptive Resource Allocation for Wildlife Protection against Illegal Poachers. In: Proc. 2014 *International Conference of Autonomous Agents and Multiagent Systems*, 453-460.
- Yu, M. (2017). Customer Participation and Project Performance: A Moderated-Mediation Examination. *Project Management Journal*. 48. 8-21. 10.1177/875697281704800402.
- Zwikael, O. (2009). The Relative Importance of the PMBOK Guide's Nine Knowledge Areas during Project Planning, *Project Management Journal*, 40(4), 94–101.

APPENDICES

Appendix A: Letter of Introduction

I am a Ph.D. candidate in Project Planning and Management from the School of Education and External Studies of the University of Nairobi, specializing in Project Planning, Design, and Implementation. I am collecting data for my research on “**Project Design Activities, Regulatory Environment and Performance of Community Based Conservation Projects in Kenya: A Case of Laikipia Region Conservancies**”.

Your community project has been randomly selected to be part of this study. I kindly request you to allow my research assistant to collect data on my behalf from your institution by administering questionnaires to the Chairperson, Deputy Chairperson, Secretary, Treasurer, and other members of your community-based project on the same subject.

Further, I kindly assure you that the information given will be treated with confidentiality and will only be used for this study.

Thank you and God bless.

Yours Faithfully

Hussein Nyaika Ndonge

Ph.D. Candidate- UON

Appendix B: Questionnaire for the CBC Project Members

This questionnaire aims at capturing data on: *“Project Design Activities, Regulatory Environment and Performance of Community Based Conservation Projects in Kenya: A Case of Laikipia Region Conservancies”*. The results of this research will not be traceable to you as an individual. I kindly request you to spare 15 minutes and fill the questionnaire. Kindly respond to all the items as truthfully and as justly. This questionnaire comprises of seven sections (A, B, C, D, E, F and G). Kindly follow the instructions given before each section. Use a tick (✓) or as otherwise instructed.

Thank you.

SECTION A: Personal Information

Please fill in the information below by ticking appropriately.

1. Please indicate the appropriate category of the CBC project that you are a member of.

- Livestock Works []
- Tourism Works []
- Bead Works []
- Moran Enterprise []
- Bee Keeping []
- Other (Specify).....

2. Please indicate your gender.

- Male []
- Female []

3. What is your age bracket?

- Below 26 years. [] 26-30 years. []
- 31-35 years [] 36-40 years []
- 41-45 years [] 46-50 years []
- 51-above year []

4. What is your highest level of education?

- Secondary School [] Bachelor’s Degree []
- Certificate [] Master’s Degree []
- Diploma [] PhD []
- Other (specify)

5. Tick your position in the project organization structure

- Chairman []
- Secretary []
- Treasurer []
- Member []

6. How many years have you been a member of this CBC Project

SECTION B: Performance of CBC Projects

7. The statements below refer to the Performance of Community Based Conservation. Based on your conservancy, kindly indicate the level of agreement to these statements. Choose from a score of **1-5 (1 = Not at all; 2 = To a little extent; 3 = To a moderate extent; 4 = To a Great Extent; 5 = To a very great extent)**.

	Statement	1	2	3	4	5
I. Community Empowerment						
a.	The conservancy employees are from our community					
b.	My CBC project has been initiated by the conservancy					
c.	The conservancy management helps our CBC project run its activities					
d.	Through my CBC project, I now earn money from the projects initiated					
e.	There is improved infrastructure attributed to conservancy projects					
II. Acceptance of wildlife conservation						
f.	We now accept conservation as a viable land use activity					
g.	We have no problem with the presence of wildlife in our land					
h.	We now accept wildlife to support tourism in our local conservancy					
III. Sustainable resource use						
i.	I have embraced new ways of supporting my family as taught by the conservancy					
j.	There is now no more poaching of wildlife in the conservancy					
k.	There is now no more charcoal burning in the conservancy					
l.	We now graze our cattle in designated areas only					
m.	Tourism is now accepted as a way of income in our conservancy					
IV. Biodiversity regeneration						
n.	There is now increased sighting of wildlife in our land					
o.	There is increased grass and tree coverage					
p.	There are now more wildlife species in our area than before					

SECTION C: Scope Determination

8. The statements below refer important aspects of project Scope Determination in Community Based Conservation project design. Based on the experience and knowledge from your conservancy, kindly tick the most suitable statement that expresses the level of inclusion of these project scope determination aspects in your project activities by indicating your level of agreement. Choose from a score of **1-5 (1 = Not at all; 2 = To a little extent; 3 = To a moderate extent; 4 = To a Great Extent; 5 = To a very great extent).**

	Statement	1	2	3	4	5
I. Project tasks						
a.	There are clear project tasks					
b.	Project tasks are customized to fit my group					
c.	The project tasks promote our livelihood					
d.	Project tasks promote conservation of wildlife					

II. Project deliverables					
e.	Project aims to achieve wise use of resources				
f.	We have clear conservation goals to achieve				
g.	We have clear local development goals				
h.	Project outputs are well documented				
III. Project Targets					
i.	The project is designed to give us an alternative livelihood				
j.	The project is meant for my age group and gender				
k.	The project is meant to conserve a particular habitat				
l.	The project is meant to conserve a particular species				

SECTION D: Capacity Building of Project Beneficiaries

9. The statements listed below provide various indicators of Capacity Building of Project Beneficiaries required in Community Based Conservation project design. Kindly tick the most appropriate statement that describes the level of Capacity Building of Project Beneficiaries included your CBC Project by indicating the level of agreement. Choose from a score of **1-5 (1 = Not at all; 2 = To a little extent; 3 = To a moderate extent; 4 = To a great extent; 5 = To a very great extent).**

	Statement	1	2	3	4	5
I. Human capital capacity building						
a.	I have been trained in various skills to improve my livelihoods					
b.	This project has supported education of my community children					
c.	The project supports health projects serving the people in my area					
II. Social capital capacity building						
d.	Traditional knowledge is used in the projects we undertake					
e.	Project supports welfare programs of my community					
f.	We often benchmark in other well performing CBC projects					
III. Financial capital capacity building						
g.	Availability of credit facilities for startups					
h.	Financial advice is given to us by the conservancy					
i.	We have access to assets for our entrepreneurial activities					
j.	The conservancy assists in marketing of our produce					
IV. Natural capital capacity building						
k.	The conservancy seeks to increase land under conservation					
l.	Land is zoned to conservation, settlement, and grazing areas					
m.	The project has initiated habitat and species recovery activities					
n.	There are initiatives to conserve water sources in the conservancy					
V. Physical capital capacity building						
o.	Buildings for livelihoods and conservation are provided to us					
p.	There is provision of tools and equipment to our CBC project activities					

q.	Projects improve infrastructure in the conservancy area					
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SECTION E: Project Monitoring and Control

10. Below are some activities practiced in projects for the purpose of project monitoring and control to ensure achievement of the set goals and should therefore form a part of Community Based Conservation project design. Kindly tick the most appropriate statement that describes the level of Monitoring and Controlling by indicating the level of agreement. The response ranges as follows; **1 = Not at all; 2 = To a little extent; 3 = To a moderate extent; 4 = To a great extent; 5 = To a very great extent.** Please tick the most appropriate response.

	Statement	1	2	3	4	5
I.	Established standards					
a.	We set goals to be achieved by our CBC project					
b.	We have established baselines for activities					
c.	There are implementations schedules					
d.	We hold frequent meetings to review our goals					
II.	Performance measurement					
e.	Data collected to measure progress					
f.	We continually record our CBC project progress					
g.	Collected data compared with established baselines					
h.	We hold meetings to discuss the collected project data					
III.	Monitoring results utilization					
i.	Project activities changed as recommended by progress meetings					
j.	Collected information used to improve activities					
k.	Future activities informed monitoring and control data					

SECTION F: Stakeholder Engagement

11. The questions below are about Stakeholder Engagement in the design of Community Based Conservation projects. Kindly tick the most appropriate statement that describes the level stakeholder engagement in your CBC Project. The response ranges as follows; **1 = Not at all; 2 = To a little extent; 3 = To a moderate extent; 4 = To a great extent; 5 = To a very great extent.** Please tick the most appropriate response.

	Statement	1	2	3	4	5
I.	Inclusion of local stakeholders					
a.	We run the projects in the conservancy					
b.	I was involved in the needs assessment of our conservancy					
c.	I am always included in the decision making					
d.	Our projects are based on our local livelihood priorities					
e.	As the residents, we approve the projects in the conservancy					
II.	Local values Integration					
f.	Our traditional ecological knowledge is integrated in the project					
g.	Conservancy team welcomes ideas from me					

h.	The conservancy pay attention to our local traditions					
i.	The conservancy meets our basic needs as a community					
III. Public Participation						
j.	I participate in implementation of project activities					
k.	Conservancy projects leadership is by our local people					
l.	Participation makes me feel that we are in control of the project					
m.	Participation in the project makes me feel my effort is appreciated					
n.	Through our project, we oversee our resources					
o.	We participate in setting rules on the use of the local resources					

SECTION G: Regulatory Environment

12. The statements below are about Regulatory Environment that is provided by various conservation agencies therefore affecting Community Based Conservation projects. Kindly tick the most appropriate statement that describes the level of regulatory environment activities by indicating the level of agreement to these statements. Choose from a score of **1-5 (1 = Not at all; 2 = To a little extent; 3 = To a moderate extent; 4 = To a great extent; 5 = To a very great extent).**

	Statement	1	2	3	4	5
I. Policing efforts						
a.	Our conservancy has enough rangers who enforce conservation law					
b.	Conservancy ranger patrols enforce grazing patterns					
c.	Conservancy has put local measures in place to detect wildlife crimes					
d.	Rangers are trained on conservation policing					
e.	Rangers are equipped to deal with conservation vices					
II. Support by Security agencies						
f.	There are KWS patrols in the conservancy area					
g.	There is a collaboration between conservancy and the KWS					
h.	KWS, KFS, Police help conservancy to deal with serious crimes					
i.	KWS helps in problem animal control to protect the local community					
j.	Local rangers are trained by government agencies					

Thank you so much for your time

THE END

Appendix C: Focused Group Discussion Schedule for the Conservancy Officials

This Focused Group Discussion is voluntary; you will not be identified without your consent. You deserve the right not to discuss, weigh in or give an opinion on the matters being discussed. However, your agreement to participate in this discussion will be taken as a consent to take part in this study and the publication of its findings thereof.

Date of interview..... Conservancy

Part A: Background Information

1. What are your roles in Conservancy Chairmen?
2. What are your roles in Conservancy Managers?

Part B: Project Design Activities in CBC projects

1. What is the purpose of the of the CBC projects in your community?
2. Who are the target beneficiaries in the CBC projects that are constituted in this conservancy?
3. What are the roles played by the community in the establishment of the CBC projects and implementation of the projects?
4. What is the role played by external organizations in the CBC projects that are implemented in the conservancy?
5. What is the connection between local livelihoods promoted by the CBC projects and wildlife conservation in the conservancy?
6. What do you think the CBC project activities should entail in order to achieve conservation and local development?
7. Which services that are derived from the environment do the members of the conservancy derive from the CBC projects?
8. CBC projects are complex undertaking involving conservation and development goals. Which capacities should be built to the local community to ensure achievement of these goals?

9. How does the community ensure that CBC projects stay on course to achieve conservation and development goals?
10. Explain the regulatory environment faced by CBC projects. How do the conservancies ensure the security of both community members and wildlife?

Part C: Indicators of Performance of CBC projects.

11. According to you, what has been the most significant change (positive or negative) brought about by this project in terms of.
 - a. Ecological changes in species and habitats
 - b. Economic changes of the local community
 - c. Behavioral changes in the ways of life
 - d. Attitudinal changes towards wildlife and conservation
12. Please explain why you consider this to be the Most Significant Change.”

Closing Remark:

Thank you for your participation in this discussion. Kindly allow me to follow up with each one of you individually if I happen to require clarification during the analysis of this data.

Appendix D: Document Analysis Checklist

Type of Secondary Materials	Number
Project reports	
Strategic Plans	
M & E plans	
Patrol Reports	
Training Manuals	
Conservation Agreements	
Financial Reports	
Benefit Sharing Agreements	

Appendix E: Research License

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 152573	Date of Issue: 12/December/2019
RESEARCH LICENSE	
	
<p>This is to Certify that Mr., Hussein Ndonye of University of Nairobi, has been licensed to conduct research in Laikipia on the topic: PROJECT DESIGN ACTIVITIES, REGULATORY ENVIRONMENT AND PERFORMANCE OF COMMUNITY BASED CONSERVATION PROJECTS IN KENYA: A CASE OF LAIKIPIA REGION CONSERVANCIES for the period ending : 12/December/2020.</p>	
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Appendix F: Focused Group Discussion Thematic Matrix

Respondent	Performance of CBC Projects	Scope Determination	Capacity Building of Beneficiaries	Monitoring and Control	Stakeholder Engagement	Regulatory Environment
Manager 1	There is increased wildlife population Grevy's Zebra had migrated due to habitat destruction are now back People are positive because they are benefiting	CBC project youth membership increasing Reclaiming of former grasslands affected by erosion	Restoration of rangelands by gully healing Renovation of 2 tourism facilities Cameras for monitoring purposes donated Youth trained on encroachment and mitigation of rustling 2 ranger outposts constructed	Quarterly progress meetings We are implementing suggestions from meetings AGM coming soon	The community members take the lead in our progress meetings Youth and women meeting already held	There are patrols in the core conservation area 2 more ranger outposts constructed
Manager 2	Elephant population has increased recently Bushland has regenerated Beadworks income has increased Grazing committees are actively involved	Youth training has been done Moran exposure tour upcoming	11 rangers have been trained and given KPR status Removal of invasive Opuntia cactus Exposure tours to Samburu County New vehicle for use in the conservancy Women trained on conservation	Quarterly progress meetings AGM has been already conducted, currently implementing resolutions	We have roundtables to plan livelihood initiatives and conservation Youth tournament will be held; Youth forum already done Community has identified 6 sites for Opuntia cactus eradication	There has been improved security in the conservancy 12 rangers in the conservancy 11 are armed and have NPR status
Manager 3	There has been increased spotting of giraffes and impalas Tourism proceeds from local lodge Study on rhino reintroduction has been done Positive attitudes towards the livelihood projects	Youth have been targeted for <i>boda boda</i> enterprise More women are engaged in beadworks	Revolving Fund to aid in enterprise capital Ksh. 3 million utilized for livelihood projects Construction of a clinic Ksh. 1.3 million disbursed as bursaries New vehicle for use in the conservancy	Quarterly progress meetings Earned 2 awards for prudent financial management Continuous monitoring of conservation activities and livelihoods		18 community rangers 13 rangers are armed and have NPR status

	Big elephant families especially during the wet season		New investor for the lodge, 50-year lease worth Ksh. 26m Rangers trained on monitoring by NRT			
Manager 4	Beadworks income has increased Increased records of new species in the habitats Tourism proceeds from local lodge Rare species of antelope, Hirola spotted	Morans given exposure tours to Samburu County There is restoration of rangelands through gully healing	50 acres rehabilitated through gullies healing and reseeding Registration of community land Youth Benchmarking tour to Kalama Conservancy New vehicle for use in the conservancy	Quarterly progress meetings We are implementing suggestions from meetings	Youth engaged through tours 2 grazing committee meetings held Board has formed finance, tourism, and grazing committees to engage the community better	Patrols by rangers in the conservancy has improved security Injured elephant treated with assistance of NRT
Manager 5	Beadworks income has increased	Morans are targeted for enterprises	Rangeland management training for members Youth and women given startup loans Digital radios for communication Vehicle for patrols, but it has mechanical problems	Quarterly progress meetings Board meeting held to discuss financial matters Audit report is out, and recommendations being implemented	Local community encouraged to continue with bee keeping	There are now 34 rangers 20 rangers are armed and have NPR status Rangers always patrol Mukogodo forest
Chairman 1	There is innovation in the community Bead work benefits women a lot We encourage people to join CBC projects to earn a living; Monitoring team reports wildlife increase; Oct 2019 census point to increased wildlife populations and reappearance of species that had been locally extinct (Grevy's Zebra)	We target charcoal burners, traditional alcohol brewers	NRT through conservancy management offers loans to members NRT sources for markets for Bead and Livestock Works Student bursaries are availed to empower community	Monitoring and control exercised through conservancy managers. They have full data of every single activity of the projects. Quarterly Reports of each and every activity Wildlife monitoring unit within the conservancy	In the conservancy organization structure, community is at the top We do our work as a collective community	KWS regulates conservancies by licensing them No KWS outposts in the conservancies but are involved in extreme security issues involving conservation.

	Vegetation regeneration					
Chairman 2	<p>Our communities now no longer rely on cattle alone</p> <p>Charcoal burners have abandoned the vice</p> <p>Charcoal burning is no longer rampant</p> <p>Local people attitude towards conservation have changed</p>	<p>The projects target the youth, the women, and the men.</p>	<p>Provision of capital for startups</p> <p>Training of youths and women</p> <p>Salary for rangers for the conservancies</p>	<p>Periodical reporting</p> <p>Managers have to keep records of all activities</p>	<p>Resources we oversee belong to the community</p> <p>Chairman coordinates conservation and livelihood activities with the community</p>	
Chairman 3	<p>Household incomes have made then like wildlife; Conservation projects are approved faster than even government projects</p> <p>We have diversified our livelihoods; it is no longer about cattle only; Ecotourism enterprises has economically empowered locals</p> <p>New towns have grown because of livelihood activities</p> <p>Scholarships money comes from conservation projects</p> <p>Ewaso primary school is build, staffed, and equipped by proceeds of conservation</p>	<p>Morans are targeted to make sure they are not idle</p> <p>Conservancy prioritizes women and youth as they are the most vulnerable, men own the land and the livestock.</p>	<p>2 facilities supporting livelihood projects renovated</p> <p>Conservancy revolving Fund loans to Morans to make sure they are not idle</p> <p>There is reseeded of rangelands to regenerate them</p> <p>Morans trained on the kind of business they want to engage in</p>	<p>We monitor the use of finances and all activities of the projects</p> <p>Records of all activities in the conservancy office</p> <p>Manager follows up based on the records provided and discussed by the board</p> <p>The board intervenes in extreme cases of no performance</p>	<p>We act for the community; they give us that authority</p> <p>We manage our affairs based on local traditions</p>	<p>Conservancies work with KFS too due to issues that relate to trees like charcoal burning</p> <p>KWS doesn't have a single post in the entire Naibunga Conservancy</p> <p>Works with police to stamp out vices like cattle rustling in the conservancy</p>

Appendix G: Focused Group Discussion Sub-Themes Matrix

Theme	Sub-themes	Statements
Performance of CBC Projects	Community empowerment	<ul style="list-style-type: none"> • Income from employment, bead works, livestock works, Tourism, Moran enterprises • New towns and infrastructure have sprouted because of livelihood activities • Education in the conservancy community has been majorly boosted, learners have benefited from bursaries, schools have been constructed staffed and equipped by these projects • Health has been improved with immunizations, nutrition training and construction of clinics
	Acceptance of wildlife conservation	<ul style="list-style-type: none"> • Due to benefits from projects, community positive attitude towards conservation has been noted • Positive attitudes towards the projects as they promote livelihoods • No one complains of presence of wildlife in their locality
	Sustainable resource use	<ul style="list-style-type: none"> • Charcoal burners have since abandoned the vice and embraced other livelihood initiatives • Grazing systems are in place to take care of the habitats • Increased local innovation by the community in livelihood and enterprise • Diversification of livelihoods, community does not rely on cattle alone
	Biodiversity regeneration	<ul style="list-style-type: none"> • Reappearance of locally extinct species (Hirola) • Increased wildlife population (Reticulated giraffe, elephants, impalas, Grevy's Zebra) • Vegetation has regenerated due to the end of charcoal burning and reseeded of rangelands • Studies of rhinoceros reintroduction being done owing to the success of conservation so far
Scope determination	Project tasks	<ul style="list-style-type: none"> • Reseeding of rangelands • Gulley filling to avoid erosion • Elimination of invasive species from the rangelands • Paddocking of the conservancy areas to control grazing
	Project deliverables	<ul style="list-style-type: none"> • Youth, women, and tourism enterprises to promote local livelihoods • Rejuvenated rangelands
	Project targets	<ul style="list-style-type: none"> • Youths, women are targets in the livelihood projects • Women are targets in community health initiatives • Charcoal burners, alcohol brewers are targeted • Rangelands are targeted for rehabilitation • Invasive species are targeted for elimination to restore rangelands

		<ul style="list-style-type: none"> • Livestock owners targeted so as to practice bunched grazing
Capacity building of project beneficiaries	Human capacities enhanced	<ul style="list-style-type: none"> • Education support through bursaries, construction, staffing and equipping of schools • Health support through construction and staffing of clinics • Rangers trained and given KPR status • Youth and women training on livelihood activities • Rangeland management training courtesy of NRT
	Social capacities enhanced	<ul style="list-style-type: none"> • Training of youth on mitigation of cattle rustling and encroachment • Youth benchmarking tours to well established conservancies in Samburu County
	Physical capacities enhanced	<ul style="list-style-type: none"> • Renovation of tourism facilities and development of new ones • Rangers' facilities and equipment for rangers (radios, outposts, cameras, GPS) • New vehicles for use in conservancy operations
	Financial capacities enhanced	<ul style="list-style-type: none"> • Established enterprise fund that has funded youth and women startups • Sourcing of new investor for the Il Ngwesi Ecolodge • Market integration by NRT to promote bead, livestock, and tourism works enterprises
	Natural capacities enhanced	<ul style="list-style-type: none"> • Habitat reclamation through reseeding of rangelands; gully healing; controlling the spread of invasive species • Registration of community land to enable legal local ownership • Planned re-introduction of species (rhinoceros)
Monitoring and control	Establishment of standards	<ul style="list-style-type: none"> • Meetings to plan what CBC projects will do • Establishment of grazing zones and wildlife zones and their management committees
	Performance Measurement	<ul style="list-style-type: none"> • Meetings by Committees and AGMs to review progress • Awards for prudent financial management (Il Ngwesi) • Continuous recording by managers on state of habitats, livelihoods projects through • Auditing of conservancy finances to ensure prudent use of resources
	Monitoring and control results utilization	<ul style="list-style-type: none"> • Implementation of suggestions and resolutions of the progress meetings
Stakeholder engagement	Inclusion of local stakeholders	<ul style="list-style-type: none"> • Conservancy organization structure has local community at the apex • CBC project decisions are inclusive, you and women groups are involved • Resources in the conservancy belong to the local community, we are just representatives

		<ul style="list-style-type: none"> • Six sites of invasive species identified by the community
	Local values Integration	<ul style="list-style-type: none"> • Traditional practices like cattle grazing, bee keeping (especially in Lekurruki conservancy) are encouraged • Local traditions guide community in running CBC projects
	Public participation	<ul style="list-style-type: none"> • Conservancy matters collectively decided by the community • Finance, tourism, grazing and women committees to make sure there is bottom-up approach • During progress meetings, community takes the lead in setting the agenda • Community forums to discuss livelihood matters
Regulatory Environment	Policing efforts	<ul style="list-style-type: none"> • There are patrols in the core conservation areas to ensure wildlife and habitats are secure • Rangers monitor wildlife and habitats
	Support by Security agencies	<ul style="list-style-type: none"> • Rangers are trained, armed, and given KPR status • KWS regulates conservancies through licensing them • KWS, police are involved in poaching and extreme security issues in the conservancies • Conservancies work with KFS on issues concerning trees and especially charcoal burning and logging

Appendix H: Document Analysis Thematic Matrix

Document	Performance of CBC Projects	Scope Determination	Capacity Building of Beneficiaries	Monitoring and Control	Stakeholder Engagement	Regulatory Environment
NRT (2016)	<ul style="list-style-type: none"> • Employment opportunities • Land use has changed to mainly conservation • Reduced poaching • Bunched grazing • Increase on Grevy's Zebra numbers • Increased size of land under conservation 	<ul style="list-style-type: none"> • Youth targeted • Women targeted • Rangelands targeted for rehabilitation • Elephant, wild dog, and cheetah targeted for conservation 	<ul style="list-style-type: none"> • Technical support for conservancy management • 1,924 learners received bursaries • Schools, clinics, tourism infrastructure • Training of Rangers • Benchmarking trips • Peace committees • Community microfinance • Rangeland rehabilitation 	Progress meetings (committees, AGMs)	<p>Community is dominant decision maker and enforcer</p> <p>Traditional community set ups recognized</p> <p>Science used to enrich local traditional knowledge systems</p> <p>Community involved in planning, management, and resource use</p>	<p>Rangers create zero poaching landscape</p> <p>Ranger policing and surveillance</p> <p>KWS trains rangers</p> <p>Human wildlife conflict mitigation measures</p>
NRT (2017)	<ul style="list-style-type: none"> • 6m earned from beadwork • Employment in the tourism enterprises • Proportion of illegally killed elephants reduces from 56% TO 34%. • Increased number participating in beadwork • 13.8% increase in elephant population • 48.8% increase in giraffe population • 10.5% increase in buffalo population 	<p>Sanctuary established for flagship species</p> <p>Youth and women targeted for empowerment</p> <p>Microfinance services for youth and women</p>	<p>Tourism facilities, roads, buildings, airstrips</p> <p>Regional and county level grazing planning</p> <p>Microfinance targeting youth and women enterprises</p> <p>Training of conservancy management</p> <p>86 peace meetings conducted</p>	<p>Healthy rangeland as deliverable</p> <p>Progress meetings (committees, AGMs)</p>	<p>Expenditure decisions endorsed to reflect local priorities</p> <p>Community takes lead in management of the local natural resources</p>	<p>748 rangers for policing in 2017</p> <p>Human wildlife conflict mitigation measures</p> <p>KWS assisted in census of wildlife</p> <p>Antipoaching initiatives</p> <p>Problem animal control by conservancy rangers and the KWS</p>

	<ul style="list-style-type: none"> • 1,478 acres cleared of invasive species • Stable increasing wildlife population • 1,012 permanent staff employed • 68% feel security has improved 					
NRT (2018)	<p>1,021 engaged in beadwork Ksh. 4.7million from bead works Ksh. 94 million from livestock works Ksh. 86 million from tourism enterprises Stabilization of key wildlife species 1,478 hectares cleared of invasive species 1,012 permanent staff</p>	<p>Awareness meetings targeting youth/women Flagship species habitats prioritized Invasive species targeted for eradication</p>	<p>Awareness training for 420 youth Rangeland and peace initiatives engaged 850 women In human rights training, 420 rangers benefited Traditional institutions empowered</p>	<p>Wildlife monitoring Vegetation monitoring Satellite monitoring Progress meetings (committees, AGMs)</p>	<p>Bead work turns traditional craft into sustainable business Traditional grazing management systems Traditional governance used Customary laws in conservation Traditional laws in dispute resolution Community led decision making Women, elders, youth have a say in conservancy matters</p>	<p>Rangers work with police in antipoaching and security Community policing to protect people and wildlife</p>
NRT (2019)	<p>1,309 permanent employees in conservancies 2737 temporary jobs created in 2019 Ksh. 133 million from tourism enterprises Ksh. 60 million from livestock works Ksh. 9.1 million from bead works</p>	<p>Goal to rehabilitate 7,000 hectares Youth, women targeted for livelihoods and peace</p>	<p>Ksh. 4.7 million invested in tourism infrastructure 160 km of conservancy roads graded 5km of airstrip graded Ksh. 50 million invested in livelihoods 3,077 learners funded</p>	<p>Progress meetings (committees, AGMs) Social monitoring to capture perceptions and feedback A baseline survey of habitats Vegetation monitoring Wildlife monitoring</p>	<p>Traditional council of elders included in management and peace Engagement of youth, women in projects and peace</p>	<p>Fencing to avoid human wildlife conflicts in some areas Collaboration with KWS, Police, Kenya Forest Service (KFS)</p>

			1,489 youth and women benefited from microfinance 66 teachers trained 750 learners undertook conservation trips School supplies Opuntia eradication 76 peace ambassadors across conservancies 721 rangers trained			
ILRI Project (2018)	Il Ngwesi conservancy generates income eco-tourism Community has noted changes in biodiversity overtime	Women targeted through handcrafts	Systematic grazing plans Bunched grazing Rangeland reseeding NRT, LWF conduct training workshops There's marketing for women's handicraft	ME is part of the conservation approach Monitoring of resource use at the neighborhood level	Community guided by indigenous knowledge Community members establish own rules Community participates in all stages of project Village committees involved in ME, grazing planning There are discussions and deliberation with elders on pertinent issues.	NRT paid scouts support community in monitoring wildlife populations
Lekurruki Conservancy Management and Community Development Plan 2016-2020		Action Plan identifies deliverables that are areas of partnership Specific conservation goals identified, and priority action areas are set.	Physical Capitals: roads, Tassia lodge, 3km airstrip Human Capital: Health, Education, Nutrition Social capitals: Local institutions	Measuring success: Conservancy to set up monitoring tools Status monitoring of rangelands, wildlife, livelihoods, opinions	Members to participate in project planning process. Expenditure priority decisions to be made at AGM with all conservancy members present.	Plan to increase conservancy rangers' outposts Plan to strengthen community policing and communication
Naibunga Conservancy Management and Community		Plans of partnerships and enhancement of enterprises in Naibunga Specific conservation goals identified, and	Plan to achieve climate resilience through building of social capitals	Measuring success: Conservancy to set up monitoring tools Monitoring wildlife, rangelands, and livelihoods status.	Decisions on spending priorities to be made at AGMs Locals participate in decision making	Plans to increase the number of rangers in every settlement, create awareness human wildlife conflicts, work

Development 2017-2021		priority action areas are set	Plan to equip conservancy rangers to respond to poaching Plan to renovate existing tourist activities Seek tourism investors Develop innovative and unique tourism attractions	AGMs to monitor progress and make changes based on reports	Inclusion of local stakeholders in the planning process	with KWS to ensure immediate responses Create strong partnership with KWS, other ranches to address poaching
NRT Strategic Plan 2018-2022	KWS surveys indicate increase in elephant and reticulated giraffe Populations Wildlife-CoMMS data show increase in eland, oryx, giraffe, gerenuk, cheetah, lion, and wild dogs are increasing in several conservancies	Well planned objectives to be achieved in the conservancies: Governance, Peace and Security, Community Livelihoods, and Natural resources.	Boost natural capital by curtailing spread of invasive plants which threaten rangeland productivity Strengthen planning Trainings Financial support Invest in leadership and governance skills	NRT's internal monitoring systems including social surveys and wildlife monitoring There are community-based vegetation and wildlife monitoring and feedback systems in place	Enhancing traditional governance Integration of traditional knowledge systems to natural resource management Build on the best Traditional management practices with new technologies	

Appendix I: Document Analysis Sub-Themes Matrix

Theme	Sub-themes	Statements
Performance of CBC Projects	Community empowerment	<ul style="list-style-type: none"> • Employment opportunities for the local communities • Earnings from beadwork, youth enterprises, tourism, and livestock-works
	Acceptance of wildlife conservation	<ul style="list-style-type: none"> • Increase in acreage of land put into conservation shows community acceptance • Community readily accepts block and bunched grazing to help habitats to recover
	Sustainable resource use	<ul style="list-style-type: none"> • Land use changed mainly to conservation and land under conservation has been increasing • Reduced poaching incidences, proportion of illegally killed elephants has reduced • Bunched grazing has contributed to the rejuvenation of rangelands • Reduced poaching in the conservancy areas due to patrols of rangers
	Biodiversity regeneration	<ul style="list-style-type: none"> • Increase in Grevy's Zebra, elephant, buffalo, oryx, eland, gerenuk, cheetah, lion, wild dogs, and reticulated giraffe populations • Increased acreage of land rejuvenated after gully filling and elimination of invasive species
Scope determination	Project tasks	<ul style="list-style-type: none"> • Enterprise startups for livelihood projects • Bead craft, livestock husbandry, livestock fattening • Paddocking of the conservancy areas to control grazing • Infrastructure improvement
	Project deliverables	<ul style="list-style-type: none"> • Good infrastructure (for tourism, education, health, conservancy management) • Develop innovative and unique tourism attractions • Plan to equip conservancy rangers to respond to poaching • Plans to improve community development services, peace building and security, conserve wildlife, grow and diversify local economy, and improve the condition of rangelands
	Project targets	<ul style="list-style-type: none"> • Youth and women groups are targets for livelihood and empowerment • Wildlife species (elephants, cheetah, wild dogs, lions) are targets for conservation • Rangelands are targets for rehabilitation
Capacity building of project beneficiaries	Human capacities enhanced	<ul style="list-style-type: none"> • Technical training, education support through infrastructure and bursaries • Health support through nutrition training and establishment of health facilities • Family planning and reproductive health training

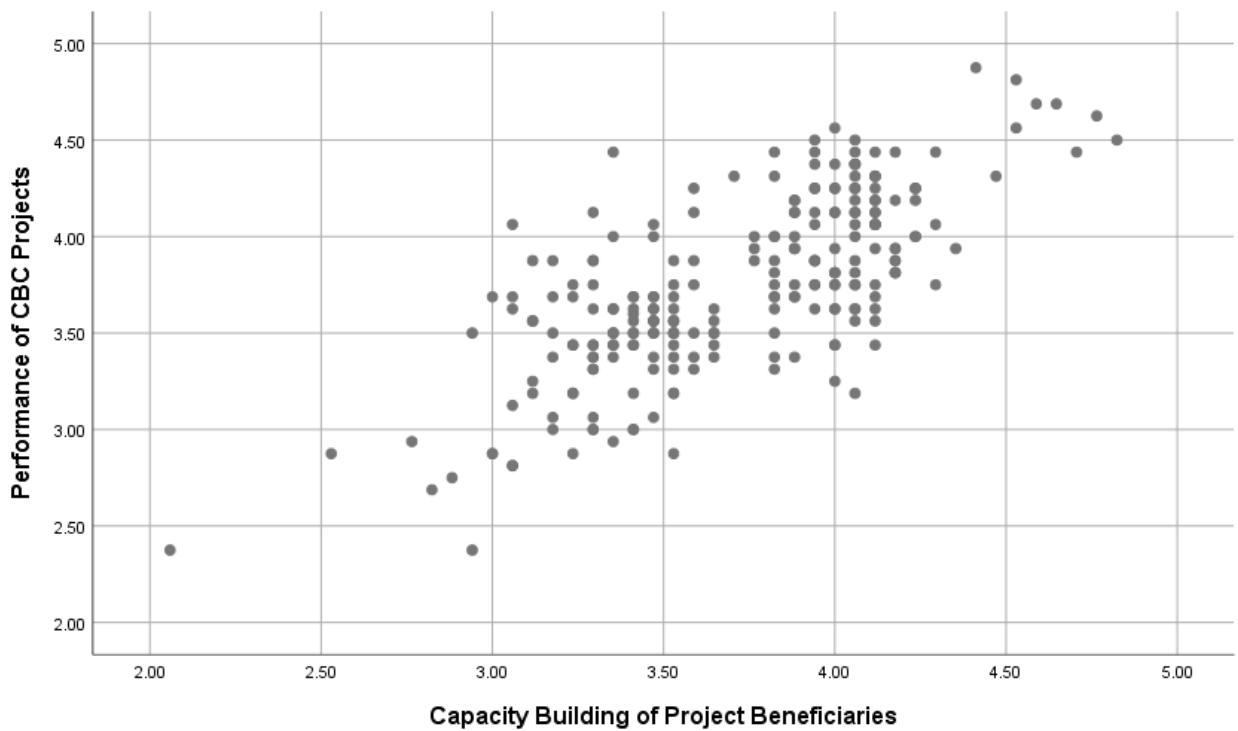
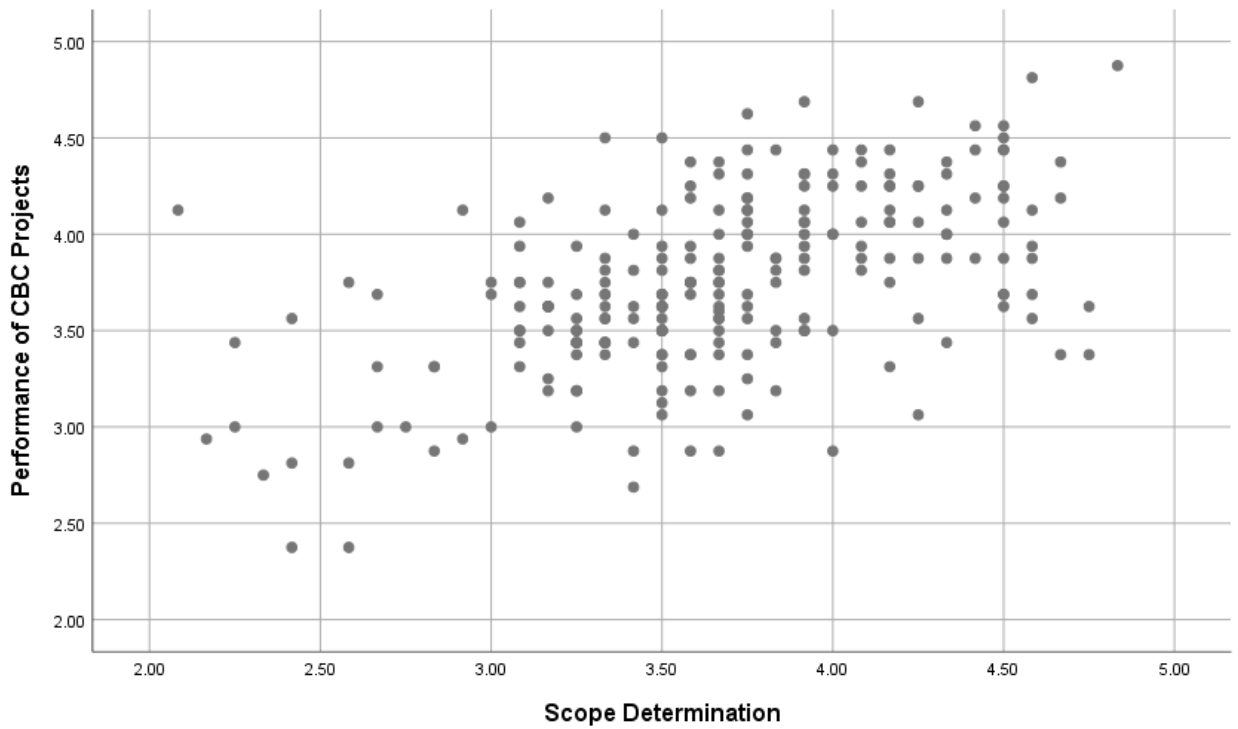
	Social capacities enhanced	<ul style="list-style-type: none"> • Benchmarking trips for exposure in better successful conservancies • Peace meetings in the community for cohesion purposes • Indigenous establishments empowered to facilitate local resource governance • Conservation trips for school going children to inculcate conservation at early ages • Peace ambassadors across the conservancies to improve social cohesion
	Physical capacities enhanced	<ul style="list-style-type: none"> • Tourism, health facilities and schools renovated or/and new ones constructed • Roads, airstrips in the conservancies paved • Conservancy management tools, facilities, and infrastructure
	Financial capacities enhanced	<ul style="list-style-type: none"> • Community microfinance services (loans and revolving funds) • Marketing for women handicrafts • Seeking of tourism investors to invest in local tourism facilities
	Natural capacities enhanced	<ul style="list-style-type: none"> • Sanctuary establishment for flagship species • Reseeding assistance to the communities • Seasonal and bunched grazing • Reclaiming land through elimination of invasive species of plants
Monitoring and control	Establishment of standards	<ul style="list-style-type: none"> • Planning of conservancy operations
	Performance Measurement	<ul style="list-style-type: none"> • Progress meetings, AGMs • Satellite views to establish vegetation cover overtime • Vegetation monitoring, wildlife monitoring and social monitoring
	Monitoring and control results utilization	<ul style="list-style-type: none"> • Implementation of suggestions and resolutions of the progress meetings • The efforts of rehabilitation, reintroduction is based of monitoring
Stakeholder engagement	Inclusion of local stakeholders	<ul style="list-style-type: none"> • Community is the main decision maker • All demographic groups recognized in conservancy and livelihoods planning
	Local values Integration	<ul style="list-style-type: none"> • Traditional community governance recognized • Science is only used to enrich traditional knowledge systems; technology builds of traditional ecological knowledge. • Bead work turns traditional craft into sustainable business • Traditional grazing systems in use
	Public participation	<ul style="list-style-type: none"> • Conservation and livelihoods planning involves all members of the community

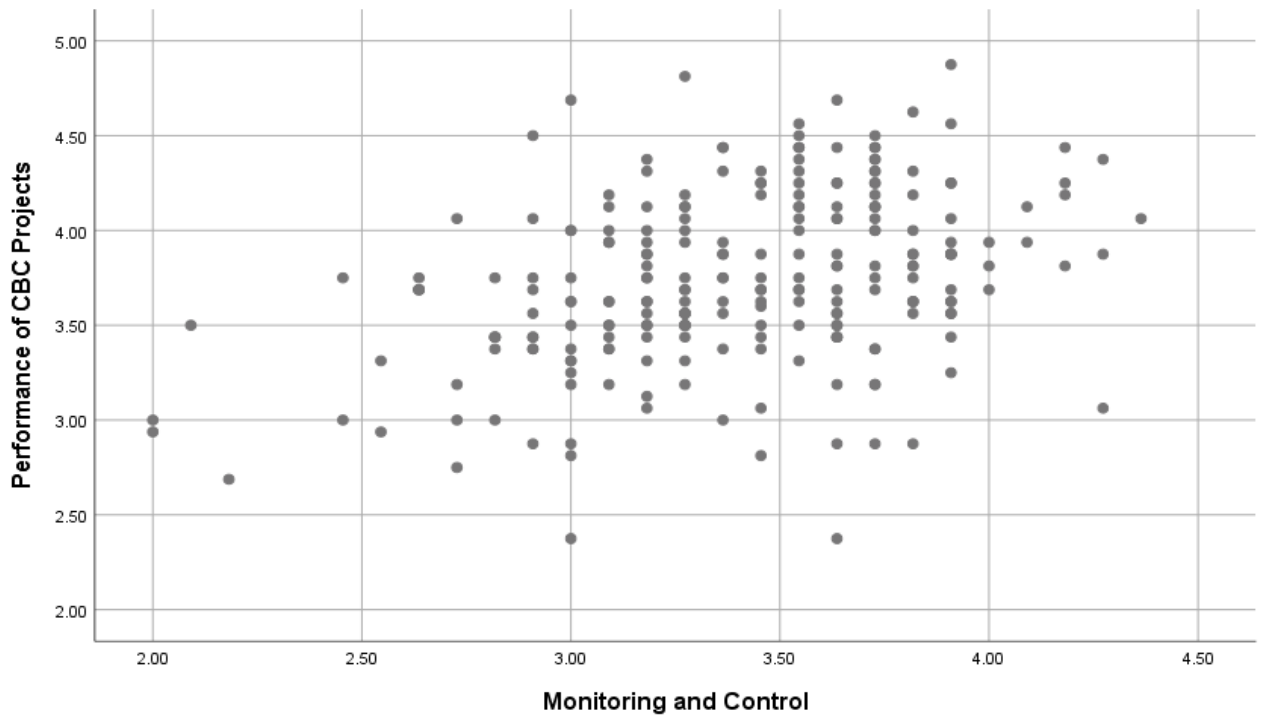
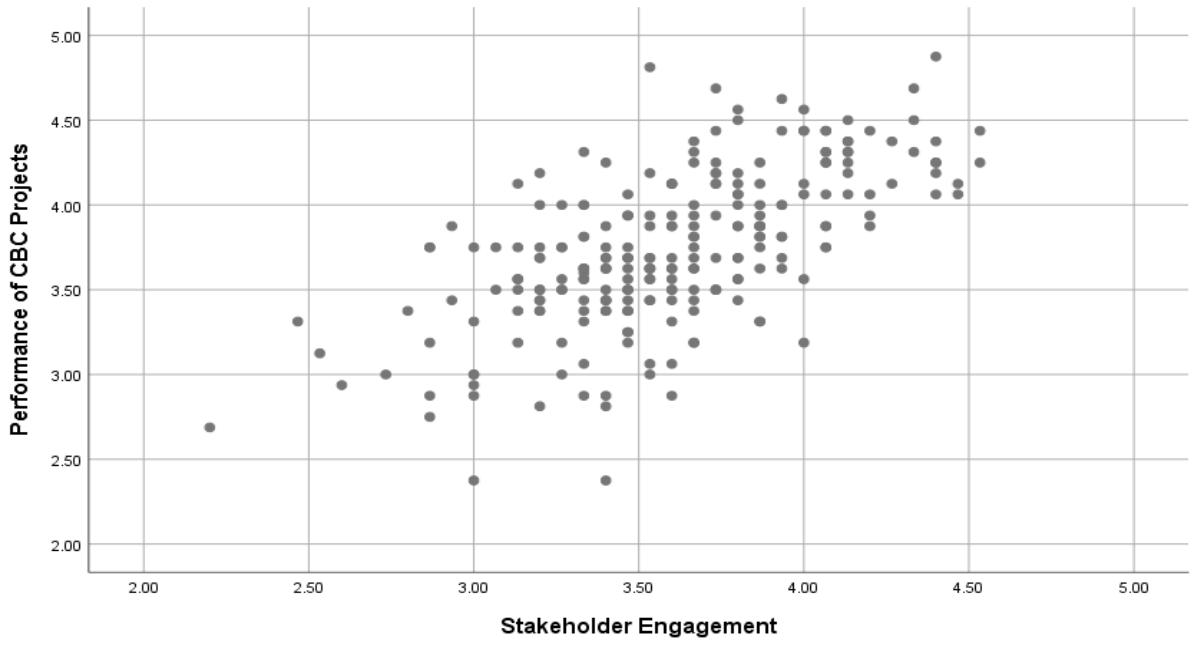
		<ul style="list-style-type: none"> • Expenditure decisions endorsed to reflect local priorities • Monitoring and evaluation done through village committees/groups
Regulatory Environment	Policing efforts	<ul style="list-style-type: none"> • Rangers create zero poaching landscape through policing and surveillance • Fencing in some areas to mitigate human wildlife conflicts • KFS involved in prevention of charcoal burning vice
	Support by Security agencies	<ul style="list-style-type: none"> • Training of rangers by KWS • KWS involved in census, mitigation of human wildlife conflict across the conservancies • KWS and police plays central role in curbing serious poaching

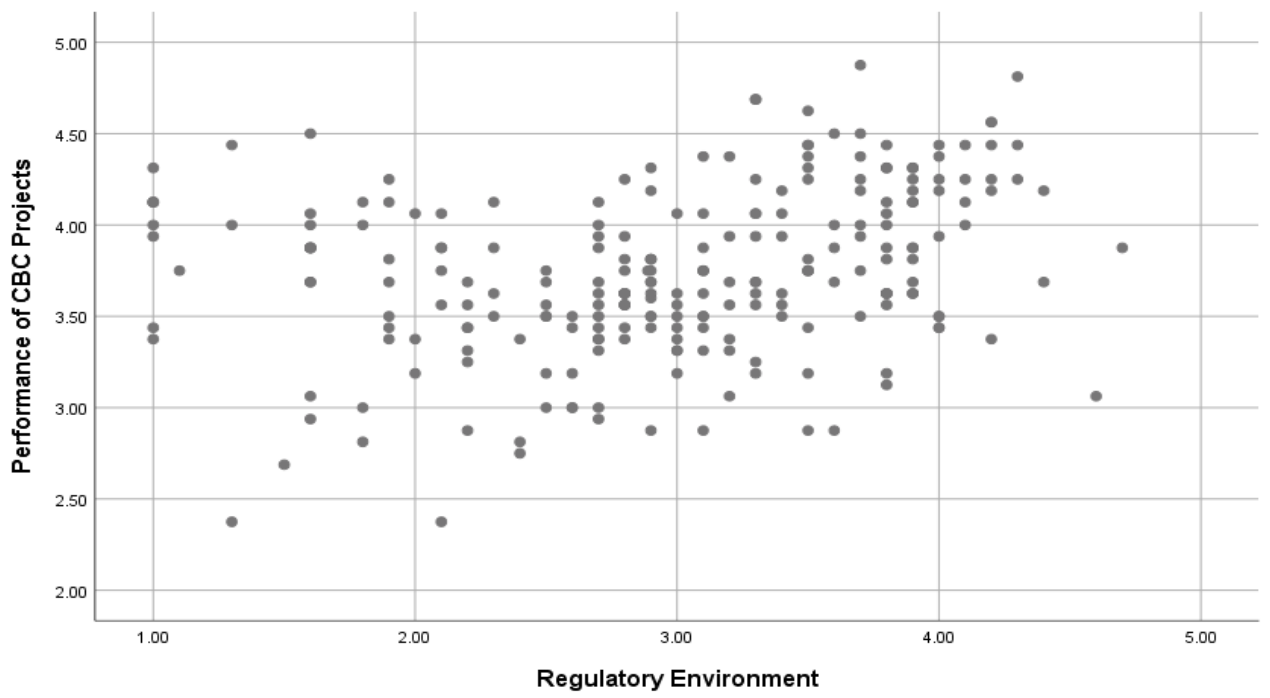
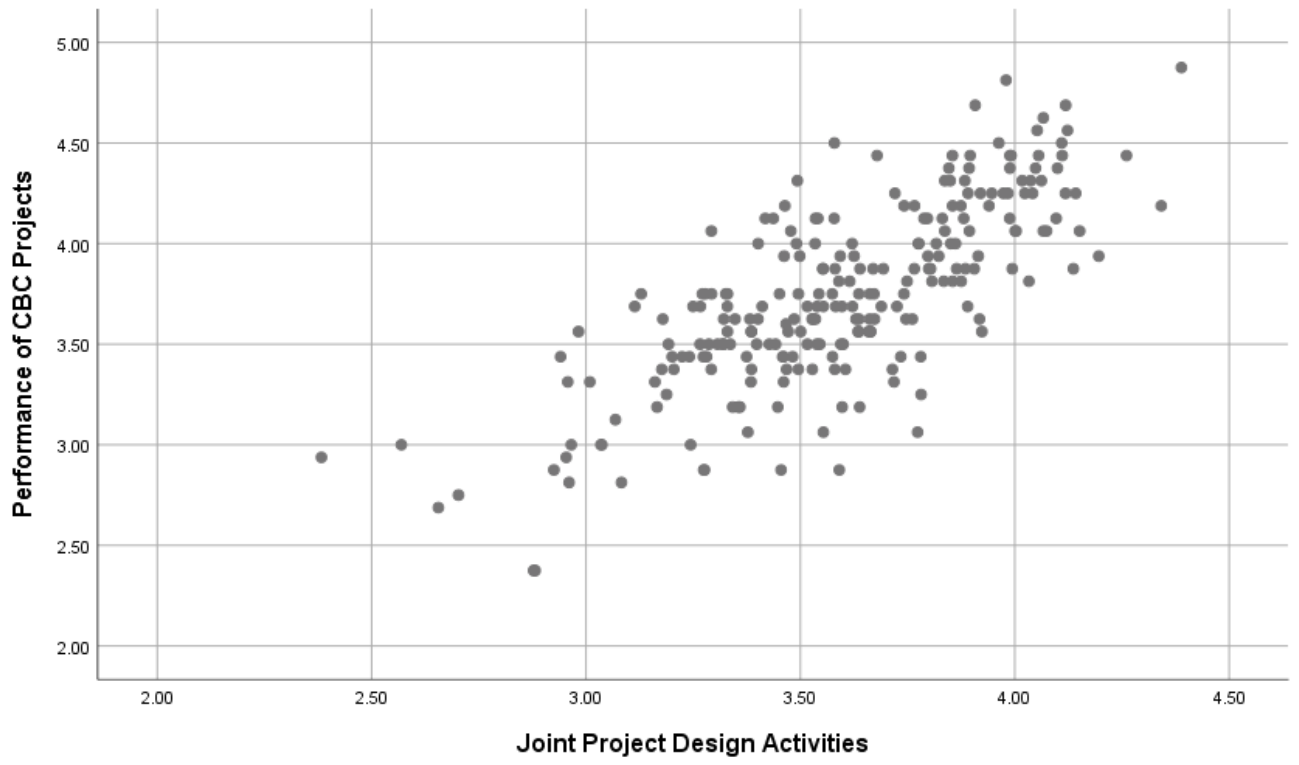
Appendix J: Collinearity Statistics

Scope Determination		
	Tolerance	VIF
Capacity building of project beneficiaries	.647	1.545
Monitoring and Control	.683	1.464
Stakeholder Engagement	.514	1.947
Regulatory Environment	.810	1.235
Capacity building of project beneficiaries		
Monitoring and Control	.647	1.545
Stakeholder Engagement	.588	1.700
Regulatory Environment	.883	1.132
Scope Determination	.776	1.288
Monitoring and Control		
Stakeholder Engagement	.619	1.617
Regulatory Environment	.809	1.236
Scope Determination	.812	1.231
Capacity building of project beneficiaries	.642	1.558
Stakeholder Engagement		
Regulatory Environment	.824	1.213
Scope Determination	.792	1.263
Capacity building of project beneficiaries	.756	1.323
Monitoring and Control	.801	1.248
Regulatory Environment		
Scope Determination	.767	1.304
Capacity building of project beneficiaries	.698	1.433
Monitoring and Control	.645	1.551
Stakeholder Engagement	.507	1.973

Appendix K: Linearity Tests







Appendix L: Regression of Scope Determination and Performance of CBC Projects

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	SCOPEDETERMIN ^b	.	Enter
a. Dependent Variable: PERFORMANCE			
b. All requested variables entered.			

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson	
					R Square Change	F Change	df1	df2		Sig. F Change
1	.542 ^a	.294	.291	.38246	.294	98.237	1	236	.000	1.838

a. Predictors: (Constant), SCOPEDETERMIN

b. Dependent Variable: PERFORMANCE

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.370	1	14.370	98.237	.000 ^b
	Residual	34.522	236	.146		
	Total	48.892	237			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), SCOPEDETERMIN

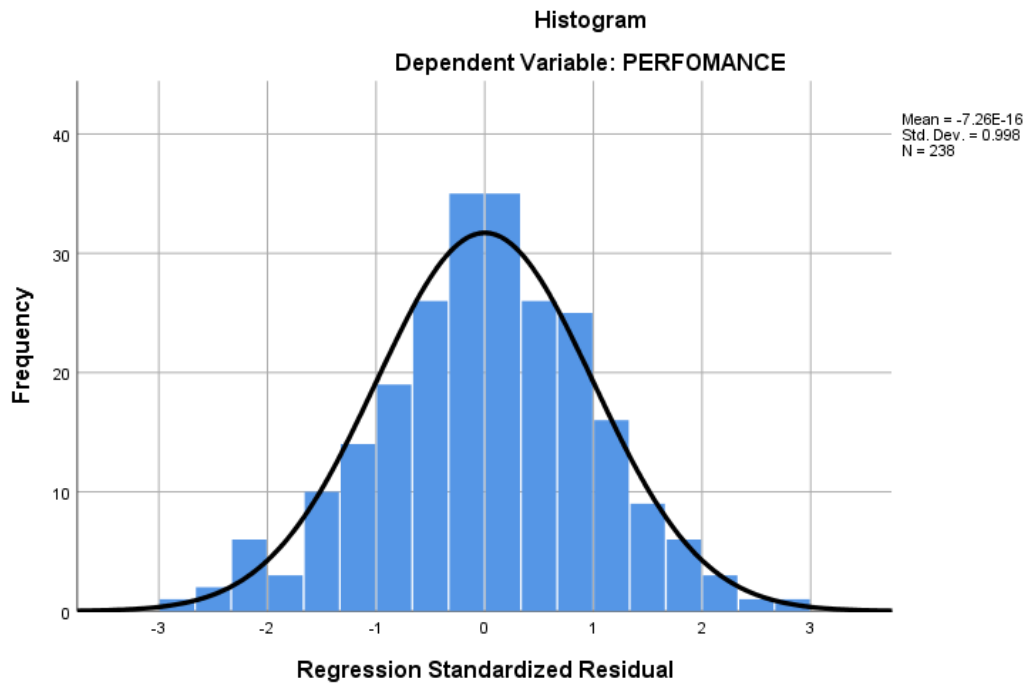
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.097	.168		12.466	.000
	SCOPEDETERMIN	.450	.045	.542	9.911	.000

a. Dependent Variable: PERFORMANCE

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0341	4.2718	3.7452	.24624	238
Residual	-1.02177	1.09086	.00000	.38166	238
Std. Predicted Value	-2.888	2.139	.000	1.000	238
Std. Residual	-2.672	2.852	.000	.998	238

a. Dependent Variable: PERFORMANCE



Appendix M: Regression of Capacity Building of Project Beneficiaries and Performance of CBC Projects

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	CAPACITYBUILDING ^b	.	Enter

a. Dependent Variable: PERFORMANCE

b. All requested variables entered.

Model Summary^b

Model	R	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
					F Change	df1	df2		
1	.727 ^a	.529	.31252	.529	264.584	1	236	.000	1.785

a. Predictors: (Constant), CAPACITYBUILDING

b. Dependent Variable: PERFORMANCE

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.842	1	25.842	264.584	.000 ^b
	Residual	23.050	236	.098		
	Total	48.892	237			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), CAPACITYBUILD

Coefficients^a

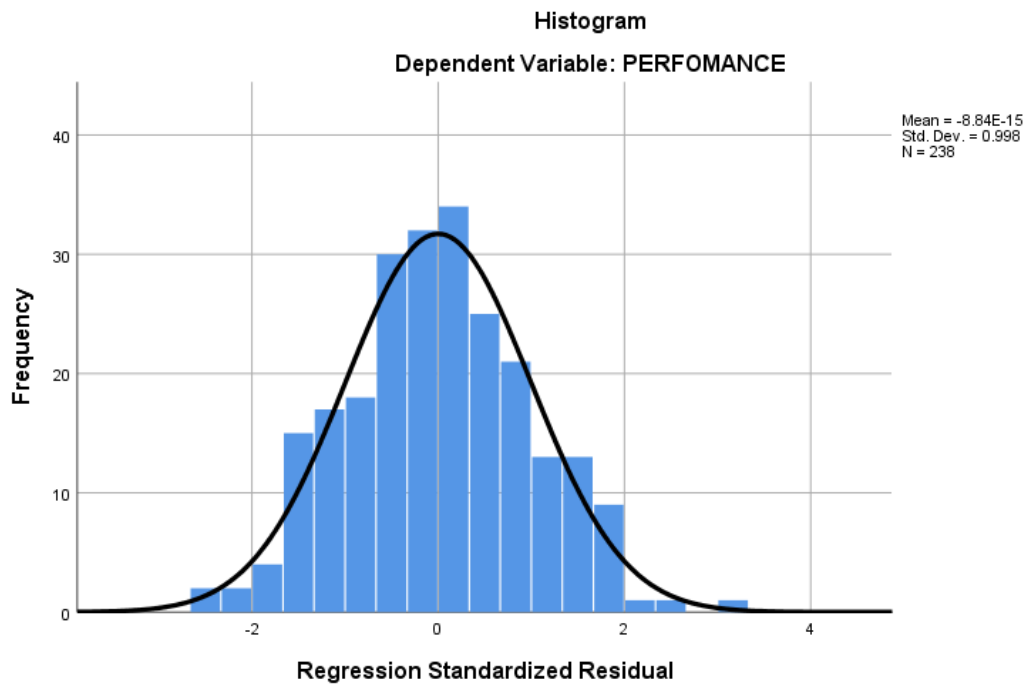
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.883	.177		4.984	.000
	CAPACITYBUILD	.771	.047	.727	16.266	.000

a. Dependent Variable: PERFORMANCE

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.4698	4.6007	3.7452	.33021	238
Residual	-.82380	.97028	.00000	.31186	238
Std. Predicted Value	-3.862	2.591	.000	1.000	238
Std. Residual	-2.636	3.105	.000	.998	238

a. Dependent Variable: PERFORMANCE



Appendix N: Regression of Monitoring and Control and Performance of CBC Projects

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	MONITORING ^b	.	Enter

a. Dependent Variable: PERFORMANCE

b. All requested variables entered.

Model Summary^b

Model	R	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Change Statistics		Sig. F Change	Durbin-Watson
						df1	df2		
1	.380 ^a	.145	.42099	.145	39.870	1	236	.000	1.790

a. Predictors: (Constant), MONITORING

b. Dependent Variable: PERFORMANCE

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.066	1	7.066	39.870	.000 ^b
	Residual	41.826	236	.177		
	Total	48.892	237			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), MONITORING

Coefficients^a

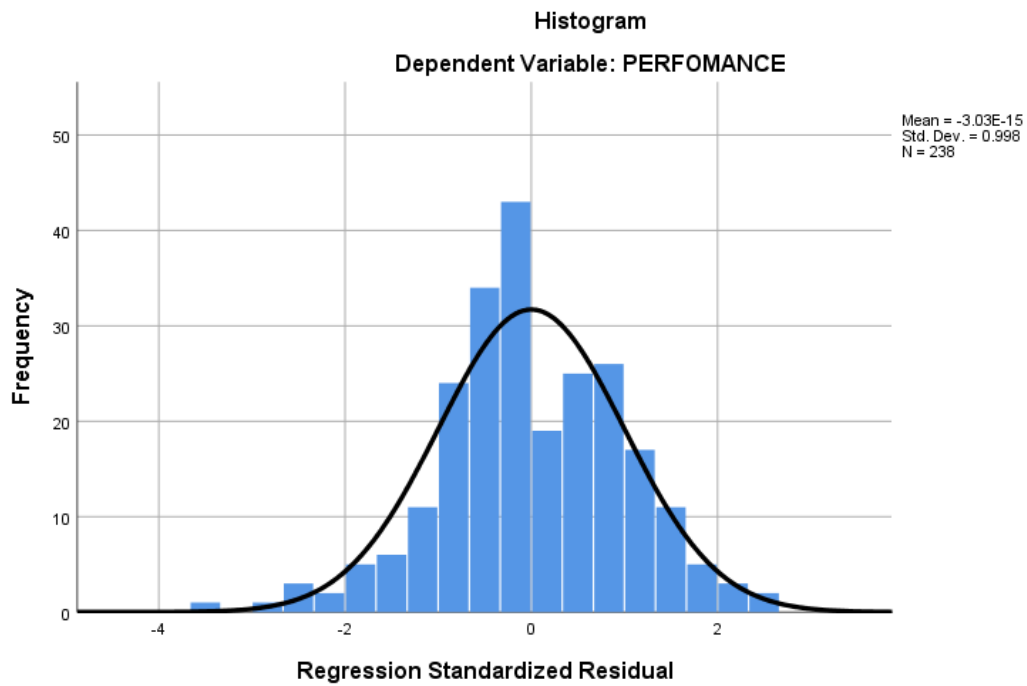
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.361	.221		10.687	.000
	MONITORING	.407	.064	.380	6.314	.000

a. Dependent Variable: PERFORMANCE

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.1748	4.1365	3.7452	.17267	238
Residual	-1.46560	1.11987	.00000	.42010	238
Std. Predicted Value	-3.303	2.267	.000	1.000	238
Std. Residual	-3.481	2.660	.000	.998	238

a. Dependent Variable: PERFORMANCE



Appendix O: Regression of Stakeholder Engagement and Performance of CBC Projects

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	STAKEHOLDER ^b	.	Enter

a. Dependent Variable: PERFORMANCE

b. All requested variables entered.

Model Summary^b

Model	R	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Sig. F Change	Durbin-Watson	
				R Square	F Change	df1			df2
1	.641 ^a	.410	.34954	.410	164.169	1	236	.000	1.743

a. Predictors: (Constant), STAKEHOLDER

b. Dependent Variable: PERFORMANCE

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.058	1	20.058	164.169	.000 ^b
	Residual	28.834	236	.122		
	Total	48.892	237			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), STAKEHOLDER

Coefficients^a

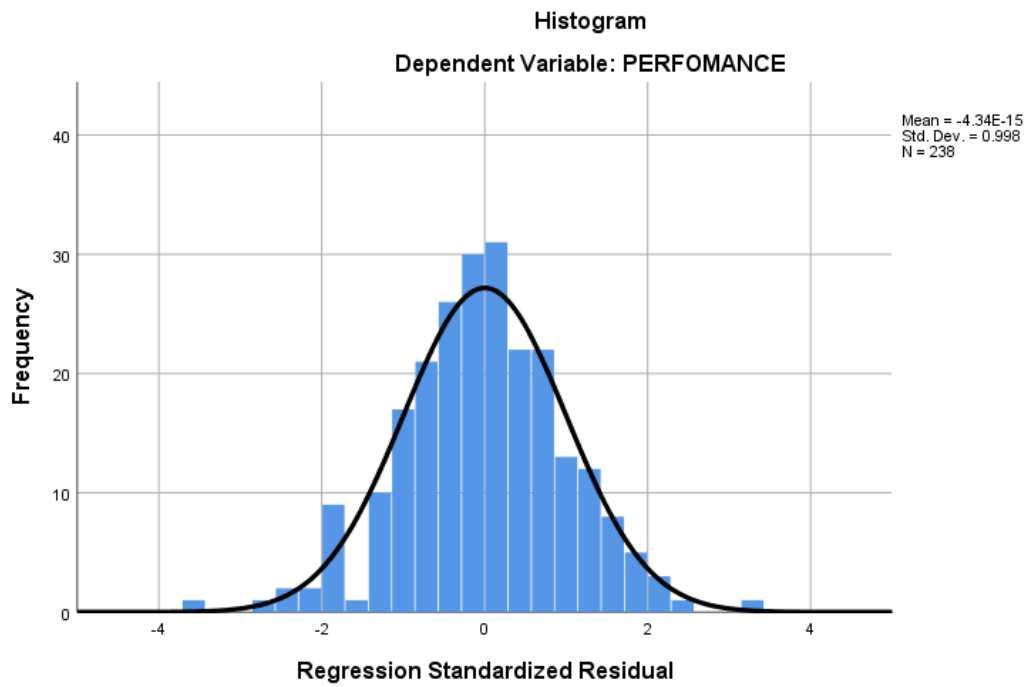
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.177	.202		5.834	.000
	STAKEHOLDER	.713	.056	.641	12.813	.000

a. Dependent Variable: PERFORMANCE

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.7461	4.4105	3.7452	.29092	238
Residual	-1.22711	1.11528	.00000	.34880	238
Std. Predicted Value	-3.434	2.287	.000	1.000	238
Std. Residual	-3.511	3.191	.000	.998	238

a. Dependent Variable: PERFORMANCE



Appendix P: Regression of Project Design Activities and Performance of CBC Projects

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	JOINTDESIGN ^b	.	Enter

a. Dependent Variable: PERFORMANCE

b. All requested variables entered.

Model Summary^b

Model	R	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
					F Change	df1	df2		
1	.761 ^a	.579	.29535	.579	324.486	1	236	.000	1.728

a. Predictors: (Constant), JOINTDESIGN

b. Dependent Variable: PERFORMANCE

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.305	1	28.305	324.486	.000 ^b
	Residual	20.587	236	.087		
	Total	48.892	237			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), JOINTDESIGN

Coefficients^a

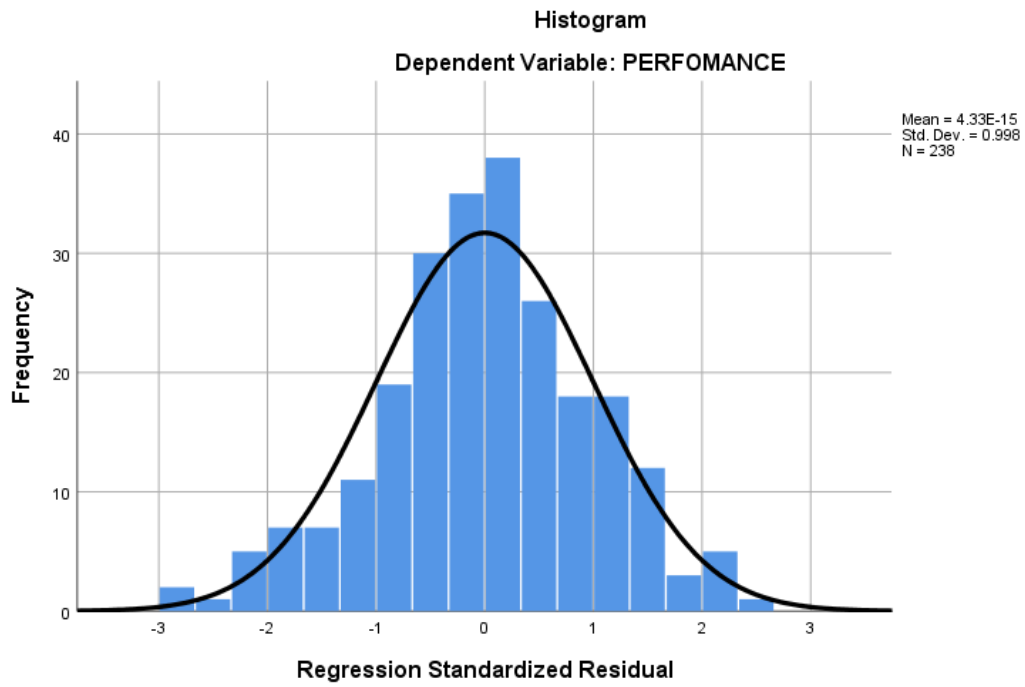
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.077	.205		.374	.009
	JOINTDESIGN	1.021	.057	.761	18.013	.000

a. Dependent Variable: PERFORMANCE

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.5083	4.5553	3.7452	.34559	238
Residual	-.86595	.77069	.00000	.29473	238
Std. Predicted Value	-3.579	2.344	.000	1.000	238
Std. Residual	-2.932	2.609	.000	.998	238

a. Dependent Variable: PERFORMANCE



Appendix Q: Regression of Regulatory Environment and Performance of CBC Projects

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	REGULATORY ^b	.	Enter

a. Dependent Variable: PERFORMANCE

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.281 ^a	.079	.075	.43681	1.628

a. Predictors: (Constant), REGULATORY

b. Dependent Variable: PERFORMANCE

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.863	1	3.863	20.247	.000 ^b
	Residual	45.029	236	.191		
	Total	48.892	237			

a. Dependent Variable: PERFORMANCE

b. Predictors: (Constant), REGULATORY

Coefficients^a

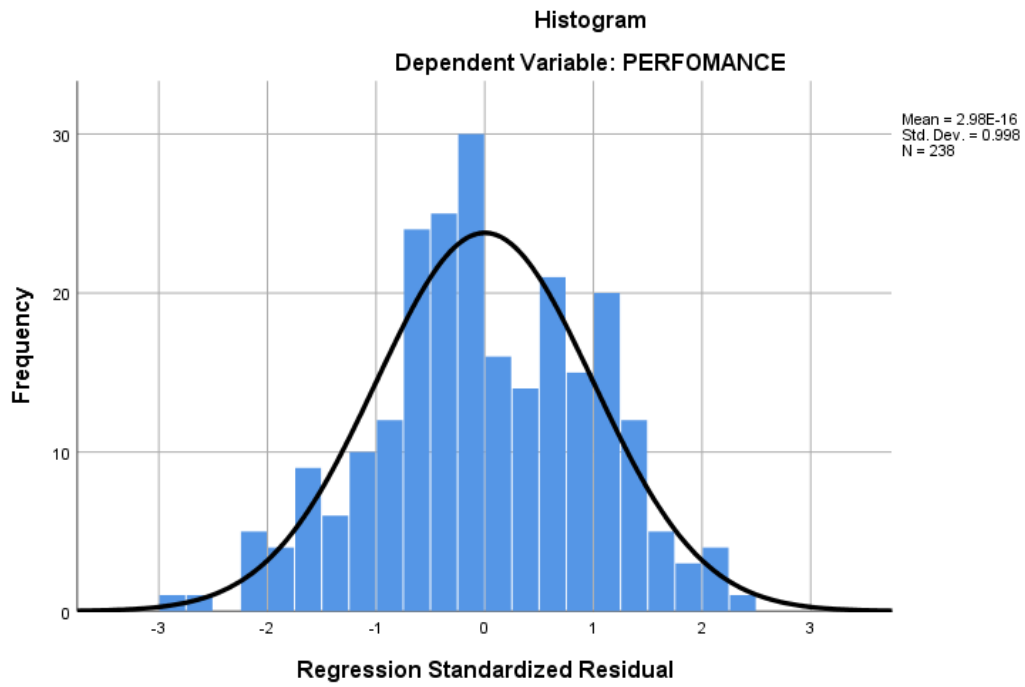
Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error				Lower Bound	Upper Bound
1	(Constant)	3.297	.104		31.854	.000	3.093	3.501
	REGULATORY	.151	.034	.281	4.500	.000	.085	.217

a. Dependent Variable: PERFORMANCE

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.4481	4.0063	3.7452	.12767	238
Residual	-1.23902	1.01958	.00000	.43588	238
Std. Predicted Value	-2.327	2.045	.000	1.000	238
Std. Residual	-2.837	2.334	.000	.998	238

a. Dependent Variable: PERFORMANCE



Appendix R: Regression of Regulatory and the Relationship between Project Design Activities and Performance of DET project

Model Summary

R	R-sq	MSE	F	df1	df2	p
.762	.581	.088	108.196	3.000	234.000	.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.738	.020	183.837	.000	3.698	3.778
PDA	1.017	.061	16.746	.000	.897	1.136
REG	.004	.025	.180	.857	-.044	.053
Int_1	.070	.067	1.042	.298	-.063	.203

Product terms key:

Int_1 : PDA x REG

Covariance matrix of regression parameter estimates:

	constant	PDA	REG	Int_1
constant	.000	.000	.000	.000
PDA	.000	.004	-.001	.000
REG	.000	-.001	.001	.000
Int_1	.000	.000	.000	.005

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.002	1.086	1.000	234.000	.298

Focal predict: PDA (X)

Mod var: REG (W)

Data for visualizing the conditional effect of the focal predictor:

Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/

```

PDA  REG  PERF  .
BEGIN DATA.
-.339  -.846  3.410
.000  -.846  3.734
.339  -.846  4.059
-.339  .000  3.394
.000  .000  3.738
.339  .000  4.082
-.339  .846  3.377
.000  .846  3.742
.339  .846  4.106
END DATA.

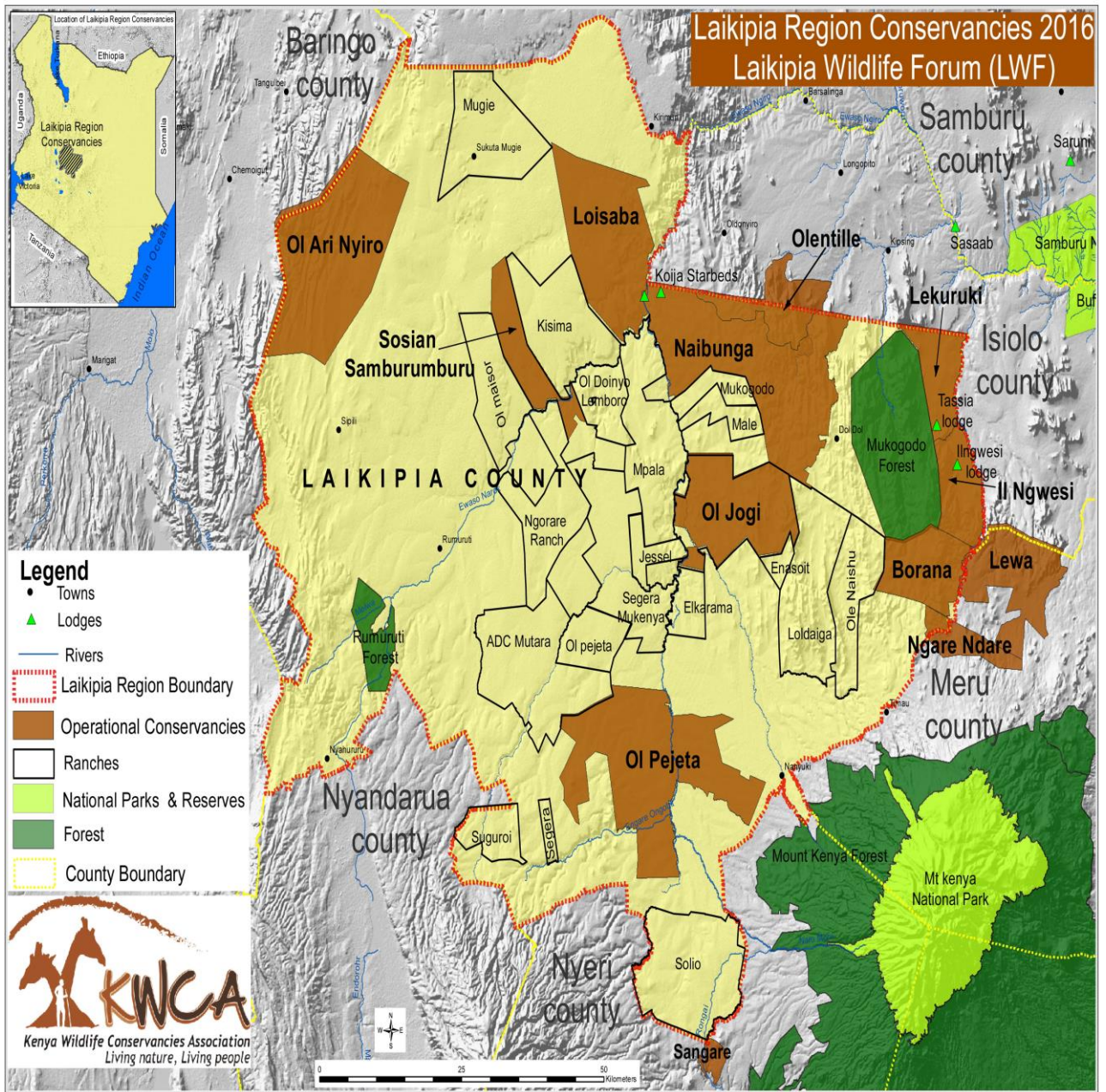
```

Appendix S: Krejcie & Morgan Table

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size.
S is sample size.

Appendix T: A Map of Laikipia Region Conservancies



Adapted from Laikipia Wildlife Forum (2016)