# ASSESSMENT OF STRATEGY IMPLEMENTATION ON THE PERFORMANCE OF CLIMATE CHANGE ADAPTATION PROJECTS IN MARSABIT AND ISIOLO COUNTIES, KENYA

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**A Thesis Submitted in Partial Fulfilment of the Requirements for the Conferment of Degree of Doctor of Philosophy in Business Management of Meru University of Science and Technology**

**2025**

## DECLARATION

This thesis is my original work and has not been presented for a degree in any other institution

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## DEDICATION

To my beloved daughter, Nina Njeri Kariuki. You are my source of inspiration. Despite being a young girl, you challenged me endlessly till I pursued a Doctor of Philosophy degree.

In the loving memory of my late husband, Edward Kariuki Njiiri. Your memory is still alive in our hearts and minds, and I wish you are still here with us.

In the loving memory of my late son, Ryan Njiiri Kariuki. How I wish you lived to grow up and exploit your full potential.

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| **ACCCRN** | Asian Cities Climate Change Resilience Network |
| **AfDB** | African Development Bank |
| **ANOVA** | Analysis of Variance |
| **AR5** | Fifth Assessment Report |
| **ASAL** | Arid and Semi-Arid Lands |
| **CAF** | Capitals Approach Framework |
| **CBA** | Community Benefits Agreement |
| **CBF** | Community Benefits Funds |
| **CDDC** | Community Dialogue and Development Committee |
| **CEO** | Chief Executive Officer |
| **CF** | Cities of the Future |
| **CRGE** | Climate Resilience and Green Economy Strategy |
| **CSA** | Climate Smart Agriculture |
| **DA** | Development Agreements |
| **DMS** | Document Management Systems |
| **ECB** | Evaluation Capacity Building |
| **EIA** | Environment Impact Assessment |
| **EMCA** | Environmental Management and Coordination Act |
| **EPC** | Engineering, Procurement, and Construction |
| **FPIC** | Free, Prior and Informed Consent |
| **GoK** | Government of Kenya |

| | |
|---|---|
| **ICPAC** | IGAD Climate Prediction and Applications Centre |
| **ICT** | Information and Communications Technology |
| **IEK** | Indigenous Environmental Knowledge |
| **IFC** | International Finance Corporation |
| **IFRC** | International Federation of Red Cross and Red Crescent Societies |
| **IPC** | Integrated Phase Classification |
| **IPCC** | Intergovernmental Panel on Climate Change |
| **KAFP** | Kenya Association of Fundraising Professionals |
| **KCB** | Kenya Commercial Bank |
| **KEMRI** | Kenya Medical Research Institute |
| **KFS** | Key Success Factors |
| **KMO** | Kaiser-Meyer Olkin |
| **KNBS** | Kenya National Bureau of Statistics |
| **KPIs** | Key Performance Indicators |
| **KRA** | Kenya Revenue Authority |
| **KRC** | Kenya Red Cross |
| **MCPP** | Municipal Climate Protection Programme |
| **MIRERC** | Meru University Institutional Research and Ethics Review Committee |
| **MPA** | Marine Protected Area |
| **MSME** | Micro, Small and Medium Enterprise |
| **NACOSTI** | National Commission for Science, Technology and Innovation |
| **NatGeo** | National Geographic |
| **NCCAP** | National Climate Change Action Plan |

| | |
|---|---|
| **NCCRS** | National Climate Change Response Strategy |
| **NDMA** | National Drought Management Authority |
| **NEMA** | National Environment Management Authority |
| **NGOs** | Non-Governmental Organizations |
| **OCHA** | Office for the Coordination of Humanitarian Affairs |
| **OECD** | Organization for Economic Cooperation and Development |
| **PIS** | Project Implementation Structure |
| **PMS** | Project Management Systems |
| **PPMR** | Ponta do Ouro Partial Marine Reserve |
| **PPP** | Public Private Partnership |
| **REREC** | Rural Electrification and Renewable Energy Corporation |
| **SALs** | Semi-Arid Lands |
| **SPSS** | Statistical Package for Social Sciences |
| **SSA** | Sub-Saharan Africa |
| **TCG** | Turkana County Government |
| **UDP** | Urban Development Agreements |
| **UN** | United Nations |
| **UNHCR** | United Nations High Commissioner for Refugees |
| **UNICEF** | United Nations Children's Fund |
| **USAID** | United States Agency for International Development |

## DEFINITION OF TERMS

| | |
|---|---|
| **Adaptation to Climate Change** | This is the ability of a system to adapt to climate change, particularly climate variability and extremes, in order to reduce possible harm, seize opportunities, or deal with the effects (Mccarthy J., Canziani O. F., Leary N., Dokken D. J., and White K. S., 2001). In this study, this term has been used to describe adaptive strategies that have been employed in the country to enhance food security, to help the affected regions cope with climate change. The adaptative strategies discussed in this study are climate change adaptation projects implemented in Marsabit and Isiolo Counties of Kenya. |
| **Arid and Semi-Arid lands** | Often known ASALs, are regions with little to no rainfall, high temperatures, high evapotranspiration, low humidity, and little to no vegetation, alternating seasons and frequently stormy weather (ScienceDirect, 2023). This study describes ASALs as those regions in Kenya characterized by low rainfall, dry lands with limited agricultural potential and drought. Whenever it rains, these regions are prone to flooding. |
| **Climate** | This is the condition of the atmosphere at a particular location over a long period of time (Enfield, 2022). In the context of this study ASAL regions in Kenya, particularly Marsabit and Isiolo counties where this study was conducted are characterized by low rainfall, high temperature and seasonal variability climatic conditions. |

| | |
|---|---|
| **Climate Change** | This is periodic modification of earth's climate brought about as a result of changes in the atmosphere as well as interactions between the atmosphere and various other geologic, chemical, biological, and geographic factors within the earth system (NatGeo, 2023). Climate change in this study has been contextualized to manifest through extreme weather conditions, seasonal variations, decreased rainfall, intensified droughts among other factors, with significant implications on water availability, food security and livelihoods in ASAL regions of Kenya. |
| **Project Performance** | The measurement of whether a project has met its objectives, scope, cost, and schedule (Hinze F., 2017). The climate change adaptation projects implemented in Kenya's ASAL regions were expected to enhance the adaptability and coping mechanisms of the communities to climate change effects, through enhancement of food security. Project performance therefore analyzed how effective these projects achieved their intended goals. |
| **Strategy** | The pattern of organizational moves and managerial approaches used to achieve organizational objectives and to pursue the organization's mission Thompson A., Strickland III A.J., John G., 2015). Strategy in the context of this study refers to the climate change adaptation projects that were implemented in Marsabit and Isiolo counties of Kenya, as a means of enhancing the community's adaptation to climate change effects. |

| | |
|---|---|
| **Strategy Implementation** | The art and knowledge of putting strategies into action that enable cross functional organization achieve its goals (David F. & David F., 2016). In this study, strategy implementation refers to the activities that were carried out by project implementers in actualizing the project plans into actual projects. |

## ABSTRACT

Strategic management practices influence the effectiveness of organizations' strategic initiatives. Due to the increase in climatic change over the years, the government, Non-Governmental Organizations, and other actors have been strategizing on ways and means of managing climate change, including implementation of climate change adaptation projects countrywide. Despite all these interventions, there has been little success of the intended goals. The country is still ravaging from the negative impacts of climate change. The purpose of this study was to assess strategy implementation on the performance of climate change adaptation projects in Kenya and this formed the general objective of this study. The study adopted mixed research design using both quantitative and qualitative approaches. Both descriptive and analytical methods were applied for the quantitative approach. The study was anchored on Institutional Theory, Resource Based View, Stakeholder Theory, Path Dependency Theory, Theory of Change and Theory of Constraints. The target population was 2,021 individuals. The study used simple random sampling technique using Slovin's Formula to derive a sample size of 334 respondents. Data was collected using interviews, questionnaires and observations of the project sites. Statistical Package for Social Sciences (SPSS) version 21, and Microsoft Excel were used for data analysis. Descriptive statistics used mean and standard deviation to describe the data characteristics. Correlation and regression analysis were used in testing the effects of the variables on project performance. Data was presented in graphs, charts, tables and regression models. Findings indicated that the constructs, viz Institutional Characteristics, Resource Management, Stakeholder Participation and Regulatory Framework were all significant and had positive impact on the performance of climate change adaptation projects. When moderated with Climate Change Factors and Effects, the model improved, indicating that it influenced the effect of strategy implementation on the performance of climate change adaptation projects. The study recommended adoption of sound institutional characteristics such as democratic and coaching leadership style, functional project implementation structure and use of convenient and affordable communication technology. The study recommended effective management of resources to ensure appropriate allocation, adequacy and resource optimization. Stakeholder involvement in decision making, building their capacity to impart necessary knowledge and skills, and an understanding of community culture was recommended by the study. The study recommended alignment of the projects to required government policies, establishment of community agreements and adherence to donor stipulations. Utilization of indigenous knowledge in project implementation and implementation of projects that can withstand climate change effects was recommended. Further studies on other factors of strategy implementation are recommended by this study. In addition, Phase 1 to 3 of ASAL regions in Kennya, as categorized by IPC classification, can be studied to establish the performance of climate change adaptation projects implemented.

# CHAPTER ONE: INTRODUCTION

The chapter presents the background information on which this study is formed, as well as the statement of the problem. It also entails the objectives of the study, research hypothesis, significance of the study, limitations and delimitations of the study.

## 1.1 Background of the Study

This section provides the context and foundation for this research. It explains the broader topic and gives relevant details for the rationale behind the study.

### 1.1.1 Strategy and strategy implementation

Strategic management is the practice of formulating, carrying out, and assessing cross-functional decisions for the purpose of realizing corporate goals (David & David, 2016). The environment has continually become very dynamic and volatile, and in order to survive, businesses have to strategize. Strategies are important because businesses are run in an environment of uncertainty, and therefore management need guidance (in form of strategies) to help them adapt and survive the organization to the rapidly changing environment (Thompson et al., 2015).

Strategic management process involves three main stages: formulation of strategies, implementation of strategies and strategy evaluation and control (F. David & David, 2016a; F. R. David, 2011; Planellas, 2013; Susanto et al., 2023; Thompson et al., 2015a). These stages are critical for a successful strategy process. Strategy formulation is the crafting of strategies. (Carpenter & Sanders, 2014). It involves the process of deciding what to do, decisions on entering new markets, exiting certain business areas, expanding or diversifying operations, exploring international opportunities, considering mergers or joint ventures, and developing methods to prevent hostile takeovers (F. David & David, 2016). According to a study by Planellas, (2013), strategy formulation involves

situational analysis, goal setting, and the selection of strategic alternatives, serving as the blueprint for organizational direction.

Formulation of strategies further includes identifying and development of an organization's vision, mission, and objectives (Thompson et al., 2015). It comprises evaluating the organization's external and internal environment to ascertain its position in the industry, and its key success factors (F. David & David, 2016; F. R. David, 2011; Thompson et al., 2015). The organization should be focused on developing tactics that will increase its competitive advantage over other industry participants.

Strategy implementation entails carrying out all necessary tasks to turn the developed strategy into reality (Carpenter & Sanders, 2014). In order for a company to achieve its goals and objectives, strategies must be put into action, a task undertaken by both employees as well as management (David & David, 2016). Strategy implementation is characterized or affected by factors such as effective communication from the top to the bottom, a policy or a guide to put the strategy into action, the structure of an organization, the culture shared by members of an organization, available resources, both tangible such as machines and equipment, or intangible such as knowledge and competencies, leadership of the organization and the management of the organization (McKinsey & Company, 2008; Thompson et al., 2015a).

Situational analysis, characterized by environmental scanning (Planellas, 2013; Susanto et al., 2023); effects of internal environments and influence of external environment characterized by political, economic, social, technological, ecological and legal environments (Pearce & Robinson, 2007) affect strategy implementation. Further, Carpenter and Sanders (2014) argue that the organization must be cognizant of its resource capabilities if its developed plans are to be implemented successfully.

Strategy evaluation and control is undertaken through review of performance. An organization can determine whether it is moving in the right direction and how it is functioning through strategy evaluation and control (David & David, 2016). This entails monitoring the implementation of a strategy to see whether it is on track. The actual state of affairs is matched against the projections, to establish any deviations, and where there are deviations, corrective action is undertaken to bring the strategy on track. Strategy evaluation and control is a continuous process.

Across the world, strategy implementation has affected the success or failure of strategies in various organizations. The 7-Eleven Corporation, a retail outlet with a chain of convenience stores experienced saturation of its market by competitors, putting the Corporation at risk of losing its dominance to the market. The possible doom was averted by the quick thinking of management through strategic focus that became a winning strategy, due to the focus put by the Corporation in implementing the strategy (Carpenter & Sanders, 2014).

Regionally, the impact of strategy implementation on the performance of strategies is recognized and emphasized. Public entities in Northern Cape, South Africa, were investigated to ascertain the impact of strategy implementation elements such as leadership on successful performance of the organizations (Gasela, 2021). The findings indicated that unqualified leadership affected the performance of the studied public entities negatively.

Locally, a study by Machoka, (2019) investigated strategy implementation and its effect on performance at Red Cross Country programme, with the aim of establishing the effect of various strategy implementation elements on the performance of the said NGO. According to the study, the NGO had been struggling to achieve its targets in the past three years prior to the study. It was established that elements of strategy

implementation had an impact on the implementation and improved performance of the programs.

### 1.1.2 Institutional characteristics

The institutionalization of strategy is a step in its implementation. This is the process of aligning a strategy with an organization's institutions. According to Palmer & Biggart, (2005), organization's institutions can be described as the internal systems of an organization. An organization's institutions include, but are not limited to, its leadership, organizational structure, culture, procedures, operational support systems, and policies. These are elements that are inherent in an organization and they vary from one organizational to another (Robinson & Berkes , 2010). Different organizations implement various strategies that are thought appropriate to help them realize the goals and objectives they have been given. In cases where this is not so, organizations should adjust the institutional factors to support the strategies.

Leadership roles are vital for implementing strategies since they have authority and responsibility. The persons in those jobs are also important. An important quality for those in positions of leadership is the capacity to persuade others to act in a particular way through collaboration or team spirit, and a person's personality, style, dedication, reputation, attitude, aptitude, talents and experiences all contribute to this effect (Pearce & Robinson, 2007). Implementing a strategy typically necessitates deviations from the usual (Thompson et al., 2015). As a result, the leadership of an organization, starting with the Chief Executive Officer (CEO) and senior management, should set a clear course through initiative, inspiration, and motivation in order to lead an organization to make the necessary changes for strategy implementation. Instead of conservative leaders, transformational leaders may be better suited for implementing a strategy (Mgqibi, 2019).

The structure of an organization informs of the tasks and responsibilities in the organization and their interrelationships. The structure therefore should be able to support a strategy being implemented for it to be successful. In addition, not all forms of organization structures are supportive in implementing a given strategy. According to Thompson et al (2015), every strategy has a unique set of essential success determinants referred to as Key Success Factors (KSF) and value chain activities, so it is appropriate to have a customized organizational structure. Thus, consideration should be made by the organization to either change the structure to accommodate the said strategy, to change the strategy altogether to fit it in the existing structure, or to change both the structure and the strategy simultaneously. If this is not done, then problems are expected to be experienced in the implementation of the strategy due to disorder, friction, malperformance and malfunctions.

There are many routine tasks performed in a company to ensure efficient operations. How well these basic tasks are completed has a big impact on how well an organization performs. It is crucial to remember that everyday tasks performed within an organization also have an impact on whether a strategy is implemented successfully or unsuccessfully (David & David, 2016). The effectiveness and efficiency of the support systems in place are linked to the efficiency and effectiveness of routine tasks and Information Communications Technology (ICT) is a critical support system in an organization (Nureni., 2014). An organization needs to be informed of technological developments that could affect its industry in order to prevent obsolescence and foster innovation (Pearce & Robinson, 2007).

ICT is not merely a tool but an institutional characteristic that can determine the adaptability and success of projects in dynamic environments. Adoption and integration of ICT within project frameworks are necessary for achieving efficiency and scalability,

particularly in sectors like climate change adaptation, infrastructure development, and humanitarian projects (Nureni, 2014).

Institutional characteristics elements cannot be ignored since they have an impact on implementation of strategies and projects in organizations, and this is attested across the world. Ahmady et al., (2016) highlighted the significance of various organizational structures used by organizations, and their effect on organizational performance. Chew et al., (2024) averred that IT and organizational structure have an impact on organizational communication and ultimately organizational performance. Luo et al., (2023) affirmed that leadership of an organization affected the management performance of complex construction projects. A study by Raziq et al., (2018) showed that found that project performance tends to improve when leaders use the contingent reward aspect of transactional leadership, while it declines when the active management-by-exception approach is applied

Regionally, institutional characteristics such as leadership had been found to affect implementation of strategies, which ultimately had an effect on organizational performance (Gasela, 2021), in a study on strategy implementation South African Northern Cape public entities. Leadership and organizational structure were also identified as having an impact on the ability of municipalities in addressing climate change in Durban region, South Africa (Roberts, 2010).

Locally, institutional characteristics were noted to have an effect on implementation of strategies and consequently, the performance of an organization. A case of Red Cross Kenya revealed that strategy operationalization, organizational structure, and strategy communication had an effect on the extent to which the NGO was able to achieve its objectives (Machoka, 2019). Further, the leadership of the organization played a role on the success of implementation of the Country Programs. Usage of Information and

Communications Technology (ICT) in implementing projects locally had also been established to have a positive impact on the success of the projects (Mwangi, 2015)

### 1.1.3 Resource management

Resources refers to the productive inputs available in an organization's environment, and which help it to meet its objectives and goals (Thompson et al., 2015). Resource management helps an organization to analyze what is required to meet the goals as well as enable completion of tasks or projects. Resources are both tangible such as land, machines, equipment, as well as intangible, such as knowledge, skills, competencies, financial, technology, and time among others (Pearce & Robinson, 2007). While certain resources are non-renewable and their supply is finite and subject to depletion, others are renewable and may replenish themselves at the pace at which they are consumed. Whereas resources can be generated by an organization, strategic partnerships can be used to develop resources for their use or to share resources with other participants in the sector or other industries. An organization should assess its internal resources and determine several methods for maximizing resource utilization (Thompson et al., 2015). It is crucial to remember that resources are typically limited, and as a result, they must be used wisely and profitably to get the most out of them (Liang et al., 2021).

Resource management enables a company to allocate resources in the best possible ways and to the right activities by aiding minimizing of waste and duplication, which results in optimal utilization of the available resources (Gupta, 2024). As a result, an organization can save expenses, increase efficiency, and increase productivity while keeping in mind that resources are limited. An understanding of the resources required to achieve the desired results in strategy implementation is necessary. Therefore, resource management enhances program and projects delivery.

The management and assignment of resources with the intention of achieving an organization's objectives is known as resource allocation. In addition to allocating funding to projects, it also entails assembling a team with the necessary skills and capabilities. An organization must define its intended goals in order to allocate resources effectively (Chepng'eno & Kimutai, 2021). These goals should then serve as a guide for identifying tasks and the talents required to complete them. Goal delivery budgets and timelines need to be determined. It is also necessary to create job schedules to help with delivery evaluation so that, if necessary, resource re-allocation can be taken into consideration during implementation (Gupta, 2024). The successful implementation of a program or project is severely affected if the resource requirements for the program or project are not correctly examined, which would result in the allocation of insufficient or incorrect resources in all aspects.

Resource adequacy is a resource management element where organizations possess sufficient resources (including human, financial, technical, and natural) to satisfy certain requirements or requests, guaranteeing the capability to operate efficiently and attain intended results. Organizations equipped with exceptional and sufficient resources, such as machinery, facilities, and equipment, are able to achieve better performance compared to those lacking these resources (Ndege et al., 2020).

Resource optimization is another component of resource management that helps to guarantee that resources, often scarce and sometimes non-renewable, are utilized optimally to ensure that an organization achieves its intended goals (Kusimo et al., 2019). Through resource optimization, underutilized resources are moved to other locations or used in other ways, while over utilized resources are improved.

Implementation of many strategies and projects is hindered by lack of proper resource management. The techniques of resource allocation, resource adequacy and resource

optimization should be employed by organizations as a tool to manage their available resources. Globally, optimization of resources such as labour has been embraced as a tool to enhance resource adequacy as well as reduction of resource conflicts between projects, and this has been necessitated by the fact that resources are scarce and their worth differs. Conceptually and empirically, resources serve as the basis for achieving and maintaining a competitive edge, ultimately leading to enhanced performance of the firm (Ismail et al., 2012).

Resource management is also considered critical for successful projects implementation regionally, where some aspects of resource management such as inability to meet technical specifications, failure to meet the required budget, quality, utility and schedules as expected were noted as major reasons that led to project failure in Africa (Rwelamila & Purushottam, 2012). Lack of appropriate recruitment and training of projects staff including project managers and poor communication systems including appropriate networks and data were major contributions to projects failure.

Locally, allocation of resources such as financial and human have been viewed as a necessity for successful implementation of strategies and essential for organizations to achieve success in their performance (Muthiora & Moronge, 2018). Mobilization of resources has also been seen as crucial if organizations are to complete implementing their projects successfully (Densford et al., 2018).

### 1.1.4 Stakeholder participation

A stakeholder as defined by Stanford Research Institute, (1963), is a member of "groups without whose support the organization would cease to exist" (Donaldson & Preston, 1995). They include customers, suppliers, creditors, employees, shareholders, the general public, communities, business support groups, the media among others. It is crucial to understand that effective organizations are created by a complicated web of

interactions. Therefore, it is imperative to acknowledge and take into account in the organization, the diversity of viewpoints and ideologies that exist among the many stakeholders (Ndirangu & Shisia, 2016). An organization can better comprehend its stakeholders' intellectual and emotional preparation by getting to know them, especially when coping with change, as is the case of climate change happening across the world.

The World Bank (2022), defines stakeholder participation as "a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them". Given that they influence or are influenced by the strategies, it is crucial to identify and include key stakeholders in the project implementation process. This entails including the relevant parties in the formulation, execution, evaluation, and management of the projects, including decision making.

Although the involvement of stakeholders is crucial for strategy implementation, management should be cognizant of the varying interests of these stakeholders given that they have the power to make or break a company (Gekonde, 2011). It is also crucial for an organization to strike a delicate balance in order to avoid giving some stakeholder categories higher priority than others.

Organizations and those implementing projects must understand that local stakeholders are knowledgeable about the factors affecting the local communities. According to O'Brien et al., (2021), community members can be valuable information sources for initiatives. Such knowledge can be combined with technical expertise to significantly improve a project's sustainability and capacity to be implemented successfully.

Depending on how it is handled, inclusivity is a component of stakeholder participation that influences the effectiveness of project implementation either adversely or positively. The degree of participation of stakeholders throughout the process, from negotiation to the end of the implementation phase, is essential (Artur, 2016). The type of beneficiaries

- men, women, certain age groups - and their inclusion in the implementation process are equally important (Marimo et al., 2021). The amount of knowledge, intelligence, and attitudes of the included recipients also affects how well the implementation process goes.

Stakeholder capacity building is crucial element of stakeholder participation, since it equips stakeholders with knowledge, skills and abilities, to effectively participate in project implementation and ultimately, long-term sustainability of the projects. The impact of capacity building has been examined and emphasized as witnessed in implementation of projects (Mwanzia et al., 2022; Ndonye et al., 2021).

The importance of rural culture in determining the viability and effectiveness of rural development projects is emphasized by community culture. It affects how well a project performs, especially when local identity and customs affect ownership and participation in implementation. Conventional development approaches often overlook the unique socio-cultural dynamics of rural communities, leading to mismatches between external interventions and local needs (Abou-Jaoude, 2022). Development plans that disregard a community's cultural aspects frequently fail to be embraced by rural residents, leading to low adoption rates and diminished community support. On the other hand, projects that respect customs and traditions, tend to foster greater long-term sustainability (Bole et al., 2024).

Worldwide, effective adaptation to climate impacts has become increasingly important. Although not in a major way, the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report (AR5) acknowledged the use of various forms of knowledge in conjunction with current adaptation strategies (Petzold et al., 2020). They aver that the most recent and ongoing IPCC special reports in the sixth assessment cycle acknowledge and emphasize worldwide proof of indigenous knowledge in their particular situations.

Regionally there is acknowledgement of a need for a partnership model that enables all the stakeholders to come together and decide how to share duties and solve current problems, especially if community-based projects are to be effective and efficient. A study by Meshack, (2004), on Hanna Nassif project in Dar es Salaam, Tanzania, demonstrated stakeholder involvement in several project-related activities, including infrastructure design and approval, project implementation which saw community members contribute land for roads and drainage, community employment, and support from the project's numerous stakeholders.

Locally, the participation of stakeholders has been deemed vital if projects are to be implemented successfully. Stakeholders are endowed with indigenous knowledge that could be tapped into to enrich the exotic knowledge being introduced to the local communities. In addition, involving stakeholders in implementation of projects also reduces the risk of hindrances likely to arise due to cultural inhibitions, since the local communities take part in the activities therein and the implementers are able to understand any cultural practices likely to affect or cause predicament in implementation (Mullins & Wambayi , 2017; Ndirangu & Shisia, 2016).

### 1.1.5 Regulatory framework

On both a national and global scale, regulatory frameworks are legal tools that govern operations. These can be coercive and mandatory, like international treaties and contractual obligations, or optional, like behavioral rules (DCAF, 2022). Regulatory frameworks must be in place before projects can be implemented to ensure that they are carried out in accordance with local laws and regulations. Odawa and Litunya, (2022) underscore the significance of regulatory frameworks in shaping and facilitating effective strategy implementation.

Economic, social, and environmental regulation are thought to be part of the nature of regulation. According to Koop & Lodge, (2017), economic regulation can be expanded to include product licensing and firm activity inspection such as price-setting, in addition to the traditional components of competition and utility regulation. Interventions that aim to influence social interactions that are not readily discernible by an economic exchange relationship are also referred to as non-economic regulation.

According to the OECD, (2016), the visibility, acceptance, and legitimacy of social enterprises can be significantly influenced by the legal and regulatory environment of a nation. The report further claims that these frameworks serve as a model for appropriate and focused public support programs, including benefits, access to public procurement, and financial and non-financial aid. However, it is crucial to remember that frequently, public procedures are slowed down and choked by onerous red tape and bureaucracies, which prevents the seamless implementation of initiatives and projects.

Social activities such as implementation of climate change adaptation projects must adopt a legal and regulatory framework in order to operate and enter into contractual obligations. However, sometimes the frameworks in place may not be suitable for the activities being implemented and this may hamper the success rate. Some countries may have restrictions on activities that non-profit organizations can implement while others can have restrictions on use of natural resources such as land, water sources and so on. Such restrictions form a setback to implementers in exploiting their full potential (DCAF, 2022).

Community Benefits Agreements (CBAs) should also be undertaken in the process of implementation of projects. These are mainly aimed at ensuring the projects have community support for the ongoing works where lack of would likely result in increased costs due to standoffs, delays, protests and sabotage (Janssen-Jansen & van der Veen,

2017). CBAs contain conditions such as provision of public facilities and financial contributions to the local communities, among others. Also, since community agreements are the result of a consensus-driven process to determine what each member of the group needs from the other, they are a potent tool for bringing a group together as a team.

Across the world, organizations have been embracing contracting communities through CBAs. Janssen-Jansen & van der Veen (2017) undertook several case studies in New York City on engagement of communities who were end users, in implementation of projects. Keenan et al., (2014) also highlighted the perspectives of gender dynamics and CBAs in mining communities in Australia. Developing countries like Nigeria and South Africa among others have not been left behind in embracing CBAs, as discussed by Rose & Haggerty, (2019), in their research on major industrial projects located in rural communities, and the involvement of the local communities through CBAs and Community Benefits Funds (CBFs).

Locally, public participation is a constitutional requirement for government decision-making processes (The Kenyan Parliament, 2019). However, the local communities have not always been consulted or involved in implementation of projects by the government or private actors. Rodgers, (2021) avers that in 2003-05, or 2010, an attempt by the UNHCR to gain access land in Turkana (the Locileta and Lokwamor sites for a proposed refugees camp), led local men to perform an *agata*, a traditional ritual usually convened by a diviner. The *agata* is attributed to the failures and accidents that henceforth resulted at the site, where at one time a drilling truck sank into the soil. Incidents of sabotage, and other acts of protests on use of the land led to the UNHCR not setting up the intended camp.

The discovery of oil in Turkana, Kenya, resulted in protests that disrupted company operations, because local pastoralists inhabiting the area faced displacements, exposure to hazards caused by the exploration, and were sidelined from decision-making and benefit-sharing arrangements (Mkutu et al., 2019).

Another component of regulatory framework is donor intent, which are contractual agreements from the funding organizations on how the donated funds are to be utilized in implementing the projects. Donor intent, which has been in the spotlight in recent years, is the principle that when a gift is given to and accepted by a non-profit organization for a specific purpose, the gift must be used for that purpose unless the donor or his or her legal heirs give the recipient permission to repurpose the gift, or a court finds that the original purpose is either illegal, impossible or impracticable (Finley, 2018).

Large donations around the world have conditions attached. In the USA, the state government in charge of the charity's domicile often has the power to either enforce such conditions or reject requests to change them (Helge, 2018). Despite the fact that state regulations differed, some states changed their policies in a way that made it more difficult for charities to avoid obligations, such as those relating to a specific type of property use.

Official Development Assistance is always provided with conditions attached and failure to meet the conditions result to the risk of withholding or withdrawing aid (Guillaumont et al., 2023). These conditionalities have evolved over time, to include requirements for recipient countries to undertake economic, political, social, and environmental reforms in return for receiving aid.

According to a national survey on donor intent conducted by Zogby International, USA, for the plaintiffs in the Robertson v. Princeton University donor intent lawsuit, the majority of respondents believed that gifts given to non-profit organizations for a

specific purpose must be used for that purpose, and any violation of the donors' trust ought to be punished (CEHE, 2013). The report further cited donor controversies in higher education including University of South Dakota Foundation v. Larry Long and Lucy Buhler, Vermillion, SD (filed in 2007), Howard v. Tulane University, New Orleans, LA (filed in 2006), among others.

The Validation of Climate Smart Camel Feeds and Meat Value Chains for Improving Pastoralists Livelihood (VCS-Cafeme) project, funded by World Bank through the Kenya Agricultural and Livestock Research Organization (KALRO) had restrictions on utilization of the donor funds which included execution of procurement in accordance to the GoK and World Bank financial and procurement guidelines, requirement on strict use of University or government vehicles for travel as opposed to personal vehicles and access of funds through the University or government units (KCSAP, 2018). These restrictions hindered the implementation of the projects.

The Kenya Association of Fundraising Professionals (KAFP), an association formed for the purpose of protecting and enhancing philanthropy and volunteerism, encourages high standards of ethical behavior and professionalism among those participating in resource mobilization and fundraising. The Association calls on its members to guarantee that donations are used in line with donors' intentions and that the donor's express approval before changing the terms of contributions is sought (KAFP, 2022).

### 1.1.6 Climate change factors and effects

Climate is the long-term weather pattern that has been observed in a particular area, over a period of at least 30 years. Latitude, height, topography, proximity to the ocean, and geographic placement on a continent are just a few of the many variables that affect each climate (NatGeo, 2023). Among other things, the 21st century has been marked by an increase in climatic variability and change. Climate change is a natural process in which

weather variables like rainfall and temperature change over time, and human activities like logging and the burning of fossil fuels have made the problem worse.

The repercussions of climate change are being felt across the world and are growing increasingly alarming with each passing season. According to UN (2022), these shifts can be defined by among others, an increase in the earth's temperature, currently by 1.1°C since the 1800s, which has been caused by global carbon dioxide and methane emissions resulting in high concentrations of greenhouse gas. Main emitters of greenhouse gas include energy, industry, transport, land use among others.

Due to the extreme weather and environment, there has been an increase in rainfall, flooding, and tropical storms. Severe storms with global repercussions include the El Nino and La Nina events. El Nino phenomena is believed to occur at irregular intervals of two to seven years and continue no longer than one year, but La Nina phenomena is claimed to be unpredictable although her activities may extend between one and three years (NatGeo, 2022a).

In some areas, like Ecuador and Northern Peru, El Nino occurrences dramatically increases rainfall, while at the same time causing droughts in other areas, like Indonesia and Australia. Rainfall increases cause flooding, erosion, destruction of infrastructure, and loss of crops. Several countries across the world, from Africa, Asia, Latin America have been affected by El Nino severely over the years (Moloney, 2015). In 2010, La Nina events caused floods in Queensland, Australia, where more than 10,000 people were displaced and damages were estimated to more than $2 billion (NatGeo, 2022b).

Tropical cyclones such as Batsirai and Idai have hit the Indian Ocean on various occasions, resulting in massive economic losses and death across the African continent. In January 2022, Tropical Storm Ana passed over several countries in eastern and southern Africa, affecting Mozambique, Madagascar, Malawi and Zimbabwe leaving in

its wake widespread destruction and fatalities (Reliefweb, 2022c). The report further indicated that in just one month, Madagascar was hit by a series of devastating storms, which affected more than 420,000 people by death and displacement. Homes and critical infrastructure were destroyed.

In Mozambique, more than 45,000 people, including 23,000 women and children were affected by Tropical Storm Ana (Rakotoarivony, 2022; Reliefweb, 2022c; UNICEF, 2022). Locally in Kenya, extreme flooding has been witnessed in coastal, western and rift valley regions of the country (Victor et al., 2023). Even in other regions of the country, increased rainfall has been destructive to crops and infrastructure (Reliefweb, 2021).

According to UN (2022), human activities like poor irrigation methods and deforestation among others have changed fertile land and natural ecosystems. The majority of the cleared ground had previously been covered with local trees that could adapt to the climate of the area. Deforestation has destroyed the ecological environment that was home to microorganisms and insects, vital for maintaining the balance of nature, and also caused species to migrate. The report further avers that 24 percent of the world's land is deteriorating, yet these degraded areas directly support around 1.5 billion people. By 2030, desertification is predicted to displace 50 million people worldwide. “Droughts, flooding, and other extreme weather events are hitting those least equipped to recover and adapt” with countries such as Afghanistan, Bangladesh and Mozambique experiencing high numbers of internally displaced people, due to weather extremities (UNHCR, 2021).

Seasonal variations in rainfall, increased dry periods, increased rainfall, flooding, desertification of productive land among other climate change characteristics has resulted in severe droughts across the world. The African continent has been hit harder

by drought. Kenya relies on the production of staple foods such as maize to feed her people. The country also produces cash crops such as tea and coffee for export. Kenya has been experiencing frequent and intense droughts (Reliefweb, 2022b), due to the increased flooding and seasonal variations experienced across the country.

Kenyan agricultural regions including Meru, Tharaka, Kitui, Makueni, Lamu as well as pastoral areas including Turkana, Baringo, Garissa, Wajir, West Pokot, Marsabit among others, have experienced loss of livestock and severe hunger over the recent years (FEWS NET, 2020). Humanitarian organizations have been continually fundraising to mitigate against human suffering resulting from the persistent droughts especially in Arid and Semi-Arid Land (ASAL) (IFRC, 2022). The National Drought Management Authority (NDMA) estimates that there are currently 4.2 million people affected by drought, with 785,000 people at emergency state (Reliefweb, 2022a).

Globally there have been an uproar on the dire need to address climate variation and change for survival (Rich, 2022). It is a race against extinction. The government of Kenya has through the National Climate Change Response Strategy (NCCRS) of April 2010, outlined a comprehensive and coordinated set of solutions to address the challenges of socioeconomic development that is being presented by climate change. The Strategy also suggested an enabling implementation framework as well as a coordinated schedule of activities and measures to mitigate the effects of climate change (GoK, 2010). In addition, the government developed a National Climate Change Action Plan (NCCAP) in March 2013, to discuss the possibilities for a low-carbon, climate-resilient development path as the nation adjusts to the effects of climate change and works at reducing rising emissions (GoK, 2013).

The indigenous communities in Kenya have rich adaptation to climate change knowledge that they have used over time, to help them cope and survive from the adverse effects of

climate change. The Luhya community has rain-making tradition while the Maasai, alongside other communities have traditional resource conservation practices (Guto, 2021). Communities have also been incorporating adaptation strategies in their practices, such as cultivation of drought resistant crops, rearing of camels which are known to be resilient to climate change effects, pastoralists' communities engaging in farming practices among other strategies. Observation of cattle rearing communities on how camels from camel herding communities are able to survive even during droughts has led to an increase in the adoption of camel herding (Cuni-Sanchez et al., 2019). It is therefore noteworthy that there is a lot of indigenous knowledge on adaptation to climate change that is with the local communities, which if incorporated to the scientific and mainstreaming practices could enhance the adaptation and resilience to climate variation and change abilities in these communities and country at large.

### 1.1.7 Project performance

A project's performance is determined by whether it has been measured and met its objectives, scope, cost, and schedule. Indicators are signs that something has changed, and are therefore used to establish the performance of a project (Hinze, 2017). Project performance is also affected by many factors, including ensuring that necessary resources such as labor, materials, finances, time, among others are put in place prior to commencement (Mwanza et al., 2020).

There are various indicators of project performance including outcome indicators, which helps in determining the degree the project has achieved success, for example an increase in products generation; output indicators, which are the achievements of the project such as the number of beneficiaries, or the number of products generated; and sustainability indicators, which shows whether project benefits continue over time, especially after the

project funding is exhausted (Mosse & Sontheimer, 1996). According to Stadelmann et al., (2011), there is no accepted metric for measuring the effectiveness of adaptation.

For many years, it was assumed that the only information necessary to share with clients and stakeholders was related to time and cost. However, it is now recognized that the true status of a project cannot be accurately determined by time and cost alone. Each project may require its own set of unique metrics and Key Performance Indicators (KPIs) to provide a more comprehensive understanding of its progress and success (Kerzner, 2017). This has been necessitated by the high number of projects that end up performing poorly.

Performance of projects in the construction industry in Kenya has been noted to be poor, as denoted by historical research data (1963-2018) (Ong'ondo et al., 2019). The poor performance was mainly attributed to time overruns, followed by cost overruns, which are outcome indicators of project performance.

Given its consequences for social impact, infrastructure development, and economic growth, project performance is a crucial topic of concern on a global scale. Hwang & Zhao, (2015) state that numerous frameworks concentrating on cost effectiveness, punctuality, quality results, client satisfaction, and safety have been developed as a result of international efforts to measure and benchmark project performance. Their analysis of global benchmarking programs shows how nations and sectors modify performance indicators to fit regional circumstances while aiming toward global norms.

Given the infrastructure deficiencies and development priorities of the continent, project success is thought to be a crucial factor in determining socioeconomic progress across African nations. Effective and efficient project implementation is crucial in areas with little public funding and substantial donor support, not only to guarantee value for money but also to foster public confidence in institutions. According to Muriithi and Crawford

(2003), underperforming projects in Africa frequently result in resource waste, a halt in development, and a drop in donor trust. Effective and efficient project implementation is crucial in areas with little public funding and substantial donor support, not only to guarantee value for money but also to foster public confidence in institutions (Ika, 2012). Underperforming projects in Africa frequently result in resource waste, a halt in development, and a drop in donor trust.

In the Kenyan context, project performance is regarded as a critical determinant of socio-economic development, public service delivery, and institutional accountability. The government and development partners increasingly emphasize project outcomes, efficiency, timeliness, and sustainability as key performance indicators (Resa & Nzomo, 2024). Stronger performance evaluation standards are required since poor project performance has historically led to delays, cost overruns, and under-delivery of services (Kariega, 2020).

### 1.1.7 Contextualization of the study

Over the past 20 years, Kenya's climate has grown more erratic, with regular droughts, flooding, and changing seasons impacting food output, water availability, and human health. Particularly vulnerable are Kenya's arid and semi-arid lands (ASALs), which comprise over 80% of the nation's land area (KIPPRA, 2024). Some of the poorest and most disadvantaged people live in these areas, where pastoralism and rain-fed agriculture are major sources of income. Existing development issues and disparities in these places could be made worse by climate change.

In this view, the Kenyan government has created a comprehensive policy framework that gives climate change adaptation top priority in order to address these escalating threats. Among these is the Climate Change Act of 2016 (GoK, 2023), which requires the incorporation of climate action into County Integrated Development Plans (CIDPs)

(National Treasury, 2022) and institutionalizes adaptation planning at the national and local levels. Moreover, counties can now access funding and carry out locally driven adaptation projects thanks to the creation of the County Climate Change Fund (CCCF) system.

Although there has been significant progress in strategic planning for climate adaptation, converting these plans into concrete, successful measures is still a major obstacle. Institutional characteristics, resource allocation, stakeholder participation, and regulatory framework are all components of strategy implementation that affect implementation of the strategies (Hirssons & Ludviga, 2020). These components are necessary for this intricate process, particularly in dynamic settings like ASALs.

Discrepancies between well-thought-out adaptation strategies and their actual implementation on the ground has been brought to light by numerous research (Chaudhury et al., 2020; UNEP et al., 2021). This disparity is frequently ascribed to a lack of county-level institutional capacity, ambiguous stakeholder roles and duties, insufficient funding, among others (Ampaire et al., 2017). As a result, a large number of adaptation programs either operate poorly or do not provide communities with long-term advantages. Notwithstanding these reservations, there is a dearth of empirical research that thoroughly evaluates the impact of strategy execution on project performance, particularly in the context of Kenyan ASAL.

Among the Kenyan counties most impacted by climate change are Marsabit and Isiolo (IPC, 2023). Conflicts over natural resources, livestock losses, flash floods, and recurring droughts are common. Both counties have benefited greatly from adaptation financing and have taken part in initiatives like: The Climate Smart Agriculture Initiative in Kenya (KCSAP) (KCSAP, 2022), Framework for Ending Drought Emergencies (EDE) under NDMA ((NDMA, 2023), The County Climate Change Fund of the Adaptation

Consortium (CCCF) (CIF, 2023), and Numerous community-based adaptation projects run by NGOs (KIPPRA, 2023; KRC, 2022; Prepare Center, 2014).

These counties offer a variety of socio-economic and ecological features, but they also share governance and resource limits, making them a perfect place to evaluate strategy implementation and performance. Designing more successful adaptation plans for other vulnerable areas can be aided by knowing what works, what doesn't, and why in these counties. Policymakers, project implementers, donors, and local communities will all benefit from this study thorough analysis of strategy implementation processes and how they affect project performance. Supporting the creation of more responsible, efficient, and long-lasting climate adaption measures in ASAL regions is the ultimate objective.

**1.2 Statement of the Problem**

Strategic management practices influence the effectiveness of organizations strategic initiatives and ultimately, the effectiveness of the organizations as a whole. Many organizations formulate excellent strategies. However, if the implementation of these strategies is not done effectively, these very well thought out plans often fail to achieve their intended goals. The development of effective strategies and their successful implementation are interdependent. According to Carpenter and Sanders (2014), the effectiveness of an organization's strategy and the successful implementation of the strategy, are what determine its performance.

There has been an increase in climatic variability and change over the years and the repercussions are growing increasingly alarming with each passing season. As a result, the government, Non-Governmental Organizations (NGOs), and other actors have been strategizing on ways and means of managing climate variations and change. This has been done through development of excellent strategies on adaptation and mitigation of climate change, such as the National Climate Change Response Strategy (NCCRS) (GoK,

2010) and National Climate Change Action Plan (NCCAP) (GoK, 2013). Numerous climate change adaptation projects have also been carried out across the nation by various players.

In 2011, severe drought left over 3.5 million Kenyans and 500,000 refugees in Northern Kenya at risk of starvation and possible death, with more than 385,000 children under five experiencing severe malnutrition (Safaricom, 2023). As a result, a funds drive dubbed "Kenyans for Kenya, K4K" was initiated by the Kenya Red Cross (KRC), who created coalitions with local corporate organizations such as Safaricom Foundation, Kenya Commercial Bank (KCB) Foundation, members of the Media Owners Association (Prepare Center, 2014). According to Safaricom (2023) over KShs.677 million was raised in cash and close to KShs.300 million in material donations. The donations were handed over to be managed by the KRC.

However, these well-crafted strategies, policies and initiatives have had little success of the intended goals. Despite the various climate change adaptation projects implemented across the country, especially in Arid and Semi-Arid Lands (ASALs), the effects of climate change continue being experienced in a great magnitude (OCHA, 2022; Reliefweb, 2022b). According to Reliefweb (2022b), even camels, known to be highly adaptive to excessively hot and dry climates are struggling to survive. In this case, the strategies developed by various actors to help the country adapt to climate variations and change have not achieved the intended impact.

According to IPC (2023), an estimated 4.4 million people in the ASAL regions were experiencing high levels of Acute Food Insecurity - IPC AFI Phase 3 (Crisis) or higher. The severity of food insecurity had further been predicted to worsen once more during the March–June 2023 period, with approximately 5.4 million people expected to experience high levels of acute food insecurity (IPC AFI Phase 3 or above). Acute food

insecurity in the ASAL areas is at its worst level in years, according to the projected estimates. Immediate action is needed to close food gaps, safeguard their livelihoods, and prevent and treat acute malnutrition (Reliefweb, 2023).

The identified research problem was a combination of conceptual, contextual and empirical dimensions of the research problem. The purpose of this study was to assess strategy implementation on the performance of climate change adaptation projects in Kenya. The study assessed climate change adaptation projects implementation issues in the ASAL regions of Kenya with a focus on strategic implementation and the performance of the projects.

## 1.3 Research Objectives

The study was guided by the following objectives:

### 1.3.1 General objective

The general objective of this study was to assess the effect of strategy implementation on the performance of climate change adaptation projects in Kenya.

### 1.3.2 Specific objectives

The specific objectives of this study were to:

i. Establish the effect of institutional characteristics on the performance of climate change adaptation projects in Kenya.
ii. Determine the effect of resource management on the performance of climate change adaptation projects in Kenya.
iii. Examine the effect of stakeholder participation on the performance of climate change adaptation projects in Kenya.
iv. Investigate the effect of regulatory framework on the performance of climate change adaptation projects in Kenya.

v. Evaluate the moderating effect of climate change factors and effects on the relationship between strategy implementation and the performance of climate change adaptation projects in Kenya.

## 1.4 Research Hypothesis

The study hypothesis was as follows:

i. Institutional characteristics significantly affect the performance of climate change adaptation projects in Kenya;

ii. Resource management significantly affect the performance of climate change adaptation projects in Kenya;

iii. Stakeholder participation significantly affect the performance of climate change adaptation projects in Kenya;

iv. Regulatory framework significantly affect the performance of climate change adaptation projects in Kenya;

v. The moderating effect of climate change factors significantly affect the relationship between strategy implementation and performance of climate change adaptation projects in Kenya.

## 1.5 Significance of the Study

This study addresses the knowledge gap in understanding how effectively climate change adaptation strategies are implemented in Kenya. The study is expected to establish the challenges affecting implementation of climate change adaptation projects and further give insights on how climate change adaptation projects can be implemented effectively in Kenya. Through these insights, the policy makers including NGOs, county and national governments and development agencies shall develop realistic project plans and implementation frameworks that are practical and effective.

The study shall give practical recommendations for enhancing implementation efficiency, which can be utilized by project implementers and other actors championing climate change adaptation initiatives to successfully implement effective climate change adaptation projects.

The purpose of donations for implementation of climate change adaptation projects is mainly to help affected communities in adaptation to climate change effects, by alleviating the suffering of human and other living things, as well as enhancing lives. Insights on effective implementation of climate change adaptation projects shall result in achievement of project goals and ultimately, effective utilization of donor funds.

Successful implantation of projects will result in reduced climate vulnerability, better access to water, pasture and food resources, reduced conflicts, reduced rates of malnutrition and ultimately improved livelihoods to the beneficiaries and community members.

Majority of the literature now in publication concentrates on the formulation of strategies and implementation of strategies in institutions and constructions companies. Little empirical study has been done to evaluate the actual implementation strategy factors and how they affect results in practice, particularly in developing nations. This study examined the relationship between strategy implementation and climate change adaptation project performance, adding to the expanding body of information on climate change adaptation. The findings can be used as reference material by other researchers in carrying out related research.

### 1.6 Limitations and Delimitations of the Study

Although this study offers valuable insights into the relationship between strategy implementation factors and the effectiveness of climate change adaptation projects in Kenya's ASALs, it should be noted that there were a number of limitations.

i) It was more difficult to determine the causal links between the variables due to the cross-sectional research design used in the study. More convincing proof of cause-and-effect dynamics might have been provided by longitudinal data.

ii) Applicability of the study results to other ASAL regions of Kenya or comparable circumstances in other areas may be impacted by the sample size's restriction to two counties within ASAL regions.

iii) Some of the beneficiary respondents were not competent to give detailed information about the implementation of the project under study.

iv) It was difficult to access reports on the implementation and outcome of the projects under study since they had wound up.

v) Whereas there are several strategy implementation factors that could possibly affect implementation of climate change adaptation projects, the study was limited to four factors only.

vi) Some of the respondents were not willing to divulge information on pertinent issues that caused low success rates in implementation of climate change interventions in Kenya.

The scope and focus of this study were defined by a number of thoughtful choices. These was to help the researcher to focus on the study.

i) The study employed a quantitative methodology supported by significant qualitative interviews and observations of project sites, to enable greater generalizability and comparability across various ASAL countries

ii) The study was restricted to two counties: Marsabit and Isiolo, located inside Kenya's ASALs. These areas were chosen due to their high vulnerability to climate, having been listed by IPC classification as being at *Emergency* Phase.

iii) The researcher supplemented and ascertained beneficiary responses with KI interviews and observation methods to supplement and ascertain some of the given information.

iv) Triangulating qualitative information from key informants and observation helped the researcher to gather relevant project information.

v) To maintain a clear analytical focus, the study purposefully excluded other potential strategy implementation factors and instead concentrated on the impact of institutional characteristics, resource management, stakeholder participation and regulatory framework on project performance.

vi) The researcher gave assurance to the respondents that the research was not meant for audit of project performance but for purposes of academic studies. In addition, respondents were provided with Informed Consent Forms.

**1.7 Scope of the Study**

This study was limited to analyzing the effect of strategy implementation on the performance of climate change adaptation projects within the ASAL regions of Kenya. It aimed to assess how various strategy implementation elements, viz institutional characteristics, resource management, stakeholder participation and regulatory framework influenced the performance of these projects. Further, the study investigated how climate change factors and effects, in particular, seasonal variation, extreme weather conditions and drought, modified the influence of strategy implementation elements on the performance of the projects.

The study was limited to 11 projects, where 6 were located in Marsabit County, namely: Walda Food Security in Uran; Sirata Irrigation Project in Logologo; Kalacha Irrigation Scheme in Kalacha; Madoadi Small Scale Irrigation and Production Project in Sololo; Khandere Irrigation Scheme in Kinisa; and Songa Farmers Irrigation Scheme in Karare.

Five projects were located in Isiolo County, namely: Kenya Climate Smart Agriculture Project in Oldo Nyiro; Elsa Ntirimi Water Project in Burat; Rapsu Irrigation Scheme in Kina; Attan Irrigation Project at Ngaremara and Sukuma Integrated Community Project in Ngaremara.

Data was drawn from climate change adaptation projects which had completed implementation by the year 2021. Data was collected between December 2024 and February 2025. Data was collected from community beneficiaries, county and national government representatives and community representatives, and was collected through questionnaires, interviews and observation techniques.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

This chapter discusses the theoretical foundations of the dependent and moderating variables as well as the constructs of the independent variable. The literature done by other researchers on the basic objectives of this research is also reviewed in this chapter. Further, the chapter contains the conceptual framework, operationalization of the objectives and research gaps derived from empirical literature review.

## 2.2 Theoretical Framework

The theoretical underpinnings of this study are described in this section. The study attempts to advance theoretical understanding in the field of strategic management by assessing the impact of strategy implementation on the performance of climate change adaptation projects in Kenya through a theoretical framework.

### 2.2.1 Institutional theory

This theory supported the Institutional Characteristics objective. The theory was developed by John Meyer and Brian Rowan in the late 1970s (Meyer & Rowan, 1977). It was established as a way to look into how organizations fit into, relate to, and were molded by their social, political, economic, and environmental contexts. According to this theory, the processes via which organizational structures, organizational culture, rules and regulations, norms and routines, and so on, get to be established as authoritative standards for social behavior. This theory provides a framework for comprehending how organizations maneuver around internal processes, social structures, and laws of governance in order to exist.

Organizations function in an environment that is continuously changing, not in a vacuum. The elements that the firms deal with include external influences including cultural

differences, regulatory constraints, expectations from suppliers, and customer demands. Therefore, in order for organizations to survive, they must be able to adapt to the ongoing changes in their environment. However, institutional theory has been criticized due to its static nature such as the use of "institutionalization" notion, describing institutional structures, and generating better institutional explanations (Mohamed, 2017). Silva et al., (2024) tested institutional theory through a study that critically evaluated the contributions made to institutional theory by Douglass North and Ha-Joon Chang, while highlighting the theory's usefulness in tackling the socioeconomic and institutional issues that the globe was currently facing. The study established that use of institutional theories had proven to be still relevant and were necessary in the public administration domain to address the challenges posed by modern phenomena like the COVID-19 pandemic, the long-term effects of climate change worldwide, and the recent conflict between Russia and Ukraine.

This theory was beneficial to this study because it enabled the researcher to understand the institutional characteristics of the funding organizations and the project implementers. For example, the organizational structure affected communication and information flow which was crucial in implementation of the projects under study. In addition, the leadership approaches embraced by the implementers of the projects were expected to greatly determine the performance of these projects. The choice and use of communication technology in implementation of the projects would be of essence as well. Through this theory, the research would gain an informed evaluation of how the elements of institutional characteristics contributed to the success or failure of the implemented projects.

### 2.2.2 Resource based view (RBV)

This theory supported the Resource Management objective. The theory was developed by Jay B. Barney, in his article "Firm Resources and Sustained Competitive Advantage" (Barney, 2000). The theory argues that an organization that is endowed with strategic resources enables it to enjoy competitive advantage. These resources are tangible (including land, equipment) and intangible (including organizational culture, knowledge, skills). An organization can have resources, however, according to this theory, strategic resources are defined as having four characteristics: valuable, rare, inimitable and non-substitutable.

A resource's ability to add value to the goods and services that are provided to customers qualifies it as valuable. A scarce resource is one that is difficult for other organizations to obtain. Resources that are unique are difficult for rivals to imitate. A resource is non-substitutable if rivals are unable to discover comparable advantages. The notion highlights the knowledge that a company's success depends on its capacity to forge a long-lasting competitive advantage in its sector. This theory has been criticized for taking account of internal resources and competencies only as a driver to give businesses a competitive edge and improve performance (Truijens, 2003).

Kash et al., (2014) undertook a study on Healthcare Strategic Management and the Resource Based View, and according to the findings, the notion that RBV was best applicable to hospitals when they were implementing primarily externally driven strategic initiatives was supported by the differences in strategy implementation approaches that were observed with regard to resource allocation and coordination.

This theory was insightful to this study because it guided the researcher in understanding whether the implementers of the projects under study were endowed with strategic resources that enabled the projects gain competitive advantage. The implementation of

the projects required a lot of financial resources, competent skilled human resources, and advanced machines and technologies. The beneficiary communities under study, being marginalized communities, were not economically empowered, their education levels were not advanced, and they lacked advanced communication technologies as well. The theory helped the researcher in understanding how the funding and implementing teams employed the strategic resources in their possession to empower the beneficiary communities and ultimately create positive change and impact their livelihoods.

### 2.2.3 Stakeholder theory

This theory supported the Stakeholder Participation objective. The theory was developed in 1984, by F. Edward Freeman, in his book “Strategic Management: A Stakeholder Approach” (Freeman, 1984). According to this theory, an organization has obligations to a larger range of stakeholders, including suppliers, rivals, the community, employees, environmental organizations, and governmental organizations. Stakeholders, in Freeman's opinion, are "those groups that the organization would not be able to function without." The interests of an organization's stakeholders should therefore be considered while making choices. Additionally, a business should work to maintain stakeholder satisfaction since this will ultimately result in a positive working relationship and long-term success.

Customers and employees are among the stakeholders who are impacted by an organization's decisions as individuals. Additionally, the organization's actions have an impact on stakeholders such as governmental bodies and political entities, which in turn has an impact on a nation and its people. In as much as the beneficiaries of multinational organizations have no other connection to the company, the organizations have an impact on people's lives in many different countries. Organizations consequently need to consider the state of society as a whole because they are not isolated entities but rather a

component of a greater social body. Stakeholder theory critics however, argue that it is impossible to fairly balance the requirements and interests of the numerous stakeholder groups (McAbee, 2022).

Parmar et al., (2010) undertook a study on Stakeholder Theory: The State of the Art, to examine key applications and modifications of stakeholder theory across several fields, including business ethics, strategic management, finance, accounting, marketing, and general management. The study identified three interconnected business challenges viz understanding how value is generated and exchanged, linking ethics with capitalism and guiding managers to approach management in a way that tackle those issues. The study proposed that the most effective way to address the interconnected business challenges was by placing stakeholder theory at the core of an organization's business approach.

Various stakeholders including suppliers, the local communities, governmental groups, media, and implementers from various fields and backgrounds were involved in the projects. This theory was of importance to this study because it helped the researcher in understanding the relationship between the project implementers and their stakeholders, in particular the project beneficiaries. The projects under study were climate related, and were geared at impacting positively on the lives of the communities ravaging from the adverse effects of climate change, therefore understanding of this relationship was of essence.

It was crucial to understand the involvement of the beneficiary communities in the implementation of the projects. In addition, as was expected, the beneficiary communities had unique characteristics due to the hardship conditions they lived in, and there was need for the funding organizations and implementing team to understand that, in order to integrate them into the projects successfully. There was need to build their

capacity in order to empower them with the right attitudes, skills and knowledge, about agricultural, agro-pastoralism and economic practices.

Stakeholder participation included the inclusivity of the beneficiary communities in decision making, as well as implementation of the projects. these communities had existed over the years in adverse weather conditions. As such, they had some indigenous coping mechanisms on management of harsh and unpredictable climatic conditions, and their knowledge was expected to have greatly contributed to the implementation of the projects. seeking their opinions and inputs in the projects brought a sense of ownership to them, hence making the projects acceptable, and ultimately enhancing the outcome and sustainability of the projects.

### 2.2.4 Path dependence theory

This theory supports the Regulatory Framework objective. The theory was founded by Paul David (1985) and Brian Arthur (1989, 1990) in their papers explaining the unacceptance of new technologies and the evolution of industries, (Stack & Gartland, 2003). The theory discusses a variety of processes, including organizational behavior, institutions, patterns of economic or social growth, and technical standards, where earlier events or decisions influence later events or decisions.

In order to support the assertion that past events can have a large impact on the future, the theory places a strong emphasis on the idea that "history matters" (Pierson, 2000). This theory clarifies why, despite the existence of newer and more effective products and practices, use of historical preferences of a product or practice inform continuous use. Regulatory framework is anchored on this theory due to the nature in which laws, rules, requirements and regulations governing implementation of projects are repeated across projects over the years. According to Alessandro et al., (2021), the establishment of new policies and regulations is expensive, and they frequently result in learning, coordination,

and adaptive expectations. Social actors' cost of leaving established regulatory frameworks typically increases significantly as they commit to existing regulations and policies.

Institutions that support path dependence contend that projected changes are typically small, and thus it is cautious to rely on previous experiences and regulations. Additionally, implementing new products or processes typically has financial consequences, which makes it difficult or unattractive to make the change. Further, adopting new products or systems usually has cost implications that lead to inability or reluctance of adopting the change. Further, policies are frequently created with continuity rather than change in mind, making it harder for policies to be altered but instead, encourage continuity.

Path dependency theory is criticized to be a trendy term for the idea that "history matters," but lacks an articulate and convincing explanation of how decisions are made over time; it explains only stability, not change; and its normative implications are unclear and little unexplored (Kay, 2005).

Trouvé et al. (2010) used path dependence theory as a theoretical foundation to conceptualize the political and social foundations of various clinical, organizational and institutional players involved in the development of a public integration policy in France. The primary goal was to demonstrate the value of Path Dependency framework in the French context, with an interest of applying the framework to examine the setting of other nations. The study established that use of path dependency framework helped in understanding of how different parts of a system interact and influence each other, aiming for a cohesive and holistic approach. This was an indication that the theory had been used and supported other studies.

This theory was crucial to this study, and aimed to establish how the regulatory frameworks relevant to the projects under study were applied. It was interesting to understand how the government policies such as public procurement and disposal act, the public financial act, the National Environment Management Authority (NEMA) licensing, the Water Resources Management Authority (WARMA) permit among others, affected implementation of the projects. The study was interested in understanding whether community agreements were in place, and how the clauses stipulated in the agreements impacted the communities. Donor conditionalities were expected to have been issued by the funding organizations to govern utilization of the donated financial resources and this was of interest to the study.

### 2.2.5 Theory of change (ToC)

The moderating variable of this study was Climate Change Factors and Effects, and it was anchored on the Theory of Change. This theory originated from Peter Drucker in his book "The Practice of Management" (1954) (Drucker, 2012). This theory is enunciated in his description of Management by Objectives. Since the 1980s, the theory was further explored by Huey-Tsyh Chen, Peter Rossi, Michael Quinn Patton, Helene Clark and Carol Weiss.

The theory was also applied by the Aspen Institute Roundtable on Community Change to analyze and assess extensive community efforts in the 1990s, with the peak being a book publication by the Institute on "New Approaches to Evaluating Comprehensive Community Initiatives" (Connell et al., 1995). The theory of change goes further in explaining how actions made as part of an initiative should result in an ultimate outcome. The idea focuses on the efficacy of initiatives like policies, strategies, programs, or projects. The theory aims to distinguish between expected and actual results. Before deciding on types of intervention to be used to attain the desired goals, the stakeholders

first must design their desired outcomes. Identification of long-term objectives (initiatives) that are practical and easily understood by the participants is required by the theory of change approach. The conditions required for achieving the goals are also recognized, and these serve as prerequisites for the long-term result.

A society's social structure can change, leading to social changes. Examples include the industrial revolution, the end of slavery, and the feminism movements (Serrat, 2013). Thus, theories of change assist societies in coping with social changes, which are typically difficult processes because they include adjusting or letting go of traditions, beliefs, and ideas and prompt various acts as a response. Theory of Change has nevertheless been criticized that it is frequently applied as a framework to enforce agreements rather than as a dynamic, guiding resource that promotes self-analysis and adaptation (Ho et al., 2023).

In their paper published in the PERFORM2Scale research consortium, Kok et al., (2025) discussed the theory of change (ToC), its reflections, and modifications throughout time. The PERFORM2Scale experience provided important insights into how ToCs could be used to track and assess the growth of projects aimed at upgrading the health system. The creation of a common vision for scaling up interventions is aided by ToCs. ToC-based strategies should actively engage a wide variety of stakeholders and depend on their continued participation in learning and reflection during implementation and scale-up.

This theory was relevant to this study, in that climate change is a phenomenon which had negatively impacted on the world's societies. Positive interventions against climate phenomena have received concerted efforts from many quarters in order to address environmental, human and wildlife ecosystem. Consequently, societies have to change their norms to effectively contribute to adaptation and mitigation against climate change.

More specifically, in this study the climatic change had negatively impacted on the livelihoods of the pastoralists of Northern Kenya which was the study locale. The pastoralists had been practicing transhumance herding over the years. Climate change resulted in shortage of pasture and water for their livestock. This occasioned the need for attitudinal changes of the pastoralists from pure pastoralism to hybrid lifestyle, including agro-pastoralism, acquisition of agricultural skills and knowledge, and sedentarization. Noteworthy, were the challenges arising from resistance to change occasioned by inertia, fear of unknown, ingrained socio-cultural fervor and limited competencies to management of change.

### 2.2.6 Theory of constraints (TOC)

This study's dependent variable was project performance and it was anchored on the Theory of Constraints. This theory was founded by Eliyahu M. Goldratt in 1984, in a book titled "The Goal" (Ascendle, 2022). The theory states that there can usually be a very small number of restrictions present at any given time, which limits an organization's ability to achieve its most important goals. The adage "a chain is only as strong as its weakest link" is adopted by the theory. It asserts that the weakest person or component can always harm them, destroy them, or at the very least have a negative impact on the outcome, which is an indication that processes and organizations are fragile.

The goal of TOC is to increase the efficiency of an organization's processes so that it can accomplish its objectives. In addition, TOC assists organizations in identifying simple solutions to complex problems. The Theory through a process determines the most significant constraint (i.e., limiting factor) that prevents the accomplishment of a goal and then methodically removing that limitation until it is no longer the constraint (TOC Institute, 2021).

Sarkar et al., (2024) built on the Theory of Constraints (TOC) concept in their study, which proposed a methodology for identifying and analyzing bottlenecks in highway projects in India. The approach involved the use of TOC tools such as the Current Reality Tree (CRT), Evaporating Cloud (Conflict Diagram), Future Reality Tree (FRT), and Prerequisite Tree (PrT) to support project improvement efforts.

The Theory of Constraints is criticized for its treatment of several factors, including manufacturing technology, capacity, constrained resources, product mix, demand, and prices, as fixed, ignoring the fact that each of these elements is flexible over the long term. Another criticism is that the theory disregards operating costs and just accepts them as part of the price (Nowlin, 2004).

This theory was of value because this study was assessing the performance of climate change adaptation projects that had been implemented in the ASAL regions of Kenya. In cases where projects failed in achieving their intended goals, the theory guided the study in identifying the "weak link" that resulted in the failure.

## 2.3 Empirical Literature Review

This section examines existing empirical research related to this study, focusing on uncovering key findings, research methods, and existing knowledge gaps. It provides evidence-based perspectives on how elements of institutional characteristics, resource management, stakeholder participation, regulatory framework, climate change dynamics, and project performance have been explored across different settings contexts.

### 2.3.1 Institutional characteristics

Implementation of climate change adaptation projects is likely to be affected by institutional characteristics which are made complex sometimes due to a combination of more than one implementing organization, and in addition, the inter-relationship between the implementing organizations. In this study leadership style, organizational structure,

and use of communication technology were some of institutional characteristics that affected its correlation with the projects outcome.

Leadership is widely recognized as a critical factor influencing project outcomes. Research by Fareed et al. (2023) on Transformational Leadership and Project Success: The Mediating Role of Psychological Empowerment emphasized the role of transformational leadership in enhancing project success. Their study, conducted within public sector projects, revealed that transformational leadership significantly improved project performance by fostering psychological empowerment among team members. This empowerment, marked by increased confidence, autonomy, and a sense of purpose, acted as a partial mediator, suggesting that effective leadership not only sets direction but also activates internal team drivers crucial to achieving project goals.

These insights underscore the need for organizations, especially in development and climate-related projects, to invest in leadership development programs that promote transformational behaviors, such as individual consideration, intellectual stimulation, and inspirational motivation, as a pathway to higher project effectiveness.

Valuable insights were provided into the influence of project managers' leadership styles on project management performance in a study carried out by Thoha & Avandana (2020). According to their study, which was carried out in a business setting in Indonesia, transformational leadership styles have a tendency to lead to better team collaboration, more successful projects, and more efficient project execution. On the other hand, it was discovered that transactional and laissez-faire leadership philosophies have little to no effect on important performance metrics. These results demonstrate how important human and relational factors are in enhancing project management's structural and technology elements.

A study on the Role of Leadership in Strategic Management was carried out by (Jabbar & Hussein, 2017). Through analysis of existing literature, the study sought to establish the role of leadership in strategy formulation and implementation. The study noted that leaders who were accountable ensured that the management process was effective by providing the framework for a well-thought-out strategy plan and by providing a vision that directed the organization's formulation of strategy, and ultimately accomplishment of the strategies.

The study established that leadership was responsible for the alignment of the organization's goals and objectives as well as training and motivation of staff on attainment of the goals and vision, which resulted in the competitive organization and efficiency. Leadership also undertook evaluation of the processes to ascertain any shortcomings, formulate new strategies, and align them to any change thereof.

Gasela (2021) undertook a study on Strategy Implementation in South African Public Entities between 2006 and 2016, in which he sought to learn more about the connection between organizational performance and leadership throughout the implementation of a strategy in the South African Northern Cape provincial public organizations. The study found that the implementation of strategies and organizational performance were negatively impacted by ineffective leadership alongside inadequate financial and human resources. The study noted that most organizations struggled with leadership capacity, which made it difficult to implement strategies. In addition, the study noted that some entities had poor Boards, which led to weak leadership since the organizations lacked direction.

A study on Influence of Strategic Leadership on Strategy Implementation at Kenya Revenue Authority (KRA), Southern Region in Kenya, with the aim of understanding the role of strategic leadership on strategy implementation was undertaken by Nyong'a and

Maina (2019). The study found that management commitment significantly influenced how well a strategy was implemented at KRA, with management demonstrating this commitment through management stability, direction, and stewardship, victories, instilling self-confidence and autonomy, adding value to the resource management process, aligning and allocating resources, decision-making, and flexible controls.

The study also revealed that KRA had played a substantial and active role in fostering participatory leadership during strategy implementation, strategy enablement, and strategy evaluation, all of which were essential for guaranteeing successful strategy implementation. This study showed the influence of leadership, which is a characteristic inherent in organizations, on successful implementation of strategies.

Lasrado and Kassem, (2020) undertook a study on The Effects of Transformational Leadership and Organizational Culture on Organizational Excellence, which sought to examine how organizational excellence was affected by the various models of organizational culture and by transformational leadership, as well as the interaction between these two concepts. According to the study, transformational leadership had a direct impact on an organization's financial performance and could optimize performance excellence when it fostered a culture of involvement and/or adaptation. However, organizational excellence did not directly or strongly correlate with transformative leadership. The study opined that organizational excellence could be attained by embracing a more thorough application of the transformational leadership style.

Only engagement culture, according to the study, had a favorable impact on organizational excellence. The findings revealed that although engagement cultures were necessary for leaders to benefit from business excellence models, transformational leadership styles were still essential for achieving organizational success.

The pivotal role of shared leadership in enhancing project success, particularly within dynamic and knowledge-intensive project environments is highlighted by Imam and Zaheer (2021) in their study titled Shared Leadership and Project Success: The Roles of Knowledge Sharing, Cohesion and Trust in the Team. Their research shows that when strong intra-team knowledge sharing, cohesiveness, and mutual trust are present, shared leadership, where team members collaboratively influence and advise one another—significantly improves project performance. By highlighting the advantages of decentralized decision-making and group ownership of project objectives, this viewpoint questioned conventional hierarchical leadership approaches. Their results also indicated that the quality of interpersonal processes inside the team had a significant impact on the efficacy of shared leadership, rather than only being structural.

Roberts (2010) undertook a study on Prioritizing Climate Change Adaptation and Local Level Resilience in Durban, South Africa, which discussed the opportunities and institutional hurdles in getting various sectors in the eThekwini Municipality to acknowledge and take action to adapt to climate change. The study found that a targeted approach was chosen for the functions of water, health, and disaster management. The analysis found that the water sector had greater influence within municipal structures, was well-resourced, and had managed to hold onto a respectable skill set.

In terms of hierarchy, the health sector was in the center, but it faced major resource and staffing shortages. The sector had also experienced changes in leadership. Along with other issues, the disaster management function was given the lowest priority in the hierarchy. It also faced a staffing shortage. According to the assessment, the municipal adaption plan indicated the urgent need for reform of current institutional arrangements, beginning with revision of the then unit's organogram.

The structure of project implementation is a critical determinant of project success, as it defines roles, responsibilities, communication pathways, and decision-making authority. The study of Sarhan and Dulaimi (2022) on The Impact of Changing Project Organization Structure on Project Performance, gave compelling evidence on the negative impact of unplanned changes to project organizational structures during the execution phase. Focusing on construction projects in the United Arabs Emirates (UAE), the study demonstrates that such changes often result in role ambiguity, disrupted communication, and reduced team effectiveness, all of which contribute to poor project performance.

Their results emphasize how crucial structural stability and clarity are to project execution. Regular or badly handled organizational structure changes, such as adjustments to reporting lines, team makeup, or leadership, can demotivate team members and threaten established workflows. The study underlines that while some structural flexibility is important in dynamic project environments, these adjustments must be well-planned and communicated to avoid endangering performance outcomes.

A study on Organizational Structure and Project Success: The Mediating Role of Knowledge Sharing, by Raziq et al. (2020) sought to scrutinize the association between organizational structure elements and project performance, while also exploring whether knowledge sharing acted as a mediating factor in those interactions. According to the study, the knowledge sharing role in comparison to organizational structure and project success varied because whereas knowledge sharing mediated the correlations between integration and project performance, in formalization such mediation only existed for public organizations. High-level centralization was considered by the study as detrimental to project management and success since it negatively correlated with project

success and knowledge exchange. This study brought to our attention that organizational structures had an impact on the performance and management of implemented projects.

A study discussed the functional structure, projectized structure, also known as pure project organization, the matrix structure, or hybrid structure, which combines projectized and functionalized structures and aimed to tap on the advantages presented by both types of structures, and lastly the mixed organizational structure. This study was undertaken by George, (2020) on How Organizational Structures affect Project Outcomes, with an aim of understanding the various organizational structures used in project implementation and their impact on implementation of the projects.

The study found that when the appropriate organizational structure was selected, the project could be managed with ease, resulting in customer and organizational satisfaction and the elimination of waste because of proper resource management. According to the study, some of the conflicts that occurred in project environments would not occur if a suitable organizational structure was selected. This study brought to light the relationship between organizational structures and the outcomes of projects implementation.

Shah Nizam (2017) in his study on the Influence of Organizational Structure, Resources and Culture on Project Performance: A Study among Construction Firms in Penang, underscored the significant influence that internal organizational elements, particularly structure, resources, and culture, had on project performance within construction firms in Penang. According to her research, a well-defined and properly aligned organizational structure makes it easier to communicate, make decisions, and allocate resources, all of which are essential for accomplishing project objectives including cost effectiveness, on-time delivery, and high-quality results. The analysis confirms the general agreement in the literature on project management that while structure clarity and cultural support

improved project execution, a mismatch between organizational design and project needs could result in performance inefficiencies.

A study conducted in the Nigerian construction sector challenges the prevailing assumption that well-defined organizational structures inherently lead to successful project outcomes, Iroha et al. (2024), in their study on Flawed Institutional Structures: Project Managers Underutilized in Nigeria's Construction Industry. The research highlighted that systemic institutional challenges such as corruption, political interference, and weak governance, significantly undermined the role and authority of project managers. As a result, even when formal project implementation structures were in place, their effectiveness was often compromised by broader contextual issues. These findings underscore the limitations of relying solely on structural design for project success, suggesting that institutional and environmental factors can override the intended benefits of organizational frameworks.

A research study finding showed that improved project performance was significantly positively correlated with the use of digital communication technologies. Notably, the study found that the degree of top management support and the ease of use of these technologies were two important moderating factors. It was discovered that the moderating effect of ease of use was more significant. This implies that digital tools that are easy to use are more likely to be used effectively, which improves project outcomes. Although to a lesser degree, top management support also contributed, suggesting that leadership endorsement promotes the uptake and efficient application of communication technologies. The study was undertaken by Afridi et al. (2023) on the Impact of Digital Communications on Project Efficiency through Ease of Use and Top Management Support.

These insights underscore the importance of not only implementing digital communication tools but also ensuring they are accessible and supported by organizational leadership. For projects operating in challenging environments, such as climate change adaptation initiatives in arid and semi-arid regions, these factors are crucial. The ability to maintain clear and efficient communication channels can significantly influence the success of such projects, particularly when teams are dispersed or operating under resource constraints.

Megha and Zaware (2019), in their study on Defining Impact of Implementing ICT in Organizations for Improving Organizational Performance, emphasized that the successful implementation of ICT could significantly enhance organizational performance by streamlining operations, improving decision-making processes, and fostering innovation. Their study, which evaluated the influence of ICT on organizational functions, found that organizations leveraging ICT effectively experienced increased efficiency, better communication flows, and more agile strategic responses. The authors argue that the mere adoption of technology is insufficient; rather, alignment between ICT initiatives and organizational goals is essential to realizing performance gains. The study reinforced the view that technology was not a stand-alone solution but a component that must be integrated into the broader organizational system to drive performance improvement.

Mwangi (2015) carried out a study on the Influence of ICT on Successful Project Completion in the Kenyan Banking Industry, which determined that Project Management Systems (PMS) were utilized in project management in the majority of organizations to support particular project management features and that their use had a favorable, significant impact on the effective completion of projects. The study also found that while using PMS for project scheduling and task scheduling had a moderate impact on

effective project completion, doing so for planning and project cost control had a significant impact.

The study also found that the use of Document Management Systems (DMS), where centralized digital information management was used to support project management, management and distribution of project information, and to foster cooperation in the project delivery process, had a significant impact on successful project implementation. The study determined that the adoption of a document library had a significant impact on the effective completion of projects in the Kenyan banking sector since projects required a lot of documentation that required storage. According to this study, use of ICT which was a component of technology by organizations that contributed greatly to the success of implementation of projects, as well as their sustainability, and thus cannot be ignored.

A study was undertaken with the aim of understanding the role of technology in project life cycle and performance. Joshi (2021) in his study on the Impact of Technology in Project Management noted that use of software application could facilitate and speed up decision-making because they provided instant access to information, easy identification and rectification of errors and cut down on time spent on repetitive tasks. Further the study opined that project managers had access to a variety of cutting-edge technologies and tools, including Gantt, Microsoft Project, and Primavera, which could be utilized for planning, implementation, monitoring, control, and risk management as applicable.

According to the study, meetings with project teams and clients could be held via team meetings, teleconferencing, or videoconferencing. Additionally, information could be stored and shared using the cloud and shared devices. The study averred that sharing information between teams improved communication and generated more outstanding knowledge, which supported efforts to surprise and delight loyal clients. Further, the results showed that organizations were not employing technology to its full potential in

project execution and management, and the majority of projects were deemed to be either average or less successful.

Krell et al. (2020) undertook a study on Smallholder Farmers' use of Mobile Phone Services in Central Kenya, with an aim of examining factors the influencing Kenyan farmers' tendency to use mobile services for purchasing and selling goods, receiving notifications regarding agricultural or livestock activities, and getting information on agriculture and livestock. The study emphasized additional elements that influenced farmer use of agricultural information via mobile phones, such as membership in farmer organizations, greater levels of education, and smartphone ownership.

The study brought to light that mobile phones was a form of technology use that created an avenue for dissemination and access to information and when used effectively could impact on productivity. Implementers of climate change adaptation projects using simple technology such as mobile phones would have an avenue for quick and efficient dissemination of information and knowledge, which ultimately would result in enhancing the performance and sustainability of the projects.

In contemporary project management, the utilization of ICT was becoming increasingly critical for enhancing project performance. As noted by Eliwa et al. (2022), in their study on Information and Communication Technology (ICT) Utilization and Infrastructure Alignment in Construction Organizations, the alignment of ICT infrastructure with organizational goals was a significant factor influencing the efficiency and success of construction projects. The authors argued that ICT integration within construction organizations leads to improvements in communication, coordination, and real-time decision-making, thereby positively impacting project execution and outcomes.

The study highlighted that effective use of ICT tools, such as project management software, mobile applications, and data-sharing platforms, ensured better information

flow and enabled seamless collaboration among various stakeholders, including contractors, clients, and suppliers. This, in turn, reduced delays, enhanced resource allocation, and improved overall project management.

Sahamir et al. (2021) in their study on Barriers Impeding the Adoption of Information and Communication Technology (ICT) in Construction Project Management noted that the adoption of ICT in construction project management was widely recognized as a critical factor in improving project efficiency and performance. However, as the authors highlighted in their study, several barriers including organizational resistance to change, high costs of implementation and insufficient technical expertise impeded the widespread use of ICT within the construction industry.

Despite these barriers, the study underscored the positive effects of ICT on communication, coordination, and real-time decision-making. The adoption of ICT tools could lead to more accurate reporting, better tracking of project progress, and improved collaboration among diverse project stakeholders. The study emphasized that overcoming these barriers required an intentional approach, including enhancing ICT infrastructure and ensuring that all stakeholders were well-equipped to use the tools effectively.

Korunovska and Spiekermann (2021) in their study on The Effects of Information and Communication Technology Use on Human Energy and Fatigue: A Review, presented a critical perspective on the increasing reliance on ICT in organizational contexts, including project implementation. Their review highlighted that while ICT could enhance connectivity and streamline communication, its excessive use could lead to user fatigue, reduced cognitive energy, and a decline in overall productivity. These physiological and psychological impacts could in turn, negatively influence project

outcomes, especially in environments that demand sustained mental effort and continuous digital interaction.

This perspective contrasts with much of the literature that emphasizes the efficiency benefits of communication technologies, suggesting that their implementation must be carefully managed to avoid diminishing returns. Integrating their findings into the broader discourse on ICT in project environments underscores the importance of balancing technological tools with human factors, including workload management and digital well-being.

In order to develop a fundamental knowledge of how institutional characteristics impact implementation of climate change adaptation projects in Kenya, this study critically analyzed empirical literature on the subject. The literature examined a number of important institutional characteristics, such as leadership styles, project implementation structure and use of communication technology. Empirical research continuously showed how important these factors were in determining institutional efficacy and results. The study positioned itself to expand on verified frameworks while addressing highlighted inadequacies by combining insights from previous research.

### 2.3.2 Resource management

Implementation of projects would likely require resources including financial, human, material, and time, lack of which would hinder implementation of the projects. In addition, a project would likely not succeed, if resources were inadequate, or if the available resources were not utilized optimally for the intended purpose. Resource management therefore entails the elements of resource allocation, resource adequacy and resource optimization, which in essence affects the success rate of implementation of projects (Natt & Charles, 2024).

A study on Influence of Organizational Resources on Strategy Implementation in State Corporations in Kenya was undertaken by Muthiora and Moronge (2018), and the findings confirmed that in Kenya's state corporations, human resources were essential for implementing an organization's long-term plan and that the organization's management and that of its partners' were assured to be skilled and to provide overall leadership in implementing strategy thanks to the superior recruitment and staffing procedures. The study further established that financial resources had a statistically significant impact on how Kenyan corporations implemented their strategies.

A study found that resources at a firm's disposal had an impact on project performance, and as every construction firm wanted to complete a project successfully, performance was a crucial concern. The study concentrated on the required material, human, and technical resources to improve the performance of road projects. This study was carried out by Densford et al. (2018) on Effect of Project Resource Mobilization on Performance of Road Infrastructure Projects Constructed by Local Firms in Kenya.

According to the study, academics were interested in project performance since it was important to make sure that projects were completed on time, within budget, and with the desired quality. The findings indicated that, numerous road projects built by local businesses underperformed because of lack of funding. The results suggested that local businesses would probably have trouble finishing road projects in the allotted time and with the acceptable quality.

Ouma and Kamaara, (2018) undertook a study on Determinants of Successful Implementation of Donor Funded Projects in Kenya. The study found that NGOs had a very low percentage of project success, which had led to difficulties with financial waste, misappropriation of funding, and dissatisfaction among end users. The study came to the conclusion that implementation of such projects would be greatly enhanced by a

significant improvement in resource allocation indicators, including the financial resources availability, the level of knowledge of the project team, experience and skills possessed by human resource, project time lines, comprehensive and even distribution of resources, organizational procedures, knowledge on cost estimation methods, and incorporating donors and stakeholders in resource allocation.

A study was carried out to establish the impact of resources and capabilities on organizational performance (Sathvara, 2023). According to the study, a company's performance and success are determined by its resources and competencies. The study established that a company needed capabilities rather than just money to stand out. The study also showed that firms had a competitive advantage thanks to their resources and competencies, which helped them differentiate themselves from rivals and create a monopoly. A firm can create enduring advantages in this way.

Ojwang et al. (2017) undertook a study to assess the coastal governance for climate change adaptation in Kenya. The Kenyan coastal governance for climate adaptation was evaluated using the capitals approach framework (CAF), and the study's goal was to show how beneficial this approach was for tracking how well three local governments in Kenya (Kilifi, Kwale and Mombasa) were coping with climate change by utilizing a score system to show governance performance. The CAF consisted of five “capitals” including financial, social, political, human and environmental.

The study found deficiencies in human capability, funding for adaptation, and access to information on climate change. The study also demonstrated that having well-developed institutions, such as regulatory frameworks at the national level, could promote adaptation at the county level but did not necessarily guarantee it. The study further indicated that Ad hoc and fragmented responses to climate change were frequently used and county departments lacked strategic, integrated planning.

A study found that strategic management, predicted by communication, resource allocation and targets, significantly affected the performance of deposit taking savings and credit cooperative societies in Nyeri, Kenya. This study was conducted by Wachira, (2024) on Resource Allocation, Targets and Communication are Strategic Management Practices for Organizational Performance: Evidence from Kenya. The study recommended increasing of allocations, especially marketing and training in order to boost performance. Dynamic adjustment was recommended, through re-allocation of resources from less critical areas, to marketing and training. The findings and recommendations of this study indicate that resource allocation and adequacy of resources affect the performance of an organization. Optimization of resources through re-allocation to more critical areas was recommended in this study.

A study on Integrated Planning and Resource Allocation as Project Management Skills on Sustainability of Road Projects by Chepng'eno and Kimutai (2021) sought to evaluate the influence on road projects sustainability in Kericho, Kenya. According to the study, the roads had been completed satisfactorily and to the specified standards due to careful preparation in terms of finances, inventory, and supplies, and the road users had been pleased. That had been contributed by the proper management of road resources transparently and with accountability which also minimized mismanagement and corruption. The study also showed that cost minimization for construction projects had been effectively aided by budgetary projections, along with time scheduling and planning process management, which helped prevent time and resource waste during the construction process.

While traditional project management emphasizes the importance of resource allocation for successful outcomes, emerging research questions the sufficiency of this approach. Allu et al. (2024) in their study on A Critical Review of Resource Allocation

Optimization in Project Management, offered a critical review within the context of Engineering, Procurement, and Construction (EPC) projects, highlighting that the mere allocation of resources did not necessarily lead to improved operational efficiency. Their results showed that when they were not combined with efficient planning, scheduling, and data- driven decision-making, resources were frequently underutilized, which compromised project performance. The authors contend that by improving responsiveness, openness, and collaboration across the project lifecycle, the deployment of integrated IT systems can lessen these problems.

A study on Resource Adequacy and Utilization for Teaching and Learning Effectiveness in Vocational Education Programmes in South-South Nigerian Universities was undertaken by Edokpolor and Dumbiri., (2019) and the findings of the study showed a lack of physical facilities and seldom use of educational materials for TVET course instruction and learning. The research concluded that the unsatisfactory teaching and learning process in TVET programs may have been caused by inadequate physical facilities and seldom usage of instructional materials. This circumstance may have been the cause of TVET students' low self-efficacy in pursuing entrepreneurial careers and lifelong learning activities. The study further concluded that there was a disparity between TVET lecturers and students in regard to the degree of physical facilities adequacy and instructional resource usage for teaching and learning efficacy in TVET programs.

Lavu and Maina, (2019) undertook a study on Organizational Resources and Strategy Implementation in Non-Profit Organizations, with the aim of investigating how three resources from among human resource, technology, financial, donor relation and stakeholder community influenced the implementation of the Strategic Plan, at the Kenya Medical Research Institute (KEMRI). The study concluded that the true assets of

a business were its employees since they regularly contributed to its effective operation and made an effort to deliver their finest job within the allotted time frame and also strived to accomplish the established goals.

Further, the study concluded that the effective use of financial resources allowed managers to assemble teams that were more productive and efficient at work, as well as to evaluate their schedules and accurately estimate resource availability in real time. Financial resources enabled the business to create and track coordinated clear and quantifiable strategic financial targets, allowing the organization to operate successfully and efficiently during the plan implementation phase.

A study on Challenges Facing Donor Funded Projects in Kenya was undertaken by Kiprop, (2017), with a view to determining how donor-funded projects in Kenya were affected by project planning framework and project institutional capabilities. The analysis found that even though most project planning procedures had been put into place for a considerable period of time, United States Agency for International Development (USAID) had difficulty implementing several specific project elements. According to the study, planning in the donor sector was impacted by conflicts of interest, which eventually called for prompt resolution. The study also showed that uniform project methods were widely used, which increased the number of orders, the number of projects finished on time, and reduced the number of complaints. The study discovered that project institutional capacity at USAID greatly enhanced productivity.

Koyi et al. (2021) undertook a study on the Influence of Resource Management on Timely Completion of Road Projects Implemented by the County Government of Kakamega, Kenya, which sought to establish the effect of planning and scheduling on timely completion of roads projects. The study concluded that resource planning was important because it enabled businesses to efficiently complete job requirements.

Project managers needed to be sure they always had attained person-job fit, and planning facilitated this by assigning people work based on a variety of particular characteristics such their ability, skills, and position. The study further concluded that successful resource scheduling made it possible to find various solutions to resource availability and work effectiveness issues. An essential component of any project scheduling management was the effective utilization of resources for timely completion of projects within the given budget.

Whereas the adequacy of resources is often emphasized in project management literature, emerging perspectives from Lean methodologies caution against the overabundance or misalignment of resources. According to LeanPM® (2020), over-processing and overcomplicating represent critical forms of project waste that can undermine efficiency and project success. These forms of waste manifest through excessive planning, unnecessary features, and complicated processes that fail to add value yet consume significant time and resources. This perspective challenges the notion that adequate resources lead to better outcomes, highlighting instead the importance of value-driven planning and streamlined execution.

Cantarelli et al. (2010), highlight the phenomenon of "lock-in" in large-scale infrastructure projects, where decision-makers become overly committed to initial strategies, even when those strategies prove inefficient or outdated. This premature commitment can result in continued allocation of resources to suboptimal solutions, thereby exacerbating cost overruns and reducing overall project performance. Their findings challenge the conventional assumption that resource availability ensures success, showing instead that strategic inflexibility and institutional inertia can render even well-resourced projects inefficient. This emphasizes the importance of adaptive planning and critical evaluation mechanisms throughout the project lifecycle.

According to the study, planning, scheduling and optimization impacted the county's ability to complete road improvements on time. It is important to note that resource planning and scheduling is an element of resource optimization, and thus the study highlights that they have an impact on the success of project implementation.

A study carried out opined that the efficient use of human resources to avoid resource conflicts between projects and increase resource utilization efficiency was essential for successful implementation of projects due to the scarcity and worth of resources. This study was undertaken by Liang et al. (2021) on Optimization of Enterprise Labor Resource Allocation based on Quality Optimization Model. The study proposed that the optimal allocation of labor resources for project-oriented enterprises should strengthen the overall labor resource functions of the enterprise. Job-person fit and prompt altering of jobs as necessary, matching staff skills level to the required skills level for various jobs was deemed crucial by the study. According to the study, the main objective of labor resource planning was to forecast the supply and demand of labor resources for organizations in order to achieve a balance between supply and demand of quality and sufficient labor resources.

Critical insights into how resource allocation, resource adequacy and resource optimization affect organizational performance and sustainability was gained from the empirical literature on resource management. The evaluated literature emphasized important aspects including allocation and adequacy of necessary resources required, and importance of resource adequacy and resource optimization tools for effective implementation among others. Effective resource management, especially due to the fact that resources are generally constrained and scarce, improved organizational efficiency, service delivery, and successful implementation of projects, according to the literature.

The study adopts pertinent frameworks, and finds factors that are essential to understanding resource management in implementation of climate change adaptation projects in Kenya by interacting with the empirical evidence. As a result, the literature influenced the study's choice of resource management as a strategy implementation construct for the conceptual framework, and analytical basis in addition to contextualizing the research subject.

### 2.3.3 Stakeholder participation

Stakeholders include both individuals who can influence how resources are used and those whose lives are affected by changing resource use but who lack the authority to influence its use (Mkonda, 2022). If the climate change adaptation projects are to succeed, then involvement of stakeholders in the implementation of the projects cannot be ignored. In climate change adaptation projects implementation, the inclusion of beneficiary stakeholders in decision making and implementation is vital since they have indigenous knowledge on adaptation and resilience strategies that they employ for their survival (Petzold et al., 2020). This knowledge if incorporated in the expert knowledge would enhance the performance and sustainability of these projects.

Most of the local beneficiary communities' especially in developing countries have entrenched cultural practices likely to directly affect the implementation of such projects, and this ultimately impacts on the performance and sustainability of those projects (Marimo et al., 2021). Further, it is likely that the local communities and beneficiaries may not be well informed or knowledgeable on the foreign or new practices being introduced to them by some of the projects and this brings in the need for building their capacity. This can be done through training, to empower them with new attitudes, knowledge and skills necessary for enhancing the performance of the projects, and for

ensuring that the projects continue long after the implementers hand over the projects to the communities.

Ndirangu and Shisia (2016) in a study on an Assessment of the Effect of Stakeholders' Participation on Food Security Strategy Implementation in Kenya, wanted to ascertain how much the stakeholders' involvement impacted Kenya's food security strategy execution. The study noted that ineffectiveness of stakeholders' participation contributed to food insecurity. In addition, there were indigenous resources found in the beneficiary communities and if brought on board could enrich the foreign/ exotic resources found with the donors and implementers.

Bringing on board all the stakeholders was expected to result in harmonious implementation of the climate adaptation projects and the study recommended that stakeholders needed to be encouraged and welcomed to take part in the implementation of the food security strategy because they had additional resources that were essential for a successful implementation. In line with the findings of this study, it is noted that stakeholder participation has a great impact on the performance of implementation of interventions, strategies and projects. This is an indication that the performance of climate change adaptation projects implementation can be affected by stakeholder participation or non-participation.

A study on Stakeholders' Engagement in the process of Adapting to Climate Change Impacts, Central Tanzania, was undertaken by Mkonda (2022), in order to identify issues of inadequate policies that allowed climate practitioners and other significant stakeholders to carry out agricultural activities in the region under study, primarily characterized by increased droughts as a result exposure to severe stress brought on by climate impacts.

The study findings showed that some decisions were made prior to the involvement of stakeholders by authorities or scientists. More so, most decision-making was dominated by the government, which had an impact on how accurately stakeholders decided on various issues. The study noted that the process of adjusting to the effects of climate change included all deliberations and decisions regarding the best course of action indicated by among others, the farmers' awareness, knowledge, and aptitude for adopting agricultural practices including conservation agriculture, early crop planting, and the development of new agricultural methods that would lessen their susceptibility to climatic impacts.

A study on Remediation in Developing Countries: A Review of Previously Implemented Projects and Analysis of Stakeholder Participation Efforts by O'Brien et al. (2021), was carried out with the objective of comprehending the opportunities and challenges faced by environmental restoration initiatives carried out within the social, economic, and political context of emerging communities. In most cases, the projects under investigation ignored stakeholders, whereas projects involving stakeholder participation experienced delays, financial resource waste and project abandonment because skilled facilitators were lacking. They involved stakeholders in project activities while already in advanced levels, or neglected stakeholder participation in the entire period of project implementation.

The projects which pursued stakeholder participation more successfully reported improved stakeholder communication, recognition of common objectives and resources, and identification of extra information relating to project activities. The study further noted that local stakeholders had knowledge of the local environmental conditions, but this knowledge could not be effectively used to support remedial actions without good

coordination and facilitation of these groups. Additionally, a lack of coordination made it more difficult to determine who was responsible.

Artur (2016) undertook research on Stakeholder Power Impact on Project Implementation, which sought to understand the influence of stakeholders on project implementation. The study noted that it was crucial to manage stakeholders actively during project implementation, but many project managers neglected this crucial step owing to lack of time, a tight deadline, or their lack of important knowledge and skills on project management. This could have detrimental effects on the entire project, from delaying the implementation period to increased expenses as well as the potential for project termination.

A review of peer-reviewed studies was carried out by Khatibi et al. (2021), to establish whether public awareness, knowledge and engagement improved climate change adaptation policies. According to the findings, it was essential to communicate about climate change in order to enhance understanding and awareness, which would then promote involvement with climate policy, which might lead to better outcomes and policies. The majority of studies revealed a substantial correlation between active involvement and awareness and understanding of climate hazards, as well as the possibility that participation could alter attitudes in addition to having a constructive influence on behavior.

The study found that communities were essential to all phases of the policy cycle and that public participation was essential to increase knowledge, awareness, and the capacity for behavioral change during the formulation of policies and decision-making. Lack of motivation and opposition to power redistribution were two major obstacles to public participation that were emphasized.

Despite the positive associations often made between stakeholder inclusivity and project performance, some empirical studies point to the contrary, Amfopo (2025), in a case study at a public university in Ghana, identified several recurring causes of construction project failure, many of which relate to weak stakeholder leadership, administrative lapses, and ineffective resource coordination. The study emphasized how leadership and administrative inefficiencies, often shaped by stakeholder misalignment and poor oversight, contribute to stalled or failed projects. Moreover, the resulting consequences, including financial loss, reputational damage, and disruption to academic infrastructure, further illustrate how unmanaged stakeholder dynamics can impede project outcomes.

Boateng, and Danquah (2025) investigated the impact of stakeholder participation on construction project delays within the context of the China Geo-Engineering Construction Company. Their findings revealed that while stakeholders such as clients, architects, and consultants played critical roles, their involvement often introduced issues such as design changes, delayed payments, and increased arbitration, and these factors significantly contributed to project delays. This study illustrates that when stakeholder roles are not clearly defined or efficiently managed, their participation can become a source of risk rather than a solution.

Zimmermann et al. (2012) undertook a study on Stakeholder Participation and Capacity Development during the Implementation of Rainwater Harvesting Pilot Plants in Central Namibia, which sought to emphasize the lessons discovered during the preparation and installation of four rainwater harvesting pilot plants in the Epyeshona, central northern Namibia. Participation of stakeholders and strategies to build their capacity were used in all aspects of the study project, including decision-making, planning, construction, operation, maintenance, and monitoring procedures.

In all facets of the study project, stakeholders were involved and strategies to enhance capacity were also implemented. To achieve this, it was paramount to comprehend the community's physical and social living situations, including its water usage habits and attitudes, needs, and preferences with relation to the suggested technique. Capacity building was carried out through technical training of selected members to equip them with knowledge on the technique, which enabled them to participate in the implementation activities in addition to making informed decisions. The selected group trained was expected to share the knowledge with the rest of the community members.

A study carried out established that utilization of stakeholders' capacity building for community mobilization strategy was moderate. This was done in project planning and development by building collaborative skills, educating community members about the need to reduce conflict during project implementation by developing conflict resolution skills, and encouraging community members to actively participate in project development by training stakeholders in participatory activities. This study was carried out by Okide (2020) on Capacity Building for Stakeholders: A Community Mobilization Strategy for Implementation of Community Development Projects in South-East Nigeria, with the aim of determining the extent to which community mobilization strategies, such as strengthening stakeholder capacity, were used in the South East Estates of Nigeria to undertake community development initiatives.

The study further established that the various training programs the stakeholders were taken through exposed them to capacity building that equipped them with a variety of skills, and that gave them the chance to implement community development projects successfully as well as increased the credibility of such projects.

A Study on the Effects of Stakeholder Education and Capacity Building in Marine Protected Areas, Southern Mozambique by Lucrezi et al. (2019), investigated the results

of an initiative that involved many stakeholder groups in a cooperative process of information acquisition, fieldwork, and educational experiences in a Marine Protected Area (MPA) in southern Mozambique. A variety of objectives from various action projects in the management plan of the Ponta do Ouro Partial Marine Reserve (PPMR) were addressed by the initiative, which led to the construction of an integrated education and capacity building program.

The education and capacity building activities resulted in enrichment of the PPMR's pre-established concepts of sustainability, community, and livelihood, together with a change in perspective from one that was "people-centric" to one that was "eco-centric". In addition, the training and capacity building efforts led to the alignment of stakeholders' perspectives with the PPMR management agendas, supported by constructive attitude adjustments.

Capacity building is argued to be a vital component in enhancing project performance and long-term sustainability, particularly in community-based initiatives. Mwanzia et al. (2022) examined the relationship between capacity building initiatives and the sustainability of public borehole water projects in Kitui County, Kenya. Their findings suggested that training, knowledge transfer, and stakeholder empowerment significantly contributed to project effectiveness and longevity. This study highlights that when local communities are equipped with relevant skills and understanding, they are more capable of managing and maintaining development projects, reducing dependency on external actors and ensuring sustainable outcomes.

Beyond improving implementation, capacity building also plays a pivotal role in ensuring the successful transition and sustainability of projects after external support ends. Kalisa and Gathiru (2023) investigated the influence of capacity building on the successful handover of development projects to beneficiaries in Rwanda. Their study

found that empowering local stakeholders through targeted training and knowledge transfer significantly enhanced beneficiaries' ability to take ownership of projects, manage resources effectively, and ensure continuity. These findings reinforce the argument that capacity building is not merely an auxiliary function but a strategic component that directly contributes to the long-term success and institutionalization of development initiatives.

The relationship between capacity building and organizational performance has also been explored within the framework of local government institutions. Kaheeru et al. (2024), in their study conducted in Kasese District, Uganda, examined the impact of capacity building on the performance of local government structures. The study found that while capacity building initiatives were implemented across several administrative units, their effectiveness in improving organizational performance was inconsistent. This was largely attributed to gaps in implementation, limited follow-up mechanisms, and insufficient alignment between training content and actual job requirements. These findings suggest that while capacity building can be a powerful tool for enhancing project and institutional performance, its success depends heavily on how well it is contextualized and integrated into broader organizational systems and strategies.

While capacity building is often advocated as a strategic tool to enhance project and organizational performance, its impact is not always guaranteed. Morkel and Ramasobana, (2017) conducted a review of Evaluation Capacity Building (ECB) initiatives across various African contexts and highlighted several challenges that limited their effectiveness. Their findings revealed that many ECB programs emphasized individual training without adequate investment in organizational systems or enabling environments. As a result, the anticipated improvements in evaluation practices and project performance were often minimal or unsustainable. The study underscored that for

capacity building to be effective, it must go beyond technical skill development and be embedded within supportive institutional structures, leadership commitment, and a culture of learning. This insight is crucial in understanding the mixed results of capacity building efforts in development contexts.

Atela et al. (2018) carried out a study on Climate Change Adaptation among female-led Micro, Small and Medium Enterprises (MSME) in Semi-Arid Areas (SALs), Kenya, with an aim of exploring how they responded to climate risk. The study involved review of academic and policy literature on female enterprises in SALs. According to the study, female-led MSMEs in Narok were particularly vulnerable to climate risk, and participants connected frequent losses to their companies' assets and slowed business growth to climate impacts like drought, flooding, and disasters related to climate change. Female-led MSMEs were concentrated in agricultural industries, particularly vulnerable to climate change, and this increased exposure.

MSMEs in non-agricultural industries could also be negatively impacted by climate extremes through conflict, supply chain disruption, and depressed local markets. The study further established that socially institutionalized gender roles restricted female entrepreneurs' access to land, capital, markets, new technology and educational opportunities. Furthermore, they frequently restricted them to smaller, informal businesses, further excluding them from the structure of larger companies.

Evans (2022) provided an analysis of the cultural dynamics that influence youth participation in community development projects in Turkana County, Kenya. The study highlighted that traditional norms, including age-based hierarchies, gender roles, and cultural perceptions of authority, served as significant barriers to youth engagement in decision-making processes. Specifically, the research demonstrated that elders often dominated community structures, while youth, especially young women, were

marginalized due to culturally reinforced perceptions of inexperience or limited authority. These findings affirm the broader argument that community culture is not merely a background variable, but an active determinant of stakeholder participation. Incorporating local cultural frameworks and promoting inclusive dialogue can, therefore, enhance the legitimacy, effectiveness, and sustainability of community initiatives.

The influence of community culture on project performance has become increasingly significant, particularly in multicultural and community-driven contexts. Battistella et al. (2023) undertook a study on the Impact of Cultural Dimensions on Project Management Performance with an aim of establishing the effect of people's behavior, brought about by diverse culture, on outcomes of project management. Their study reveals that cultural orientations such as individualism vs collectivism influence how team members communicate, make decisions, and collaborate. In collectivist cultures, for instance, consensus and group harmony often take precedence, affecting project timelines and decision-making processes, whereas in individualistic settings, autonomy and assertiveness may drive faster execution but risk reduced cohesion.

The study emphasizes that understanding and adapting to local cultural norms is essential for successful project implementation, especially in settings where community involvement is a core component. These findings are especially relevant for development and climate adaptation projects in rural or traditional communities, where alignment with local values and practices can significantly influence stakeholder engagement and long-term sustainability. Integrating cultural sensitivity into project design and leadership thus becomes a key strategy for improving project performance.

The critical role of culture in shaping stakeholder engagement processes, particularly in the context of open innovation was examined by Osobajo et al. (2025), on The Role of Culture in Stakeholder Engagement: Its Implication for Open Innovation. According to

the study, stakeholders' interactions, communication, and decision-making were significantly impacted by cultural factors such power distance, collectivism versus individualism, and uncertainty avoidance. The authors discovered that, for instance, stakeholder participation is typically more hierarchical and restricted to elite actors in high power-distance cultures, whereas more egalitarian cultures promote shared decision-making and wider inclusion. This work was especially pertinent to community-based projects with a high degree of cultural variety and stakeholder diversity.

A study by Charlesraj and Khan (2018) on the Effect of Cultural Diversity on Project Performance, explored the effect of cultural diversity on project outcomes, particularly within construction and infrastructure projects. The results showed that, although cultural variety may cause communication problems, miscommunication, and conflict, it may also have positive effects including creativity, more comprehensive approaches to problem-solving, and innovation—especially when handled well. The study underlined how crucial cultural competency is to team dynamics and project leadership. Collaboration, stakeholder engagement, and adaptability to complex contexts were all increased in projects that used inclusive approaches and fostered cross-cultural understanding.

Organizational and community cultures play a critical role in shaping project outcomes. Luong and Watanabe (2017), investigated the influence of project organizational culture on the performance of construction projects. The study found that specific cultural attributes, including goal orientation, contractor commitment, cooperative behavior, and worker orientation, significantly enhanced project performance across multiple dimensions such as time, cost, quality, and stakeholder satisfaction. Their findings emphasized that a well-aligned project culture fosters stronger collaboration, clearer

communication, and more effective problem-solving, all of which contributed positively to performance.

The empirical research on stakeholder participation emphasizes how it's important for improving institutional processes' overall efficacy as well as their transparency, accountability, and inclusivity. Research continuously demonstrates that the active participation of stakeholders, including the community beneficiaries, improves decision-making, participation in the implementation of projects, and creating a sense of ownership to the processes, activities and embracing the projects. the literature also shows the effect of inclusivity of beneficiaries in decision making, capacity building and community culture in implementation of projects.

In order to determine important variables and participation models pertinent to its setting, this study made use of empirical data. Stakeholder participation was examined as a key element of strategy implementation and the effect it had in the implementation of climate change adaptation projects in Kenya. The literature identified the research gap and influenced the choice of stakeholder participation as a strategy implementation construct for the conceptual framework.

### 2.3.4 Regulatory framework

Regulatory framework in the context of project implementation likely played an important role in setting the standards and remedies for compliances. Several literature discussions have been explored to explain the role, functions and importance of government policies, community agreements and donor intents that form a basis of regulatory framework.

An investigation on the influence of regulatory frameworks on strategy implementation within government commissions in Kenya, using the National Land Commission as a case study was carried out by Odawa and Litunya (2022). According to their research,

institutional frameworks had a favorable but not statistically significant impact on strategy implementation, whereas policy and contextual frameworks both had statistically significant effects. These results demonstrated how crucial a supportive regulatory environment is to enabling successful strategy implementation. The authors came to the conclusion that public institutions need to strengthen professionalism, inclusion, and alignment with organizational policies in order to better strategic execution. The relevance of regulatory frameworks as an enabling factor in strategy execution, especially in complex government settings, is empirically supported by this study.

A study by Amuyunzu and Kisimbii (2021), on the Influence of Selected Government Regulations on Implementation of Public Infrastructure Projects by the Rural Electrification and Renewable Energy Corporation (REREC), in Nairobi county, Kenya, aimed at filling a gap in literature by analyzing how government regulations affected the execution of public infrastructure projects at the REREC. The study examined the effect of environmental regulations, construction standards regulations, financial management regulations, county government licensing and competence of project team, on implementation of public infrastructure projects.

The findings showed that financial restrictions, building standards and codes, and the project team's expertise had a substantial impact on the implementation of public infrastructure projects, whereas environmental regulations and county government licensing had a detrimental impact. This study highlights the complexity of acquiring licenses required for implementation of government projects at the county level, and this has a negative impact on implementation of the projects.

A study on Mainstreaming Climate Change into the Environment Impact Assessment (EIA) Procedures, China Perspective was carried out by Gao, (2016), sought to

determine how to modify the nation's EIA practices to take climate change into account and what obstacles there could be to doing so. The study opined that EIA techniques could be used to address climate change at lower scales. However, significant obstacles and hurdles made it difficult to do so, raising severe concerns about its implementation's viability and effectiveness in the nation, where separate programs to combat climate change were launched.

The study highlighted that the long-term fulfillment of mitigation and adaptation goals could not be guaranteed without integrating climate change discourse into EIA procedures. This is an indication that government policies have an impact on the performance and sustainability of climate change adaptation projects, thus cannot be ignored.

Renner (2020) carried out a study on New Power Structures and Shifted Governance Agendas Disrupting Climate Change Adaptation Developments in Kenya and Uganda, with an aim to establish how institutional frameworks affected the utilization of natural resources and climate governance. According to the report, the region became more susceptible to the consequences of climate change as a result of the national economic goals, which increased the need for climate finance. According to EIAs, chemical treatment of flowers, extensive sand and mineral mining, and damming of incoming rivers all had a detrimental effect on the ecosystem. Furthermore, planting exotic plants that might be exported or growing rice on agricultural land had a detrimental effect on the ecosystem, deteriorated the shorelines of the lakes, and so harmed the fish species' breeding grounds.

The findings of this study shows that the devolved governance caused a problem on implementing climate change policies effectively. This brings to light the fact that

regulatory frameworks in place can have an impact on implementation of climate change adaptation projects.

Pedo (2018) undertook a study on the Effect of Regulatory Framework on the Performance of Public Private Partnerships (PPP) Road Projects in Kenya. The study sought to address how regulatory frameworks could improve the performance of road projects to create genuine efficiency advantages that would ultimately help the partnership flourish. The study found that Kenya's regulatory environment significantly and favorably impacted the success of PPPs in road construction. Additionally, the relationship between Kenya's regulatory framework and PPP project success was moderated by government policy.

According to the findings, the PPP regulatory framework was excessively strict, especially when it came to the steps that needed to be taken in order to bid, negotiate, and select a preferred bidder. The report suggested that the legal framework be changed to give contracting authorities more flexible PPP procurement frameworks that encourage innovation and have fewer strict regulations. The report also suggested adding contractual standards to the PPP governance plan.

An empirical study by Masoetsa et al. (2025) sought to determine and assess the main constraining variables influencing project performance in the construction sector. According to the authors' analysis of data gathered from experts in the South African construction industry, the biggest obstacles to project success were inadequate planning, poor communication, financial problems, and regulatory delays. In order to lessen these limitations, the study emphasized the necessity of proactive risk management techniques and stakeholder cooperation. Their research advances our knowledge of how operational and structural inefficiencies can reduce project outcomes, especially in underdeveloped nations where bureaucratic bottlenecks and resource limitations are more severe.

Al-Otaibi et al. (2025) investigated the enduring obstacles that hinder the performance of sustainable building projects in poor nations, with a particular emphasis on Ghanaian and Saudi Arabian comparative contexts. The study identified several problems, including a lack of technical expertise, inadequate stakeholder participation, loose enforcement of rules, and societal resistance to sustainable practices. The authors argue that even while sustainable concepts are becoming more widely accepted, their application is still constrained by institutional inefficiencies and capacity constraints.

Flyen, et al. (2018) undertook a study on Municipal Collaborative Planning Boosting Climate Resilience in the Built Environment, which aimed at investigating how climate-adaptive modifications had been incorporated into Norwegian legal frameworks for planning and construction tools. The study established that there was no interception of governmental follow-up to protect the integrity of the Planning and Building Act. Lack of collaboration in the creation of local planning, intra-municipal cooperation and cooperation between surrounding municipalities hindered incorporating relevant climate-related concerns into local planning. According to the study, because the full effects of climate change were not yet recognized, there was uncertainty over how to react. Lack of political anchoring led to uncertainty over how to respond and if doing so would be strategically sound.

Hirpha et al. (2021) undertook a study on Assessing the Integration of Climate Change Adaptation and Mitigation into National Development Planning of Ethiopia, with an aim of establishing the integration of climate change adaptation into country's national development plans and strategies. The study found that although most of the nation's national development plans acknowledged the significance of environmental conservation, the topic of climate change and its effects did not receive enough attention.

The absence of precise language on available options for coping with climate change was a defining feature of all national development plans.

A scrutiny of the Environmental Policy and Strategy revealed that it lacked clear instructions on how to carry out the policy. The investigation also revealed a gap in the integration of the relevant entities, and that the country's constitution did not adequately address adaptation to climate change. The study also found that rural communities were not aware of Climate Resilience and Green Economy Strategy (CRGE), hence there was a need to make them aware.

Rodgers (2021) undertook a study on Community Engagement in Pastoralist Areas: Lessons from the Public Dialogue Process for a new Refugee Settlement in Turkana Kenya, with the aim of establishing the level of inclusivity of particularly local pastoralists in the dialogue process, and a representation of their interests in the process of building a new refugee settlement. The study noted that the United Nations High Commissioner for Refugees (UNHCR's) efforts at community participation over the Kalobeyei Settlement were noteworthy and demonstrated an increased understanding of Turkana people's rights in comparison to the acquisition of land for the Kakuma camp in the early 1990s.

The UNHCR and Turkana County Government (TCG) responded to the concerns of a variety of people from different socioeconomic backgrounds with a strategy that directed humanitarian funds toward both refugee protection and local development. But despite efforts to promote an inclusive process, the study found that a number of issues and misunderstandings eventually led to the marginalization of pastoralist views. The study advised that the varied effects on various population groups should be considered in negotiations regarding changes in land use.

Mullins and Wambayi (2017) undertook a study on Testing Community Consent, Tullow Oil Project in Turkana, Kenya, which evaluated Tullow Oil's adherence to the Free, Prior and Informed Consent (FPIC) principle. The results showed that Tullow's community engagement approach had advanced since 2015 in significant areas and still was. However, in the nearby communities of Nakukulas and Lokicheda, Tullow Oil and Africa Oil had not yet fulfilled their (Free, Prior and Informed Consent (FPIC) expected duties.

The study found that respondents' perceptions of what was actually agreed upon in 2016 were quite divergent due to the community members' severe lack of access to the records of the consultations, negotiations, and agreements, despite being a crucial requirement of International Finance Corporation (IFC) Performance Standard 7 and a cornerstone of the FPIC principle. The research also showed that many residents didn't know of the contracts existence or what they contained, and people had different interpretations of what had been agreed upon with Tullow Oil. Women in the smaller pastoralist villages reported that traditional practices made it difficult for them to learn about, participate in, or influence consultations and this created a gap on the stipulation of the Standards.

A study by De Barbieri (2024) on Community Benefits Agreements (CBAs), Environmental Justice Encyclopedia, explains that CBAs are agreements made between developers and community coalitions that guarantee development projects give the impacted communities real advantages including improved infrastructure, job opportunities, and environmental protection. CBAs help to reduce the negative effects of development and advance equitable outcomes by formalizing community input and expectations. In addition to empowering communities, this participatory method promotes accountability and openness in project execution.

In the context of climate change adaptation, especially within vulnerable regions like Kenya's arid and semi-arid lands (ASALs), integrating CBAs can ensure that adaptation initiatives are culturally sensitive, environmentally sustainable, and socially inclusive. Such agreements can bridge the gap between developers and local populations, facilitating projects that are both effective and equitable.

Flootman (2022) in his research report on A Framework for Implementing Community Benefits Agreements underscored the importance of governments carefully evaluating the financial impacts of CBAs on project implementation. Specifically, the paper noted that CBAs could lead to increased internal costs through expanded project management responsibilities and oversight requirements. Additionally, CBAs could impose external financial burdens on private sector actors who were expected to meet negotiated community obligations such as local hiring quotas, infrastructure investments, or environmental safeguards.

According to the report, these cumulative demands could lead to overall project cost escalations, potentially affecting the scalability and timelines of development efforts. In climate change adaptation projects especially in resource-constrained settings, this financial dimension is critical. Whereas CBAs could enhance legitimacy and sustainability, it was essential to balance social benefits with economic feasibility to ensure successful and timely implementation of projects.

Keenan et al. (2014) undertook a study on Company-Community Agreements, Gender and Development. The results showed that the local culture gender dynamics, the dominant society dynamics, and the cultures of the organizations involved, including community culture, all contributed to women's engagement in agreement procedures. Although there were few exceptions, the study established that women's overall participation in agreement procedures during negotiation and implementation was

defined as being lower where the local culture had a more patriarchal gender dynamic. Where local culture and gender roles for men and women were clearly defined and separate, women tended to be left out of the agreement-making procedures and outcomes. The study further noted that despite the superior role played by men in CBAs, women's participation in the agreements did have some positive effects, including the growth of institutional capacity in some communities.

A study was undertaken by Janssen-Jansen & van der Veen (2017), whose aim was to gain insight into contractual governance's ability to accommodate direct end-user involvement in urban development and to show how it could make development processes more inclusive. The findings raised the need for having local communities' interests represented since it was lacking, because planning negotiations frequently involved private parties who owned or developed property, planning authorities, and NGOs/special interest groups that managed to find their way into the process.

The study added that because CBAs involve locals in decision-making, they may be a useful instrument to promote greater community involvement in Urban Development Projects (UDPs) since it included local people in decision making. According to the study, company-community agreements governed how some negative effects were handled and how mining-derived benefits would be distributed. Gender had an impact on how men and women accessed, dealt with, and experienced both the good and bad changes brought about by mining growth.

A study on Community Benefit Agreements and Funds Summary of key Literature and Case Studies was carried out by Rose and Haggerty (2019), which examined the workings and results of CBAs and CBFs in the context of significant industrial projects, such as mines, situated in rural areas. The literature reviewed demonstrated the value of having a clear vision or community's "wish list" while implementing projects, as this

allowed the communities to take ownership of the projects. Rural communities were urged to carefully consider the project's area of influence and to include any marginalized groups impacted by the development, through employment and inclusion in the process of CBA. Additional research argued that third parties, such as community NGOs, should be included in the creation and implementation of CBAs.

Literature was reviewed by Guillaumont et al. (2023) on the Evolution of Aid Conditionality: A Review of the Literature of the Last Twenty Years with an aim of establishing aid conditionality evolution, and the effectiveness of the conditionalities. Their findings revealed that conditionalities had shifted over the years to include macroeconomic, political and climate conditionalities, in additional to the traditional conditions on how money is to be spent, management of interventions, and reporting of results. One of the observations in the findings showed that conditionality now often included political aspects, and these were increasingly tied to donors' expectations regarding social rights, environmental protection, and the broader promotion of global public goods.

Helge (2018) in an article on Disappointed Donors Can't Count on Getting their Charitable Money Back, discussed cases where donors who were not happy about the use of their donations by the recipients sought court interventions to reclaim their donations back. University of Chicago had been sued by its donor of US$100 million, University of Nevada had $14 million rescinded by the donor, while George Mason University had unrest at the campus, arising from secret arrangements formerly made with the Charles Koch Foundation. All these controversies stemmed from clauses of donors intent attached to the donations that were not honored.

IASC (2016) undertook an assessment of donor intent in their paper on Donor Conditions and their Implications for Humanitarian Response, in an effort to improve

donor-recipient relations. The study identified several constraints, including: rigid payment schedules divided into multiple tranches; delayed payments; the obligation to return unused funds; brief eligibility periods for spending; and limited flexibility to negotiate no-cost extensions or fund reallocations to adjust to evolving humanitarian needs and operational conditions. The paper also identified the challenge of risk management approaches including counter-terrorism measures, due diligence and auditing requirements measures. These conditionalities can lead to considerable delays in implementation, often focusing more on financial accountability than on program quality. According to the study, disclosure requirements also pose a challenge for recipient organizations, since certain transparency requirements can, in the end, hinder the effectiveness of humanitarian operations.

A case in court against Princeton University by the heirs of Charles and Marie Robertson over claims that the University did not use the $35 million (blossomed into $900 million over time) for the purpose intended by the donors. The case ended with the University retaining most of the funds whilst transferring part of the funds to a new foundation of the Robertson's heirs (Cain, 2014).

Research was carried out by Schmitz (2006), on Conditionality in Development Aid Policy, with the aim of scrutinizing the effectiveness of traditional forms of donor conditionalities. According to the study, traditional forms of conditionality in development assistance often focused on strict, incentive-based compliance resulting in limited effectiveness in fostering sustainable development outcomes. The study critiques these traditional models and emphasizes the shift toward a partnership-based approach, where conditionality is no longer about imposing reforms, but about facilitating ownership and mutual accountability between donors and recipients. According to the study, the inclusive model, promotes recipient ownership of reforms and fosters long-

term capacity building. This approach is particularly relevant in the context of climate change adaptation projects, where local ownership and participatory implementation are essential for success.

The empirical literature on regulatory frameworks emphasized how crucial they were in influencing strategy implementation by guaranteeing adherence, improving accountability, and fostering efficiency in a range of fields. The literature reviewed gave insights on the effect of government policies, community bargaining agreements and donor intent on the performance of projects. By investigating the effects of regulatory framework on the performance of climate change adaptation projects in Kenya, this study expands on the empirical findings. The comparison standards that supported the study's choice of regulatory framework as a strategy implementation construct for the conceptual framework and directed its investigation are found in the literature.

### 2.3.5 Climate change factors and effects

Climate factors in the context of implementation of climate change adaptation projects was expected to play an important role in understanding the elements of climate change, their effect on livelihoods and survival, as well as the best projects and approaches that can enhance adaptation and resilience to the harsh climate variations and change and also sustainability for generations to come.

A research was carried out by Ayal et al. (2018) on Climate Variability, Perceptions of Pastoralists and their Adaptation Strategies, in order to investigate how climatic change affected the livestock system and livestock disease among pastoralists in Borana, Southern Ethiopia. The study established that the combination of reduced rainfall, rainfall variability, and intolerable temperatures favored the spread of cattle illnesses and the depletion of pasture and water sources. These climate elements decreased household income and increased food insecurity due to livestock morbidity and loss of livestock

body weight. The study further established that to combat both established and recently discovered livestock diseases, pastoralists employed a variety of direct and indirect strategies such as utilizing conventional medicine, immunization, purchasing private medicine, securing stronger enclosures for sick animals, a variety of livestock types, a variety of livelihoods, destocking, and risk sharing in decreasing order.

A study on Camels and Climate Resilience: Adaptation in Northern Kenya, was undertaken by Watson et al. (2016), with the intention of comprehending the nature, causes, or effects of camels' enhanced resilience in the region. The study established that the preference for camels on higher ground in northern Kenya could be interpreted as a strategy for coping with climate change, because it was partly, a reaction to experiences of decreased rainfall and more frequent drought. According to the study, the camel-based adaption measures were "owned by" rather than imposed on the people, hence they were likely to be sustainable. The data also demonstrated that camel herding resulted in more cooperative gender relations through husbands and wives milking together frequently, and that camels contributed to household revenues and livelihoods.

Musafiri et al. (2022) undertook a study which examined the perceptions, causes, impacts, and barriers of climate change, as well as the factors that determined how smallholder farmers in Western Kenya adapted to it. The study found that small-scale farmers in Western Kenya were strongly impacted by climate change, with unpredictable weather patterns, financial restrictions, and a lack of agricultural expertise serving as the main obstacles to small-scale farmers' ability to adapt. The degree of education, experience, and group membership of the household head had a substantial impact on the adoption and intensity of strategies for coping with climate change.

Guto (2021) undertook a Meta-Analytical Review of the Role of Indigenous Knowledge on Environmental Conservation and Climate Change in Kenya. The study identified

numerous themes, such as stewardship, natural resource management and environmental conservation techniques, that related to the IEK resources. The results demonstrated that IEK had been utilized in environmental conservation initiatives in a number of nations, including traditional resource utilization models, the Luhya community's rain-making custom, and resource conservation strategies used by the Maasai, among other practices. The study came to the conclusion that IEK could be obtained from a number of Kenyan indigenous groups, such as the Maasai, Sengwer, Pokot, and Samburu, among others, and with the help of the information science field, could lead to the creation of an IEK repository in Kenya.

A study on Climate Change and Pastoralists: Perceptions and Adaptation in Montane Kenya, was carried out by Cuni-Sanchez et al. (2019), seeking to understand climatic changes being observed in Mt. Nyiro, Mt. Kulal and Mt. Marsabit areas in Kenya, as well as understanding the adaptation strategies used by pastoralist communities. The study found that the rains were unpredictable in terms of quantity, length, and even the occurrence of rainy season events. Communities in the three mountains saw an increase in winds as well as a general rise in temperature in Mt. Kulal and Mt. Marsabit. Environmental changes such as a decrease in the quantity and quality of grass, a decrease in water availability due to seasonal changes in wells and streams, a change in the extent and thickness of the forest, a decrease in crop yield, a decrease in the supply of milk from cows, and an increase in livestock diseases were being experienced.

The study found that the two main adaptive methods used by the populations under observation were expanded farming, increased camel herding, diversifying their sources of income, traveling farther with their herds, using the forest for fodder and growing fodder grass, reducing the number of animals in the herd, cultivating khat, developing drought-resistant crop varieties, and using wild tubers as fodder.

A study carried out by Mcleod et al. (2019) on Lessons from the Pacific Islands – Adapting to Climate Change by Supporting Social and Ecological Resilience established that the Oneisomw island settlements relied on a variety of water sources, including tanks, aquifers, streams, and wells, but freshwater security was challenged by drought and saltwater intrusion as well as human activities, which also had an impact on the coastal ecosystem. The locals had cleaned traditional water wells, installed concrete covers over the wells to keep trash and pollutants from the wells, planted vegetation buffer strips around wells and streams to stabilize deteriorated banks and reduce sedimentation, and developed agreements with landowners who had wells to permit others to access water during dry spells in order to improve water security and lessen impacts on the coastal environment.

The study also revealed that people in the Pacific islands were utilizing climate-smart agriculture (CSA), by employing age-old farming techniques like composting with seaweed and shading crops with palm fronds. Likewise, villages along the coast that depended on fishing for their sustenance were collaborating with government agriculture offices, women's organizations, and local NGOs to build household gardens to augment their food supply.

Reed et al. (2015) undertook a study on Resilience Projects as Experiments: Implementing Climate Change Resilience in Asian Cities. According to the study, urban climate change resilience projects within Asian Cities Climate Change Resilience Network (ACCCRN) depended as much on the methods used to carry out projects as it did on the deliverable advantages of the programs themselves. The study also found that some initiatives, such as rainwater collection, community-based flood management, and modern storm rescue equipment, produced immediate, palpable, and quantifiable advantages that enhanced residents' lives.

Webb et al. (2017) carried out a study on Land Degradation and Climate Change: Building Climate Resilience in Agriculture, with the goal of analyzing how land degradation may influence the effects of climate change and the ability of farmers and pastoralists to adapt across agro ecological systems. The study emphasized that land degradation could affect not only the magnitude and direction of climate impacts but also the efficiency of available management methods. The study also noted that for land degradation-climate change links to be properly recognized within management and policy options, improved knowledge exchange among stakeholders, including scientists and land users, technical advisors, administrators, and policy makers across local to national scales, was crucial.

A study by Monastyrnaya et al. (2024) explored the complexities involved in implementing resilience-oriented initiatives under conditions of drought stress. The research highlights that conflicting stakeholder interests, power asymmetries, and unequal exposure to drought risks significantly hinder the effective execution of such projects. The findings stress the importance of collaborative governance and inclusive stakeholder engagement in fostering resilience. Projects that fail to address divergent priorities among stakeholders often experienced delays, fragmented implementation, or outright failure. Conversely, when stakeholders, including community members, local authorities, private actors, and technical experts, are meaningfully involved in project design and decision-making, the resulting interventions tend to be more contextually grounded, adaptive, and sustainable.

Ndayiragije and Li (2022), in their study on Effectiveness of Drought Indices in the Assessment of Different Types of Droughts, Managing and Mitigating their Effects, with an aim to evaluate the performance of various drought indices in detecting and categorizing different types of droughts, such as meteorological, agricultural, and

hydrological droughts. The authors argued that the choice and application of appropriate drought indices significantly influenced the success of drought management interventions.

The study underscored the importance of tailoring drought monitoring tools to specific regional conditions, noting that generalized or poorly calibrated indices may lead to delayed responses or misaligned project activities. In the context of climate change adaptation projects, this was particularly critical since unreliable assessments can result in the misallocation of resources, flawed project timing, or the implementation of interventions that fail to meet local needs.

Numerous factors of climate change were identified in the empirical literature. These included extreme weather conditions and seasonal variations. Their extensive environmental, social, and economic repercussions are documented. The effects of climate change were equally discussed by literature reviewed. Drought, which entailed food and water shortages, and hazards to human animals and livelihoods were some of the major effects that were examined in the literature.

These empirical findings are used in this study to frame the examination of climate change factors and effects on the performance of climate change adaptation projects, as a moderating variable. It fills in the gaps in context-specific data and analysis while highlighting important elements and impacts pertinent to the research field. The moderating variable chosen for the conceptual framework of the study, was influenced by the reviewed literature. Therefore, the study's goal of examining how climate change factors and effects influenced institutional characteristics, resource management, stakeholder participation and regulatory framework on implementation of climate change adaptation projects was supported by the empirical data.

### 2.3.6 Project performance

Project performance metrics that can be used to gauge project performance include determining whether the project was completed on schedule and within budget, as well as whether its scope, cost targets, and specific goals were accomplished. According to Kariega (2020), in his study on Factors Influencing the Performance of Projects in Non-Governmental Organizations in Kenya, NGOs need a good system for managing their performance since they need to assess the success of the projects they conduct. He added that performance was evaluated from various angles, taking into account the interests of various stakeholders, including funders, beneficiaries, and internal effectiveness.

A study was carried out by Cleary and Lamanna (2022) on Correlation of Construction Performance Indicators and Project Success in a Portfolio of Building Projects, in an aim of understanding the relationship of performance statistics as indicators of project outcomes, such as cost, time, and profitability. The findings revealed that project success was influenced by various factors, with client satisfaction being a key outcome. This satisfaction typically stems from several project outcomes, such as adherence to time and cost constraints, as well as the quality of personal interactions, many of which were difficult to quantify. For contractors, success was often measured by the actual profit gained from a project, particularly the positive profit differential.

Stadelmann et al. (2011) in their study on Universal Metrics to Compare the Effectiveness of Climate Change Adaptation Projects argued that there was no widely acknowledged criteria for evaluating the efficiency of adaptation. The report also asserts that the lack of such a metric makes it difficult for adaptation finance vehicles, such as the Adaptation Fund established by the Kyoto Protocol, to compare the adaptive effect of ongoing or planned initiatives in order to ensure an effective distribution of their funding. The study evaluated two potential candidates for generic adaptation performance metrics:

wealth preserved from climate change impacts and disability adjusted life years saved, both of which were often employed in public health policy analyses. The report also suggested applying no-harm analyses to the fields of culture and the environment.

Mosse et al. (1996) in a handbook for task managers on Performance Monitoring Indicators for the World Bank Operations Policy Department, highlighted different ways to measure performance. The handbook highlights input indicators as a way to gauge the quantity and occasionally quality of resources offered for project activities. These resources may include funds, human resources, warranties, training, equipment, materials, and supplies, among others.

The handbook also discussed output indicators which are measures of the quantity and occasionally quality of goods and services produced or provided through the use of inputs. These indicators include things like clients served, farmers visited, miles of roads built, pollution control measures installed, among other elements. The handbook went on to discuss outcome and impact indicators as a way to gauge the quantity and quality of the outcomes attained through the delivery of project goods and services, which could include things like decreased disease incidence, better farming techniques, increased rural supply, and increased electricity consumption, among other things.

Alonzi (2017), in his article on Project Results: Output, Outcome and Impacts, pointed out that the changes or consequences that were anticipated to occur as a result of a project's implementation were the project's results. It was usually anticipated that the recipients' quality of life would have generally improved as a result of the implemented project. According to the article, Outputs were quick outcomes obtained immediately after an activity had been completed for example, the output of a project to educate locals about human rights may be "20 community workers trained in basic human rights concepts." In addition, the results that are attained over time were the outcomes. An

outcome was something that happened as a result of project activity if it happened over time, and an example of project outcome could be that "the participants used their training to inform other community members about their human rights."

According to the article, project performance could further be measured by its impact. The impact was the long-term outcome that was brought about by the project's actions. Example of an impact of a project might have been that a year later, everyone in the community was aware of human rights issues, and in the following election, the community voted overwhelmingly against a leader who had a history of violating human rights.

Økland (2015) in his article on Gap Analysis for Incorporating Sustainability in Project Management, undertook review of various literature aimed at establishing gaps for incorporating sustainability in project management. According to the author, the goal of projects was to create something that did not previously exist. His analysis established that concerns with sustainability involved trade-offs. The most crucial being in the short, medium, and long term between social, ecological, and economic elements; providing the future generations with equitable possibilities for welfare and a happy life.

Further, the article indicated that the International Standardization Organization (ISO) was working on a new set of standards for sustainability and resilience, starting with ISO 371001, where the standard addressed seven fundamental ideas that were positioned as the cornerstones of social responsibility and sustainability theory. According to the author, the literature reviewed also pointed out that applying sustainability considerations was important for both project effectiveness and efficiency, or for carrying out the best project in the best way. To do this, one must be able to prioritize with an eye on the "big picture" while embracing increasingly sustainable solutions, methods, and materials from

domains including sustainable construction, logistics and supply chain management, and performance management.

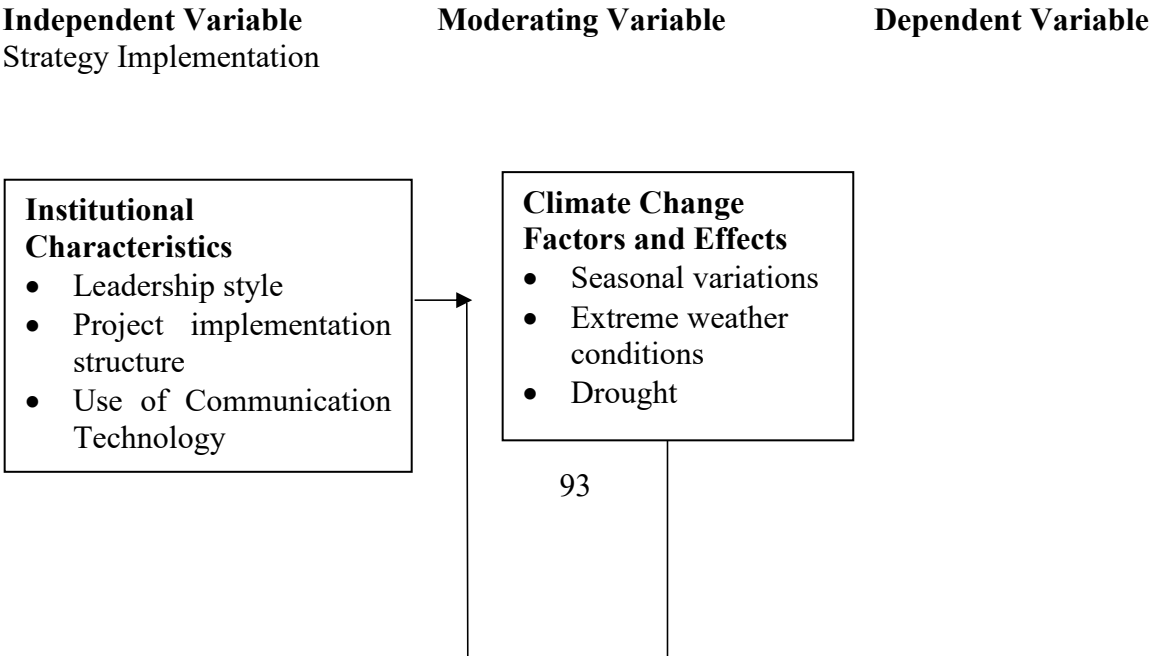
Project performance was the dependent variable for this study, and was examined in the empirical literature. The multifaceted nature of project performance, which included the outcome, cost effectiveness, output quality, and sustainability of results was continuously highlighted. By identifying project outcome as an essential performance indicator pertinent to the implementation and performance of climate change adaptation projects in Kenya, this study expands on the empirical literature. The choice of project performance as an independent variable in the conceptual framework was informed by the literature, which served as a foundation for assessing project success.

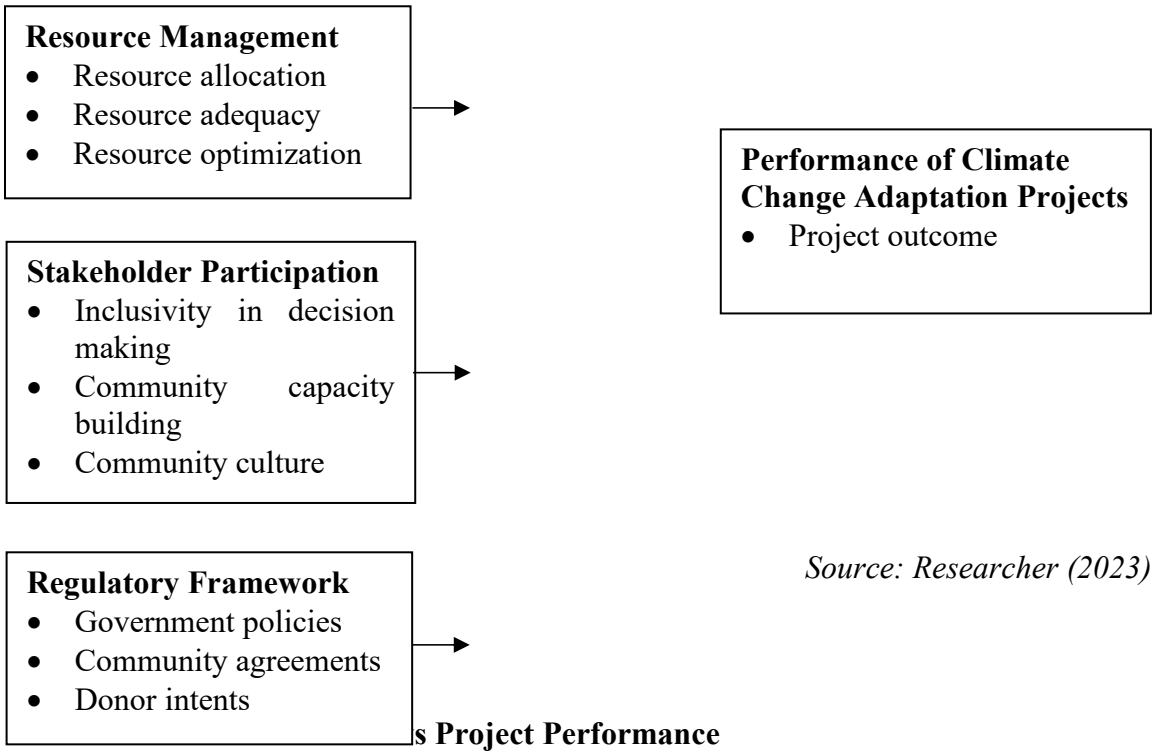
## 2.4 Conceptual Framework

The conceptual framework shows the relationship between the independent and dependent variables as well as the effect of the moderating variable. The independent variable for this study is strategy implementation, while the dependent variable is project performance. The moderating variable is Climate Change Factors and Effects. The independent variable is guided by four constructs, which are Institutional characteristics, Resource management, Stakeholder Participation and Regulatory Framework.

**Figure 1**

*Conceptual Framework Model*






*Source: Researcher (2023)*

**s Project Performance**

Institutional characteristics are the essential traits, organizational frameworks, and operational dynamics that characterize an institution and impact its operations, decision-making, and interactions with the outside world. Three sub-constructs viz leadership style, project implementation structure and use of communication technology were identified through literature review for this study as indicators of institutional characteristics. Leadership style influences project performance through coordinating, directing, supervising, empowering and inspiring the project implementation team towards effective implementation of the projects. Some leadership styles enhance project performance, while other styles cause poor performance of projects.

The project implementation structure gives a clear guidance to the team on the flow of command and roles to be played by each team member in the implementation process. A structure that clearly gives a direction on flow of command ends up supporting project performance, and vice versa. Communication technology is used by the all the players in the projects implementation to ensure timely and effective passing of information,

generation and sharing of reports and documents, holding meetings, exchanging of ideas and receiving of feedback during implementation of the projects. Use of communication technology has been mainly noted to enhance project performance.

**Resource Management vs Project Performance**

Resource management is the process of organizing, distributing, and monitoring an organization's resources to make sure they are used effectively and efficiently to achieve goals and objectives. Resource allocation, resource adequacy and resource optimization were identified through literature review to form sub-constructs for resource management. Resource allocation is a planning activity meant to identify and allocate the necessary resources for effective implementation of a project. Failure to allocate all the required resources can result to project failure.

Resource allocation alone is not enough for ensuring project success. Resources can be allocated but ends up being inadequate. Resource adequacy aims at ensuring that the resources required for implementation of a project are adequate. Inadequate resources hinder successful implementation of projects. Resource optimization is used to enhance optimal utilization of the available resources. Resource optimization tools can be used to monitor and re-allocate resources where necessary, which in turn enhances project performance.

**Stakeholder Participation vs Project Performance**

The active involvement of people, groups, or organizations that are interested in or impacted by a project, policy, or decision-making process can be referred to as stakeholder participation. Reviewed literature derived stakeholder inclusivity in decision making, capacity building and community culture to be key elements of stakeholder participation that affect performance of projects. Inclusivity in decision making entails involving stakeholders in decision making in all the phases of project implementation.

This gives a sense of ownership to the stakeholders and thus results in ready acceptance of the project. Stakeholder also get an opportunity to share their rich indigenous knowledge, which could contribute positively to implementation and performance of projects.

Capacity building involves empowering stakeholders with knowledge and skills, especially on the project being implemented. This ensures that they are equipped to continue running the project even after completion and hand-over. Values, norms, beliefs, practices, customs, and behavior inherent with community members form the community culture. A community is likely to reject a project which they deem to contradict or interfere with their common beliefs. As reviewed in literature, it plays a role in implementation of a project in communities and this ultimately affects the performance of the project.

**Regulatory Framework vs Project Performance**

Regulatory frameworks provide valuable insights into how legal, policy, and institutional frameworks can either enable or impede the execution of strategic plans, as well as implementation of projects. There are government policies put in place to govern implementation of projects and it is paramount that implementers of projects adhere or meet the requirements of these policies. CBAs are frameworks established between project implementers and the community that affect or is affected by the project. It stipulates the community and the implementers expectations and commitments, such as preservation of the natural resources, employment of community members in implementation of the project among others.

Donor intent are conditionalities that are stipulated by funding organizations to guide implementation of the projects. They include but not limited to scheduled reporting

timelines and exclusions on utilization of funds. Failure to adhere to donor intent could result to withdrawal of funding and stalling of projects.

**Climate Change Factors and Effects vs Project Performance**

Climate Change Factors and Effects is used to moderate the effect of Institutional Characteristics, Resource Management, Stakeholder Participation and Regulatory Framework on Project Performance. Three indicators are used for this variable, viz Seasonal Variations, Extreme Weather Conditions and Drought. Seasonal Variations in this study sought to understand the depicted fluctuations or changes in weather patterns, and how that ultimately affected activities related to implementation of climate change adaptation projects, and the performance of these projects.

Extreme Weather Conditions are the severe and unusual weather occurrences which interfere with the usual activities related to weather patterns and climatic conditions. These included flooding and prolonged dry periods among others. The study sought to understand how these factors influenced implementation of the projects and ultimately project performance. Drought is an effect of climate change and is depicted by shortage of water, whose effects are adverse to the ecosystem and livelihood. The role of drought in implementation of climate change adaptation projects and ultimate performance of the projects was sought by this study.

## 2.5 Summary and Research Gaps

Empirical literature was extensively reviewed and it guided the development of conceptual framework for this research. Research gaps were identified and discussed for each construct and variables for the study.

### 2.5.1 Institutional characteristics

The literature reviewed indicated that institutional characteristics which include leadership style, project implementation structure and use of communication technology

had an impact in the performance of projects. Studies carried out by Fareed et al., 2023; Gasela, 2021; Jabbar and Hussein, 2017; Lasrado and Kassem, 2020; Nyong'a and Maina, 2019; Roberts, 2010 showed that leadership charts a way that other staff follow, and the various styles affects the response of staff to the implementation of a project. The context of these studies however was in corporate and public organizations, and none focused on implementation of climate change adaptation projects among the pastoralist communities living in ASAL regions of Kenya. On the contrary, Imam and Zaheer (2021) opined that shared leadership between all the implementers resulted in successful implementation of projects.

Some project implementation structures enhanced the implementation of projects whereas others caused a stumbling block with too much bureaucracies which caused the projects to lag behind, as derived from the literature reviewed (George, 2020b; Raziq et al., 2020a; Sarhan & Dulaimi, 2022; Shah Nizam, 2017). Some of these studies were carried out in other countries such as Nigeria, and in addition, all these studies were not carried out on implemented climate change adaptation projects. Further, a study by Iroha et al. (2024) opined that development of well-defined project implementation structures would not necessarily result in effective implementation of projects.

Studies carried out by Afridi et al. 2023; Eliwa et al. 2022; Joshi 2021b; Krell et al. 2020b; Megha & Zaware 2019; Mwangi 2015a; Nureni 2014; Sahamir et al. 2021 indicated that use of communication technology including digital communication, smart phones, project management systems and document management systems had a positive impact on organizational performance. The studies were carried out in the banking industry and in organizations, thus there was a gap on studies carried out on implemented projects, including climate change adaptation projects in ASAL regions of Kenya. Studies by Korunovska and Spiekermann (2021) indicated that use of communication

technology could cause negative physiological and psychological impacts to users, and in turn result in poor project implementation impact.

The empirical literature reviewed on institutional characteristics factors mainly analyzed the aspects of institutional characteristics and focused on the importance of those aspects in running organizations. The review identified gaps and recurrent issues, such as the lack of context-specific analysis, particularly the effect of institutional characteristics on implementation and performance of climate change adaptation projects in Kenya's ASAL regions.

### 2.5.2 Resource management

Resource management had been discussed by the reviewed literature as critical in the success or failure of projects performance in terms of timely delivery within the set budgets (Chepng'eno & Kimutai, 2021; Muthiora & Moronge, 2018). The context of these studies however was state corporations and road projects respectively, thus there was a gap on climate change adaptation projects. The literature emphasized on the need to ensure that the necessary resources required for implementation of a project were availed and allocated as needed, if a project or strategy was to be successfully implemented (Densford et al., 2018; Ouma & Kamaara, 2018; Sathvara, 2023). The studies carried out were in organizations and on road project contexts and thus lacked insights on implementation of climate change adaptation projects in ASAL regions in Kenya. Allu et al. (2024) however argues that resource allocation alone was not sufficient for efficient implementation of projects.

Resource adequacy and utilization was crucial for the performance of projects. Where resources were not adequate, implementation of strategies and projects struggled and often failed. Effective utilization of available resources as required impacted on organizational performance, and lack of proper utilization posed a setback on the

implementation of the projects (Edokpolor & Dumbiri, 2019; Kiprop, 2017; Lavu & Maina, 2019). The studies were carried out in organizational set-ups and learning institution and thus a gap on implementation of climate change adaptation projects was identified. Cantarelli et al., 2010; and LeanPM®, 2020 however, dispute the notion that resource adequacy results in project performance, by highlighting in their studies that resource adequacy can actually lead to lock-in and wastage.

Resource optimization was discussed by the literature as important since it could be used to reschedule surplus resources to the areas with deficit, thus ensuring optimum utilization of resources. Failure to optimize utilization of resources resulted in wastage and deficiencies (Koyi et al., 2021; Liang et al., 2021; Wachira, 2024).

The empirical review identified gaps in knowledge about how resource management functions in implementation of climate change adaptation projects in Kenya by revealing variances across contexts. The literature reviewed on resource management discussed road projects and organizational contexts and state corporations, thus a gap on implementation of climate change adaptation projects was noted. The focus of this was based on these gaps.

### 2.5.3 Stakeholder participation

Stakeholder participation was discussed by the reviewed literature extensively and the importance of involving the various stakeholders in decision making and implementation of the projects from the initial stages was highlighted, since their involvement made implementation of the projects more readily acceptable (Artur 2016; Mkonda 2022; Ndirangu & Shisia 2016; O'Brien et al. 2021). Literature also revealed that the beneficiary stakeholders held indigenous knowledge which the implementers could tap into to enhance the success of the projects (Petzold et al., 2020). On the other hand, (Amfopo, 2025) in his study, opined that stakeholder misalignment and poor oversight

often led to project failure. Boateng and Danquah (2025) also noted that involvement of some stakeholders such as clients in project implementation can cause risks instead of solutions.

In addition, it was revealed by the literature reviewed that there was need to build capacity of the stakeholders through training, workshops and involvement in the implementation of the projects as this equipped them with necessary knowledge and skills for successful implementation and continuity of the projects (Kalisa & Gathiru, 2023; Khatibi et al., 2021b; Lucrezi et al., 2019b; Mwanzia et al., 2022; Okide, 2020b; Zimmermann et al., 2012b). However, Kaheeru et al., 2024; Morkel and Ramasobana, 2017 were of contrary opinion, and their studies indicated that stakeholder capacity building did not necessarily result in improved project performance.

Community culture was not ignored by the literature since it played a significant role in the success of projects implementation, where it was noted the importance to understand and align the projects to the said cultures if they were to be embraced by the communities (Atela et al., 2018b; Battistella et al., 2023; Charlesraj & Khan, 2018; Evans, 2022; Luong & Watanabe, 2017). The reviewed literature discussed performance of projects in general. There were gaps in the literature on how stakeholder participation worked in particular settings, especially within implementation of climate change adaptation projects in the ASAL regions of Kenya.

### 2.5.4 Regulatory framework

The role of regulatory framework in the performance of projects implemented was reviewed through various literature. It was noted that government policies could be too ambiguous due to too many approvals, licenses and regulations, hence becoming a hindrance to implementation of the projects, and the governments also lacked incorporation of climate change adaptation into the country's plans and strategies

(Amuyunzu & Kisimbii 2021; Flyen et al. 2018; Gao 2016; Hirpha et al. 2021; Pedo, 2018; Renne, 2020; Rodgers 2021).

Frameworks in the form of CBAs, had been discussed by literature reviewed as a tool that could enhance the co-existence of the project implementers to the local communities and safeguarding their natural resources. Lack of such frameworks was highlighted by the literature as a cause of animosity, stand offs, strikes and sabotage to the projects (De Barbieri, 2024; Flootman, 2022; Janssen-Jansen & van der Veen, 2017; Keenan et al., 2014; Mullins & Wambayi, 2017; Rose & Haggerty, 2019). Donor intent was discussed by the literature as having an impact on implementation of the projects, because the restrictions therein could make it impossible for the implementers to fulfill their mandate. Donor intent was also discussed by literature reviewed as a tool for enhancement of accountability, utilization of donor funds and in turn, impacts on enhanced project performance (Cain, 2014; Guillaumont et al., 2023; Helge, 2018; IASC, 2016; Schmitz, 2006).

The literature reviewed on regulatory framework did not explain the effect of strategy implementation on the performance of climate change adaptation projects in Kenya, a country characterized by 23 ASAL counties, from a total of 47 counties. Most literature focused on the implementation of public infrastructure such as road networks.

### 2.5.5 Climate change factors and effect

The studies analyzed on climate change factors and effects shed light on the relationship between climate factors such as variability of rainfall, increased temperature among others, and the success/ failure of adaptation strategies. The adverse climatic elements affected greatly livelihoods and survival of people in these communities (Ayal et al., 2018; Cuni-Sanchez et al., 2019; Guto, 2021; Mcleod et al., 2019; Musafiri et al., 2022; Reed et al., 2015; Watson et al., 2016; Webb et al., 2017). Climate change factors also

affected the outcome of implemented projects and the literature reviewed recommended consideration of climatic elements in implementation plans (Monastyrnaya et al., 2024; Ndayiragije & Li, 2022).

Literature on climate change factors and effects did not cover projects implemented to enable the ASAL communities adapt to the adverse effects of climate change. In addition, literature on institutional characteristics lacked to portray their effect on the performance of climate change adaptation projects.

As a result, the conceptual framework and research objectives as well as research hypothesis were informed by the reviewed empirical literature. This guaranteed that the study was based on accepted knowledge while offering fresh perspectives on the effect of strategy implementation, on the performance of climate change adaptation projects in Kenya.

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter highlights the methodology that was used in conducting this research. It comprised the research design adopted, target population, sample size, sampling procedure, data collection methods, data analysis and presentation techniques that were used.

## 3.2 Research Philosophy

The positivist research philosophy, which stresses objectivity, empirical measurement, and the application of scientific procedures to examine social phenomena, serves as the foundation for this study. According to Creswell and Creswell, (2017), positivism philosophy emphasizes objective, observable facts while relying heavily on quantitative approaches. Positivism allows use of highly structured and large samples data collection techniques.

The goals of this study, which were to investigate how strategy implementation elements (like institutional characteristics, resource management, stakeholder participation and regulatory framework) affect the effectiveness of climate change adaptation projects in Kenya's arid and semi-arid lands (ASALs), are well suited to the positivist paradigm. By using this methodology, the study establishes cause-and-effect links between the variables using quantitative tools, such as structured questionnaires and statistical procedures like regression analysis.

## 3.3 Research Design

This study adopted mixed research design where both quantitative and qualitative approaches were used. For quantitative approach, both descriptive and inferential analytical methods were applied. Quantitative approach emphasized measurement and data was analyzed in numerical form to give precise description. Qualitative approach

dealt with non-numerical data, aimed at understanding the opinions and experiences of the respondents. Descriptive and inferential analysis investigated the status, effect and consequences of already occurred phenomenon (Leavy, 2017).

In this study, descriptive research instruments in the form of questionnaires, scheduled interviews and observation of the project sites were used to study the performance of the implemented climate change adaptation projects.

### 3.4 Target Population

In this study, the target population was the community beneficiaries of climate change adaptation projects implemented in ASAL regions as well as the implementers of those projects. Community beneficiaries were the people that benefited from the implemented projects and they were identified with the help of the local administrators such as chiefs, sub-chief and sub-areas. Project implementers included project officers, relevant Kenyan government ministries, and expert participants who implemented the projects and they formed the key informants (KIs).

The approach of identifying the target population used Integrated Phase Classification (IPC). This classification is used by the international community to describe severity of food emergencies (FEWS NET, 2022). IPC categorizes food emergencies in five phases: Minimal, Stressed, Crisis, Emergency and Catastrophe/Famine. Phase 4 is classified as an emergency phase when there are significant food consumption gaps by households, as evidenced by extremely high acute malnutrition and excess mortality, or when households are able to reduce significant food consumption gaps by using asset liquidation and emergency livelihood strategies (IPC, 2024).

IPC projected Isiolo, Marsabit, Mandera, and Turkana counties to be in Emergency Category during the October-December 2022 period (IPC, 2022). Based on this approach, this study was undertaken in Marsabit and Isiolo counties since they had the

largest population of sedentary agro-pastoralists which had been highly affected by climate change. The target population was drawn from 11 projects with a total of 2,021 beneficiaries. Six (6) projects had been implemented in Marsabit County with a total of 875 beneficiaries while five (5) projects had been implemented in Isiolo County with a total of 1,146 beneficiaries.

**Table 1**

*Targeted Population*

| S/N | Name of Project | Implementing Agency | Location | Number of Beneficiaries |
|---|---|---|---|---|
| | | **Marsabit County** | | |
| 1. | Walda Food Security and Moyale - Walda Irrigation Project | National government in collaboration with Kenya Red Cross (KRC) | Uran | 256 |
| 2. | Sirata Irrigation Project | European Union in collaboration with the National Drought Management Authority (NDMA) | Logologo | 108 |
| 3. | Kalacha Irrigation Scheme | County government in collaboration with African Development Bank (AfDB) under a project in the State Department of Agriculture, Livestock and Fisheries Development. | Kalacha | 315 |
| 4. | Madoadi Small Scale Irrigation and Production Project | Community Initiatives Facilitation and Assistance (CIFA) with the County Department of Agriculture, Livestock and Fisheries | Sololo | 60 |
| 5. | Khandere Irrigation Scheme | Community Initiative in collaboration with the County Department of Agriculture | Kinisa | 89 |
| 6. | Songa Farmers Irrigation Scheme | County government in collaboration with African Development Bank (AfDB) under a project in the State Department of Agriculture, Fisheries and Development | Karare | 47 |
| | | **Isiolo County** | | |
| 1. | Kenya Climate Smart Agriculture Project | County Department of Agriculture, Livestock and Fisheries, State department for Crops Development and World Bank | Oldo/Nyiro | 500 |

| S/N | Name of Project | Implementing Agency | Location | Number of Beneficiaries |
|---|---|---|---|---|
| 2. | Elsa Ntirimi Water Project | County Department of Agriculture in collaboration with Action Aid Kenya | Burat | 191 |
| 3. | Rapsu Irrigation Scheme | National Drought Management Authority (NDMA), County government and World Food Programme (WFP) | Kina | 200 |
| 4. | Attan Irrigation Project | United States Agency for International Development (USAID), County government and Ward Development Committee | Ngaremara | 215 |
| 5. | Sukuma Integrated Community Project | County Department of Agriculture, Livestock and Fisheries, with funding from World Bank | Ngaremara | 40 |
| | **Total** | | | **2021** |

*Source: County Government of Marsabit and Isiolo (2023)*

### 3.5 Sample Size and Sampling Techniques

This study employed two techniques in deriving a sample size: Purposive sampling technique for the KIs involved in the implementation of the projects; and Simple Random Sampling technique, using Slovin's Formula (S. Ellen, 2020), for the beneficiaries in Marsabit and Isiolo Counties where the projects were implemented. The respondents were picked randomly from the beneficiary lists provided by the Chairmen of the projects.

Slovin's formula: $$n=\frac{N}{1+Ne^2} \quad (3.1)$$

Where n = number of samples

*N* = total population

*e* = Margin of error (0.05)

The total population was 2,021. Thus using equation 3.1, the sample size obtained was 334. The obtained sample size was distributed proportionally as shown in table 2 below:

**Table 2**

*Selected Beneficiaries (Sample Size)*

| S/N | Name of Project | Implementing Agency | Total No. of Beneficiaries | Sample Size | Key Informants (KI) |
|---|---|---|---|---|---|
| | | **Marsabit County** | | | |
| 1. | Walda Food Security and Moyale-Walda Irrigation Project | National government in collaboration with Kenya Red Cross (KRC) | 256 | 39 | 3 |
| 2. | Sirata Irrigation Project | European Union in collaboration with the National Drought Management Authority (NDMA) | 108 | 15 | 3 |
| 3. | Kalacha Irrigation Scheme | County government in collaboration with African Development Bank (AfDB) under a project in the State Department of Agriculture, Livestock and Fisheries Development. | 315 | 49 | 3 |
| 4. | Madoadi Small Scale Irrigation and Production Project | Community Initiatives Facilitation and Assistance (CIFA) with the County Department of Agriculture, Livestock and Fisheries | 60 | 7 | 3 |
| 5. | Khandere Irrigation Scheme | Community Initiative in collaboration with the County Department of Agriculture | 89 | 12 | 3 |
| 6. | Songa Farmers Irrigation Scheme | County government in collaboration with African Development Bank (AfDB) under a project in the State Department of Agriculture, Fisheries and Development | 47 | 5 | 3 |
| | | **Isiolo County** | | | |
| 1. | Kenya Climate Smart | County Department of Agriculture, Livestock and Fisheries, State department | 500 | 79 | 3 |

| S/N | Name of Project | Implementing Agency | Total No. of Beneficiaries | Sample Size | Key Informants (KI) |
|---|---|---|---|---|---|
| | Agriculture Project | for Crops Development and World Bank. | | | |
| 2. | Sustainable Food Production System | County Department of Agriculture in collaboration with Action Aid Kenya | 191 | 29 | 3 |
| 3. | Rapsu Irrigation Scheme | National Drought Management Authority (NDMA), County government and World Food Programme (WFP) | 200 | 30 | 3 |
| 4. | Attan Irrigation Project | United States Agency for International Development (USAID), County government and Ward Development Committee | 215 | 32 | 3 |
| 5. | Sukuma Integrated Community Project | County Department of Agriculture, Livestock and Fisheries, with funding from World Bank | 40 | 4 | 3 |
| **Total** | | | **2,021** | **334** | |

*Source: Researcher (2023)*

### 3.6 Data Collection Tools and Techniques

In order to effectively assess the effects of strategy implementation on climate change interventions, the researcher employed questionnaires and interviews to collect primary data. The research also used observation of the project sites and reports of the implemented projects (Taherdoost, 2021).

#### 3.6.1 Questionnaires

The researcher used this instrument to collect information from the project beneficiaries because enabled her to get views from a large number of respondents. Both closed and open-ended questions were used. Closed ended questions generated specific responses and allowed easy analysis of data, while open ended questions gave the respondents a chance to give more information. The research used research assistants to assist in questionnaire distribution and collection from beneficiaries.

### 3.6.2 Interviews

The researcher designed an interview guide which was administered to the key informants. This instrument was ideal because the respondents had a chance to scrutinize the questions and seek clarification where necessary. The interview guide also acted as a guide on the interview focus to the researcher.

### 3.6.3 Site Observation

The researcher visited the project sites and made key observations about the projects implemented, including infrastructural developments, state of project structures, adoption of the methods and techniques introduced to the communities, weather conditions and activities that were going on.

## 3.7 Pilot Testing

Pilot testing was carried out with the aim of assessing the clarity of items, testing the validity and reliability of research instruments (Dawson, 2009). Pre-testing sample should be between 1% to 10% (Mugenda, 1999). The sample size for this research was 334 respondents and the pilot test size was 33 respondents. The pilot testing was undertaken in Samburu County, which depicted similar characteristics as the research target population of Marsabit and Isiolo counties, viz, it is an ASAL region and the community practices sedentary pastoralism.

The procedures which were used in pre-testing the questionnaire, interview guide and observation checklist were identical to those that were used during the actual study or data collection. The pilot testing was carried out at Lulu Irrigation Scheme (19 respondents) and Nontoto Integrated Landscape Management Project (14 respondents), which were climate change adaptation projects undertaken in Samburu County. The beneficiaries filled in the questionnaires, interviews were undertaken with project implementers, and observation of the project sites was done. The data collected was analyzed to establish if it would obtain the results the research required.

### 3.7.1 Validity of research instruments

It was crucial to ensure that the tools used in this study accurately captured pertinent constructs like institutional characteristics, resource management, stakeholder participation, regulatory framework, climate change factors and effects and project performance. This was done to ensure that quality research was carried out and the findings reflected the reality. By proving validity, the data's dependability and credibility are increased, and the analysis's conclusions are guaranteed to be relevant and useful. In order to guarantee validity, this study used a construct validity and content validity tests.

**Content Validity**

The research instruments were designed with simple, unambiguous, logical and comprehensive questions. The research instruments were availed to selected experts, including the research supervisors, to ensure that the questionnaire and interview guide included adequate representation of concepts under the study. In addition, the experts will scrutinize the data collection tools to ensure the concepts under study are adequate, relevant and measurable.

**Construct Validity**

Construct validity was carried out to guarantee that theory and measurement were in line. The Kaiser-Meyer-Olking (KMO) and Bartlett's Test of Sphericity as well as Factor Analysis were the tools used to test construct validity.

**The Kaiser-Meyer-Olking (KMO) and Bartlett's Test of Sphericity**

KMO is used to test whether the partial correlations among variables are small. The value of KMO should be greater than 0.5 (KMO > 5) to support validity of the used variables. Bartletts's test of sphericity is used to test whether the correlation matrix is an identity matrix. The significance level for Bartlett's test should not be greater than .05 (sig < .05) (Shrestha, 2021).

**Factor Analysis**

Factor analysis is used to provide construct validity evidence of self-reporting scales (Nunnally, 1978). According to Williams, et al. (2010), a factorability of 0.40 is important, while 0.50 is significant. A factorability of 0.30 and below means that the variables share too much variance, making it impractical to determine the correlation of variables.

### 3.7.2 Reliability of measuring instrument

The research study used internal consistency method. Internal consistency will be tested using the Cronbach's alpha statistics. Cronbach's alpha (α) is a coefficient (a number between 0 and 1) that is used to rate the internal consistency or homogeneity or the correlation of items in a test. Where Cronbach's alpha coefficient is used for reliability test, the value should be above 0.7 (Cronbach, 1951).

### 3.7.3 Testing of interview guide

The research study tested the interview guide by conducting interviews with key informants who included the area chiefs and representatives of the county government for the two projects. The KIs were chosen because of their knowledge and influence regarding the project.

### 3.7.4 Observation techniques

The research used an observation checklist which included physical project site, ongoing activities, physical things present, weather condition and feelings expressed as items for observation. These parameters were important because they helped the research have an overview of the physical condition of the implemented projects, as well as the attitudes of the beneficiaries in regard to the projects.

### 3.8 Data Collection Procedures

The researcher obtained an introduction letter from the Department of Business Management, Meru University of Science and Technology. An approval was sought from the Meru University Institutional Research Ethics Review Committee (MIRERC) and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI), which were shared with the respondents. Oral interviews were carried out by the researcher with the key informants. Administration of questionnaires to the respondents was carried out by the researcher together with the research assistants over a period of two weeks in Marsabit, and two weeks in Isiolo. Research assistants were required due to language barriers. The researcher visited the sites of the implemented projects to establish the physical state of the projects. Data collection was cross-sectional.

### 3.9 Data Processing and Analysis

This study collected and processed quantitative data by calculating the response rate with descriptive statistics such as mean and standard deviation, using the Statistical Package for Social Sciences (SPSS) version 21 and Microsoft Excel. The data was tabulated to have visual description of the distribution. Prior to running the regression models, diagnostic tests were done to determine the appropriateness of the model. These included multicollinearity, heteroscedasticity and normality tests.

The researcher used Variance Inflation Factors (VIF) predictor variables to test multicollinearity. According to Mishra, et al. (2019), VIF assesses the extent of variance of the estimated regression coefficients relative to when these variables do not have a linear relationship. Autocorrelation occurs when the error terms of regression variables for successive periods are correlated. When present in a dataset, it can distort the efficiency of regression estimators.

Heteroscedasticity is a problem that tends to inflate the standard errors, thereby increasing the probability of committing a type two errors, i.e. failing to reject a false hypothesis about a coefficient. Scatter Plot was used to test the panel data for heteroscedasticity. P-P plots were used to test for normality. The null hypothesis of the test is that the data is homoscedastic across entities, i.e. the error terms have a constant variance. If the null is rejected, the conclusion is that the data is heteroscedastic, that is, the variance of error terms across entities is not constant.

### 3.9.1 Statistical measurement models

The linear model assumptions were satisfied, and each independent variable was first regressed against the dependent variable to determine its influence as per the following equations:

$$Y=\beta_{0i}+\beta_i X_i+\epsilon_i, \qquad i=1,2,3,4 \qquad (3.2)$$

Where; Y= project performance

$\beta_{0i}$=constant for the $i^{th}$ equation

$\beta_i$ are the regression coefficient for ( i=1, 2,3,4)

$X_i$= Independent variables as follows

$X_1$ =Institutional Characteristics

$X_2$= Resource Management

$X_3$= Stakeholder Participation

$X_4$= Regulatory Framework

$\varepsilon_i$ = error term for the $i^{th}$ equation.

A multiple linear model of the form $Y= \beta_0 + \beta_1X1 + \beta_2X2 + \beta_3X3+ \beta_4X4 + \varepsilon$ was fitted from the data collected and the model summary was discussed.

Finally, the moderating variable was incorporated in the multiple linear model

$Y= \beta_0 + \beta_1X1 + \beta_1{}^*X1.X5 + \beta_2X2 + \beta_2{}^*X2.X5 + \beta_3X3 + \beta_3{}^*X3.X5 + \beta_4X4 + \beta_4{}^*X4.X5 + \beta_5X5 + \varepsilon$ and the results were discussed.

### 3.10 Measurement of Variables

Open ended and closed ended questions were used in this study. The open-ended questions enabled the respondents to include information that might not be captured in the closed ended questions. Likert scale, developed by Rensis Likert in 1932 to examine how subjects strongly agree or disagree with a given statement was used in this study (Likert, 1932). The Likert scale dominated the questionnaire in this research.

All the hypothesis testing the relationship between strategy implementation and project performance were measured by a linear regression model.

### 3.11 Ethical Issues

The researcher obtained a letter of introduction from the Meru University of Science and Technology (MUST), Department of Business Management. The research work was also scrutinized by accreditation bodies to ensure that it met the required ethical standards. An approval to carry out research (approval number MIRERC 051/2024) from the Meru University Institutional Research and Ethics Review Committee (MIRERC) was granted, and a research license (License No: NACOSTI/P/24/414768) from the National Commission of Science, Technology and Innovation (NACOSTI) was also granted.

#### 3.11.1 Informed consent

Before collecting data, the researcher informed the respondents the purpose of the study, in this case, for academic purposes, for the award of a Doctor of Philosophy degree in Business Management. In addition, the researcher informed the respondents of the importance of their participation through filling in the questionnaires to the success of the research.

### 3.11.2 Voluntary participation

The researcher sought the consent of the respondents to participate in the data collection exercise. In addition, the researcher informed the respondents of their freedom to participate in the study voluntarily and assured them that there would be no negative consequences to their refusal to participate.

### 3.11.3 Confidentiality

The researcher assured the respondents that the data collected would be treated with utmost confidentiality, and would be used for the intended purpose only. The researcher further assured the respondents that their identity would remain anonymous, and this was enhanced by ensuring that the questionnaires did not collect any personal identifying information.

### 3.11.4 Communication of results

The research results presented are honest, reliable, credible and transparent. The researcher ensured that the research reports were not manipulated or mis-represented and the work was subjected to a plagiarism check. The research findings shall be published for access by respondents and other interested parties.

### 3.11.5 Data protection

The researcher adhered to the Data Protection Act, 2019, clause 25, (GoK, 2019), on the right to privacy of the respondents and the data collected and this was achieved by not making provision for filling of personal data on the questionnaires. Clause 39, the data collected was kept for the period leading to successful award of the degree, after which it was destroyed by shredding.

# CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS

## 4.1 Introduction

This chapter entails the findings of the study, obtained from the data collected in the field. It comprises of the pilot study results, the response rate, the demographics and general information, the descriptive analysis of the study variables, the diagnostic tests, inferential statistics and the summaries of qualitative data collected through interviews, open-ended questions and observations of the project sites.

## 4.2 Pilot Study Results

The pilot study was carried out at two climate change adaptation projects in Samburu County in July 2024. Data was collected from a total of 33 respondents, out of whom 2 were project implementers and 31 were project beneficiaries. The county was an ASAL region and the community practiced sedentary agro-pastoralism. The projects where respondents were drawn from were: Lulu Irrigation Scheme from which 19 respondents were drawn from. The project was implemented on a joint community owned land of 23 acres, which were distributed to community beneficiaries, where they carried out farming of food crops. The project did not perform well due to poor relationship between the community and the implementing contractor, and also due to rampant vandalism of the water pipes. The local community has entrenched cultural practices including distinctive gender roles, women being the family providers and joint community land ownership. Nontoto Integrated Landscape Management Project was the second project and the respondents were 14. The project entailed excavation and construction of a water dam, provision of livestock watering troughs for use by beneficiaries and a water tank where the community fetched water from. The project was highly successful and the local community were able to irrigate their farms using water from the dam and also water

their livestock. The community had been engaging in farming of high value crops for commercial market alongside foodstuffs for domestic consumption. The community was embracing education, including empowerment of women through adult learning program. This community also allowed women to own property, and land was individually owned.

### 4.2.1 Validity of the research instruments

Content and construct validity tests were undertaken and the results discussed below:

**Content validity**

The research instruments were scrutinized by experts in various fields to ensure they were adequate, reliable and measurable. These included the research supervisors, who ensured that the instruments represented the study concepts adequately. Through their guidance, the questions covered each variable, construct and sub-constructs. Since the questions were qualitative in nature, they ensured that they were designed to apply likert scale so that they could be analyzed using SPSS. A faculty member in the School of Business and Economics also scrutinized the tools and gave input on how they could be enriched through addition of open-ended questions to each variable and construct, such as "What is your general view on how the resources were managed during implementation of the project?" that was introduced in Part C (Resource Management) of the questionnaire. Further the tools were scrutinized by a skilled statistician to establish whether they were measurable and could be analyzed using statistical tools. He ensured that the questions were well organized so that coding of responses was well captured.

**Construct validity**

Table 3 and 4 provide the results for the tests undertaken to ensure construct validity of the data collection instruments.

**Table 3**

*Kaiser-Meyer-Olkin (KMO) Measure of Sampling and Bartlett's Test of Sphericity*

| KMO and Bartlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .768 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 59.559 |
| | Df | 15 |
| | Sig. | .000 |

*Source: Researcher (2024)*KMO test of data showed that the data set was suitable because the acquired number was greater than 0.5 (0.768). Similarly, the number of significant Bartlett's test was 0.000, which was smaller than the required significant level of 0.05. This indicated that the correlation matrix possessed significant information.

**Table 4**

*Factor Analysis*

| Communalities | | |
|---|---|---|
| | **Initial** | **Extraction** |
| Institutional Characteristics | 1.000 | .840 |
| Resource Management | 1.000 | .714 |
| Stakeholder Participation | 1.000 | .816 |
| Regulatory Framework | 1.000 | .662 |
| Climate Change Factors and Effects | 1.000 | .775 |
| Project performance | 1.000 | .751 |

Extraction Method: Principal Component Analysis.
*Source: Researcher (2024)*

The Principal Component Analysis extraction for all the variables had high values of above 0.4, thus the variables were well represented.

### 4.2.2 Reliability of the research instruments

Cronbach Alpha Test was used to establish reliability of the research instruments and the results are presented in table 5.

**Table 5**

*Cronbach Alpha Test*

| S/N | Variable | N | No. of questions | Cronbach Alpha | Cronbach Alpha based on Standardized Items |
|---|---|---|---|---|---|
| 1. | Institutional Characteristics | 35 | 12 | 0.678 | 0.732 |
| 2. | Resource Management | 35 | 12 | 0.641 | 0.706 |
| 3. | Stakeholder Participation | 35 | 12 | 0.743 | 0.796 |
| 4. | Regulatory Framework | 35 | 12 | 0.782 | 0.777 |
| 5. | Climate Change | 35 | 12 | 0.678 | 0.732 |
| 6. | Project Performance | 35 | 10 | 0.934 | 0.938 |
| | **Average Score** | | | **0.743** | **0.780** |

*Source: Researcher (2024)*

The Cronbach Alpha on standardized items represents the results derived from SPSS analysis. All the variables and constructs had 0.7 and above, and were thus reliable.

### 4.2.3 Interview Guide

The interview guide was tested to establish whether the interview questions were well formulated and clearly understood by the interviewees. The questions were scrutinized by the faculty experts and supervisors and found to be objective and adequate for the study. Further, the key informants interviewed accepted the questions and thus the tool was adopted for data collection.

### 4.2.4 Observation Technique

The researcher visited the project sites and observed the state of the implemented projects as indicated in the objectives of the study. The observation checklist was shared with research supervisors and faculty and the checklist items were found to be sufficient for data collection. The checklist was thus adopted without any change.

## 4.3 Response Rate

The study had a target of 334 respondents, from various climate change adaptation projects implemented in Marsabit and Isiolo counties.

**Table 6**

*Response Rate*

| S/N | Projects | Target Respondents | Interviews Conducted | Questionnaires Received | Percentage Response Rate |
|---|---|---|---|---|---|
| | | **Marsabit Projects** | | | |
| 1. | Walda Food Security and Moyale-Walda Irrigation Project | 42 | 3 | 33 | 86 |
| 2. | Sirata Irrigation Project | 18 | 3 | 14 | 94 |
| 3. | Kalacha Irrigation Scheme | 52 | 3 | 39 | 81 |
| 4. | Madoadi Small Scale Irrigation and Production Project | 10 | 2 | 7 | 90 |
| 5. | Khandere Irrigation Scheme | 15 | 3 | 12 | 100 |
| 6. | Songa Irrigation Scheme | 8 | 2 | 5 | 88 |
| | **Sub-Total** | **145** | **16** | **110** | **87** |
| | **Isiolo Projects** | | | | |
| 1. | Kenya Climate Smart Agriculture Project | 82 | 2 | 58 | 73 |
| 2. | Elsa Ntirimi Water Project | 32 | 3 | 25 | 88 |
| 3. | Rapsu Irrigation Scheme | 33 | 2 | 27 | 88 |
| 4. | Attan Irrigation Project | 35 | 2 | 28 | 86 |
| 5. | Sukuma Integrated Community Project | 7 | 2 | 4 | 86 |
| | **Sub-Total** | **189** | **11** | **142** | **81** |
| | **Total** | **334** | **27** | **252** | **84** |

*Source: Researcher (2025)*

A total of 334 respondents were targeted for the study, out of which 279 responded through filling of questionnaires and interviews conducted. This translates to a response rate of 84%. 301 questionnaires were administered to the respondents from, out of which 252 respondents returned duly filled up questionnaires which translates to a response rate

of 84 percent. 33 key informants were targeted for interviews, but only 27 interviews were conducted, which translates to 81 percent response rate. According to (Saunders et al., 2023), a response rate of 70 percent is adequate for undertaking inferential analysis and making generalizations. Thus, the response rate of 84% attained by the study was adequate.

### 4.4 Demographics and General Information

The study examined age, gender, level of education, source of livelihoods and role played in implementation of the project as key demographic attributes of the respondents. The result of findings are presented below in Table 7, 8, 9, 10 and 11.

**Table 7**

*Gender*

| **Demographic** | **Frequency** | | **Percentage** |
|---|---|---|---|
| | **KIs** | **Beneficiaries** | |
| Male | 20 | 69 | 32 |
| Female | 7 | 183 | 68 |
| **Total** | **27** | **252** | **100** |

*Source: Researcher (2025)*

Table 4.5 show that the gender of the respondents were 32 percent male and 68 percent female respondents. Two projects under study were women group projects. This contributed to the high representation of the female gender since the two projects were composed of women only.

**Table 8**

*Age*

| **Demographic** | **Frequency** | | **Percentage** |
|---|---|---|---|
| | **KIs** | **Beneficiaries** | |
| 18-35 years | 7 | 70 | 27.6 |
| 36-60 years | 16 | 149 | 59.1 |
| Above 60 years | 4 | 33 | 13.3 |
| **Total** | **27** | **252** | |

*Source: Researcher (2025)*

The results on age of the respondents in table 4.6 show that majority of the respondents were in the range between 36 to 60 years, at 59.1 percent. Ages 18 to 35, mainly referred to as youth category followed at 27.6 percent, and this was mainly caused by massive relocation of youth from the villages to the urban centers. The category above 60 years had the least representation at 13.3 percent, and this was attributed to the fact that the energy levels of that age group was declining, thus not keen on embarking on new practices such as farming. This age group was also more conservative and inclined to their culture, which views wealth in terms of livestock owned by an individual, and refers to people embarking on farming practices as poor.

**Table 9**

*Level of Education*

| **Demographic** | **Frequency** | | **Percentage** |
|---|---|---|---|
| | **KIs** | **Beneficiaries** | |
| Below primary | 0 | 103 | 36.9 |
| Primary | 0 | 89 | 31.8 |
| Secondary | 4 | 34 | 13.6 |
| Tertiary | 23 | 18 | 14.6 |
| Adult learning programme | 0 | 8 | 2.8 |
| **Total** | **27** | **252** | |

*Source: Researcher (2025)*

Table 4.7 show results on the level of education of the respondents, both beneficiaries and KIs. The largest number of respondents had below primary level of education at 36.9%. This was followed closely by primary at 15.8%, and secondary level at 13.6%. 14.6% respondents had attained tertiary education, and the high number was due to a large number of KIs who had tertiary education. A small group of 2.8% had attended adult learning programmes for basic education. The representation on the education levels of the respondents was an indication that the communities had not attained much education and this was attributed to the culture as well as hardships persevered by pastoralists communities. These communities were nomadic pastoralists hence it was

not easy to attend schools back in the days. The age category of the majority respondents (36-60 years), corresponds to the level of education of the majority respondents (primary and below primary level).

**Table 10**

*Source of Livelihood of Beneficiaries*

| Demographic | Frequency | Percentage |
|---|---|---|
| Pastoralism | 215 | 95.5 |
| Chicken rearing | 20 | 8.8 |
| Cash crops farming | 0 | 0 |
| Food crops farming | 101 | 44.8 |
| Entrepreneurship | 19 | 8.4 |

*Source: Researcher (2025)*

The study also sought to understand the source of livelihood of the respondents, where respondents were allowed to tick multiple answers and the results are as indicated in table 4.8. Pastoralism had majority of respondents at 95.5 percent. This was explained by the communities being pastoralist, which was still highly valued in those communities. Food crops farming followed at 40.1 percent, and this is attributed to the introduction of irrigation schemes and farming practices to those communities. The pastoralists were moving away from nomadic pastoralism to sedentary pastoralism, and were slowly embracing farming practices to supplement their food and income sources. 8 percent of the respondents reared chicken to supplement their food and income sources, and 7.5 percent undertook entrepreneurial activities. No respondents indicated their involvement in growing of cash crops.

**Table 11**

*KI Role in Implementation of the Projects*

| KI Role | Interviews Conducted | Percentage |
|---|---|---|
| Expert/Professional Participants | 4 | 14.8 |
| Government Representatives | 7 | 25.9 |
| Local Administration | 7 | 25.9 |
| Beneficiaries/ Community Representatives | 9 | 33.3 |
| **Total** | **27** | |

*Source: Researcher (2025)*

Beneficiaries/community representatives had the highest representation of the Key Informants interviewed, while government representatives and local administration both had a representation of 25.9%. Expert/professional participants had the least representation at 14.8%.

### 4.5 Diagnostic Tests

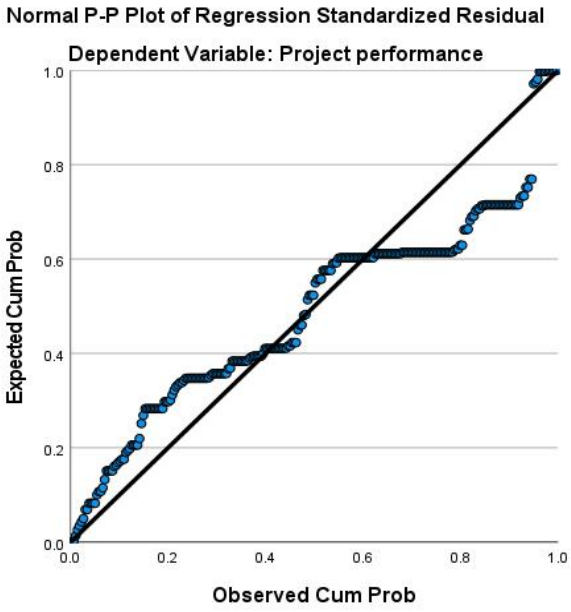
Diagnostic tests were carried out to verify the assumptions of normality, linearity, homoscedasticity and absence of multicollinearity. These tests would assist in verifying that all the verdicts of multiple regression analysis remained reliable, and guaranteed that the assumptions of the regression model are satisfied.

#### 4.3.1 Testing for normality

Testing for normality was undertaken by running P-P plot of regression, to establish whether the data was normally distributed.

**Figure 2**

*Normal P-P Plot of Regression*




*Source: Researcher (2025)*

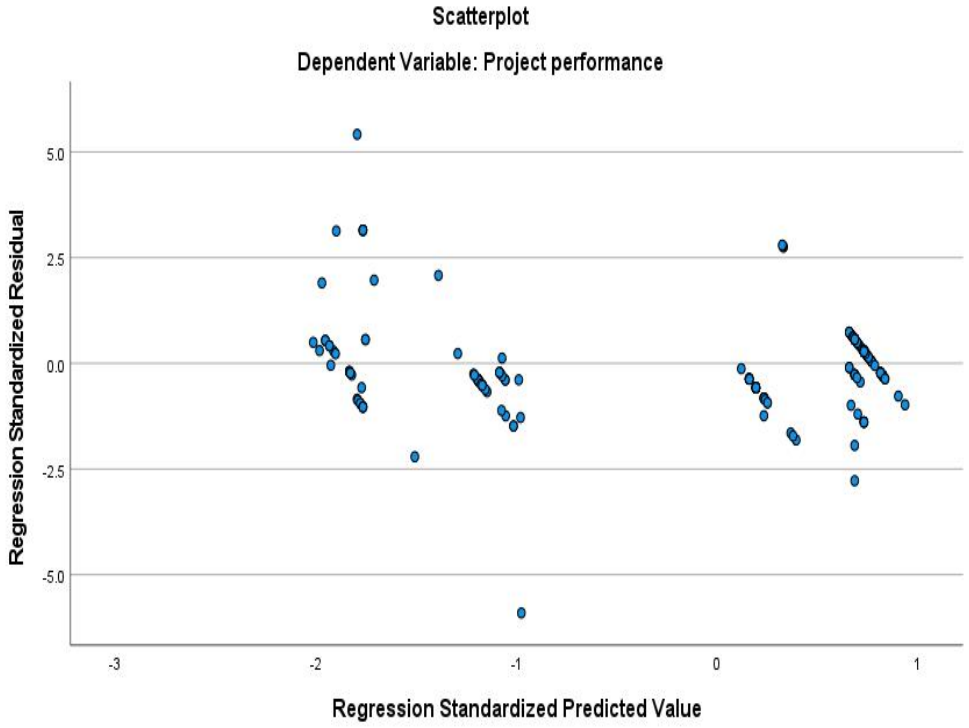
From the figure 2, majority of the observations are clustered around the diagonal line showing that the observed values and expected values obey the normal distribution. This indicates that the assumptions of normality of the regression model are met.

### 4.3.2 Test for homoscedasticity

Scatter plot was used to test homoscedasticity for this study, with the aim of establishing whether the variance of errors was constant in the independent variable constructs.

**Figure 3**

*Scatter Plot*




*Source: Researcher (2025)*

The scatter plot of the residuals do not have an obvious pattern, and in addition and there are points equally distributed above and below zero on the X axis as shown in figure 3. Majority of the observations have errors around zero. This implies that the assumption of homoscedastic is satisfied.

### 4.3.3 Multicollinearity test

The data was tested for multicollinearity to establish whether there was high correlation between the independent variable constructs.

**Table 12**

*Multicollinearity Test Results*

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | T | Sig. | Tolerance | VIF |
| 1 | (Constant) | -8.649 | 1.865 | | -4.637 | .000 | | |
| | Institutional Characteristics | -.166 | .029 | -.073 | -5.761 | .000 | .627 | 1.596 |
| | Resource Management | -.030 | .011 | -.031 | -2.632 | .009 | .718 | 1.392 |
| | Stakeholders Participation | 1.495 | .026 | 1.113 | 57.255 | .000 | .269 | 3.712 |
| | Regulatory Framework | -.231 | .055 | -.076 | -4.168 | .000 | .303 | 3.297 |
| | Climate Change Factors and Effects | .134 | .036 | .041 | 3.755 | .000 | .869 | 1.151 |

a. Dependent Variable: Project performance

*Source: Researcher (2025)*

Multicollinearity test was undertaken to check whether the study predictor variables were highly correlated with each other. From the table 12, institutional characteristics had a VIF of 1.596, resource management VIF was 1.392, stakeholder participation VIF was 3.712, regulatory framework VIF was 3.297 while climate change factors and effects had a VIF of 1.151. All the VIF values were below 5, which means that the variables were not strongly correlated showing that the assumption of non-multicollinearity is satisfied and therefore the regression model was suitable.

### 4.6 Descriptive Analysis, Inferential Statistics and Hypothesis of the Study Variables

The study aimed to gather descriptive statistics according to variables in terms of central tendency and dispersion as a basis of the foundations for further statistical analysis. Descriptive statistics for institutional characteristics, resource management, stakeholder participation, regulatory framework, climate change factors and effects and the

performance of climate change adaptation projects has discussed and presented in the subsequent subsections.

Inferential statistics was conducted to allow predictions (inferences) and generalization from the data drawn from the study. The key inferential statistics deduced from the study's findings included Correlation analysis, Regression analysis, model summary, analysis of variance (ANOVA), Hypothesis testing, optimal model of the study.

Correlation analysis was carried out to establish whether the independent variables had a relationship with the dependent variable, and the extent to which they were related.

The study conducted simple regression analysis and multiple linear regression analysis in testing of the hypothesis. In this regard institutional characteristics, resource management, stakeholder participation, regulatory framework and climate change factors and effects were regressed against project performance.

Testing for hypothesis was done using multiple regression analysis and was interpreted using R value at p.

### 4.6.1 Institutional characteristics

The study intended to establish the extent to which institutional characteristics affected the performance of climate change adaptation projects. Institutional characteristics has been conceptualized as one of the constructs of strategy implementation, with leadership style, project implementation structure and use of communication technology as its indicators.

**Table 13**

*Descriptive Statistics for Institutional Characteristics*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| To what extent did the Project Implementers (PIs) allow beneficiary representatives to participate in decision making on the project implementation? | 252 | 4.004 | 1.506 |

| | N | Mean | Std. Deviation |
|---|---|---|---|
| How frequently did the PIs give freedom to the beneficiaries to implement the project in their own way using indigenous knowledge? | 252 | 3.909 | 1.661 |
| What level of importance did the PIs accord to developing beneficiaries as individuals through guidance and support during implementation of the project? | 252 | 3.492 | 1.737 |
| How often did the PIs set rules and regulations, to be strictly adhered to by the beneficiaries during the period the project was being implemented? | 252 | 2.167 | 1.568 |
| To what extent did the donors interfere in the implementation of the project | 252 | 3.480 | 1.739 |
| Do you agree that a single person (senior leader) was responsible for implementation of the project? | 252 | 3.381 | 1.820 |
| Do you agree that experts were allowed to focus on their areas of expertise during implementation of the project? | 252 | 3.579 | 1.712 |
| To what extent were the roles and responsibilities of the various implementation teams defined? | 252 | 3.433 | 1.731 |
| Do you agree that the technology used in implementation of the project was user friendly to the beneficiaries? | 252 | 2.056 | 1.128 |
| How accessible was the technology used in implementation of the project to the beneficiaries? | 252 | 2.286 | 1.226 |
| To what extent was the technology used in implementation of the project affordable to the beneficiaries? | 252 | 3.032 | 1.428 |
| How convenient was the technology used in implementation of the project to the members? | 252 | 2.687 | 1.434 |
| Average | 252 | 3.126 | 1.558 |

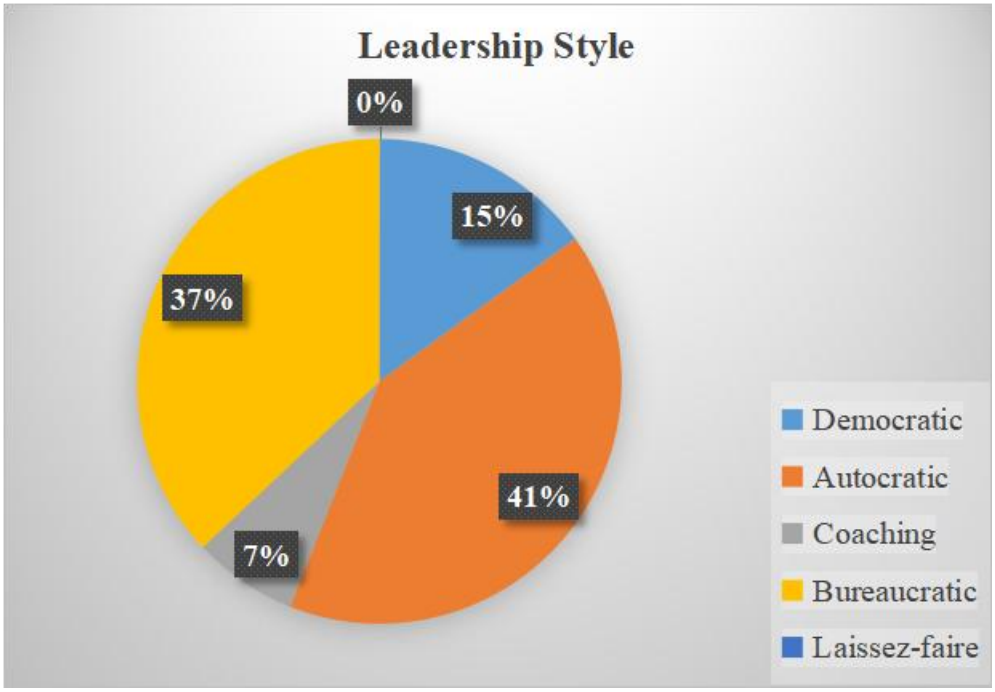
*Source: Researcher (2025)*

The items on institutional characteristics had a mean score range from 4.00, that the PIs did not allow the participation of beneficiary representatives in decision making during implementation of the project, to 2.05, that the technology used in implementation of the project was user friendly to the beneficiaries. The standard deviation of all items on institutional characteristics was low, from 1.12 on the item that the technology used in implementation of the project was user friendly, to 1.82, on the item that a single person (senior leader) was responsible for implementation of the project. The dispersion of the responses was thus low, meaning that most of the respondents had the same opinion about the implementation of the projects.

Interviews conducted sought to understand the leadership style adopted by PIs, type of PIS used by PIs and communication technology adopted by PIs in implementation of the projects. Further information was sought on any challenges experienced associated with institutional characteristics, and how they were resolved. The general views on institutional characteristics in regard to implementation was also sought from the respondents through open-ended questions.

**Figure 4**

*Leadership Styles Adopted by PIs*



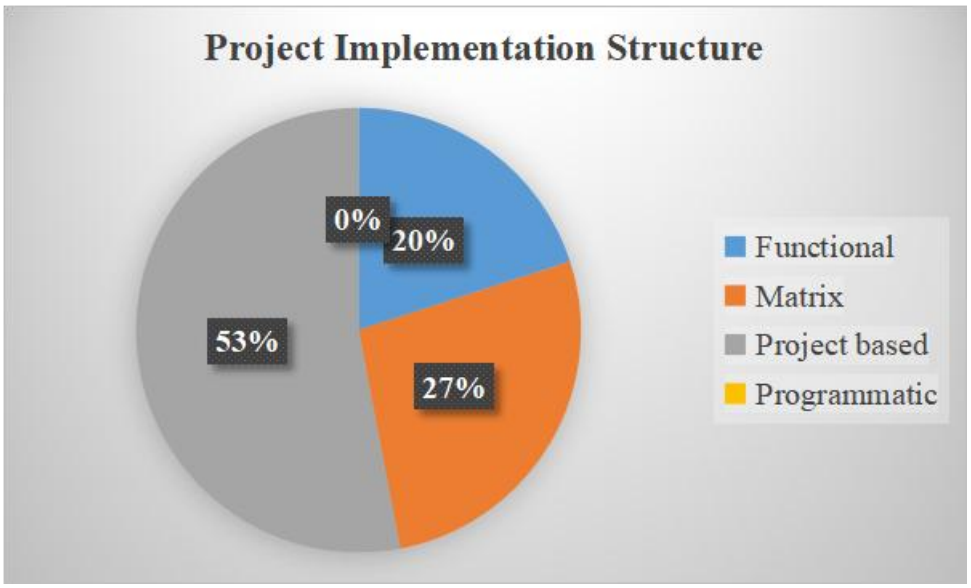

*Source: Researcher (2025)*

41% of the interviewed KIs indicated that they used autocratic style of leadership, while 37% indicated that they used bureaucratic style. These two leadership styles are dictatorial and do not give room for integration of beneficiaries' ideas. 15% used democratic style and only 7% used coaching, which allowed integration of inputs from beneficiaries, and their participation in implementation of the projects. The major challenge experienced by the PIs during implementation of the project was stand-offs

with the beneficiaries. This was resolved through use of intermediaries mainly the local administration.

**Figure 5**

*Project Implementation Structure Used by PIs*

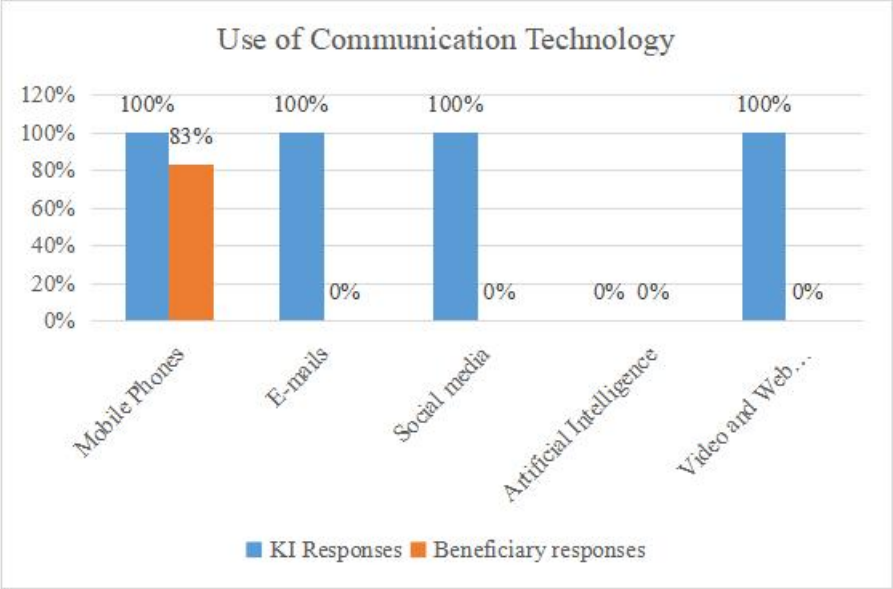



*Source: Researcher (2025)*

53% of the KIs interviewed indicated that they employed project-based implementation structure, where a lead implementer had the formal authority of the implementation of the projects. 27% adopted matrix structure, which allowed knowledge sharing by implementers, and participation of stakeholders as need be. Only 20% indicated that they used functional structure, which allowed experts to focus on their areas of expertise during implementation. The major challenge experienced was disagreements between the different PIs due to conflicting views and approaches. This was resolved by allowing the experts to focus on their areas of expertise, as well as involvement of intermediaries who included county and government leadership.

**Figure 6**

*Use of Communication Technology*



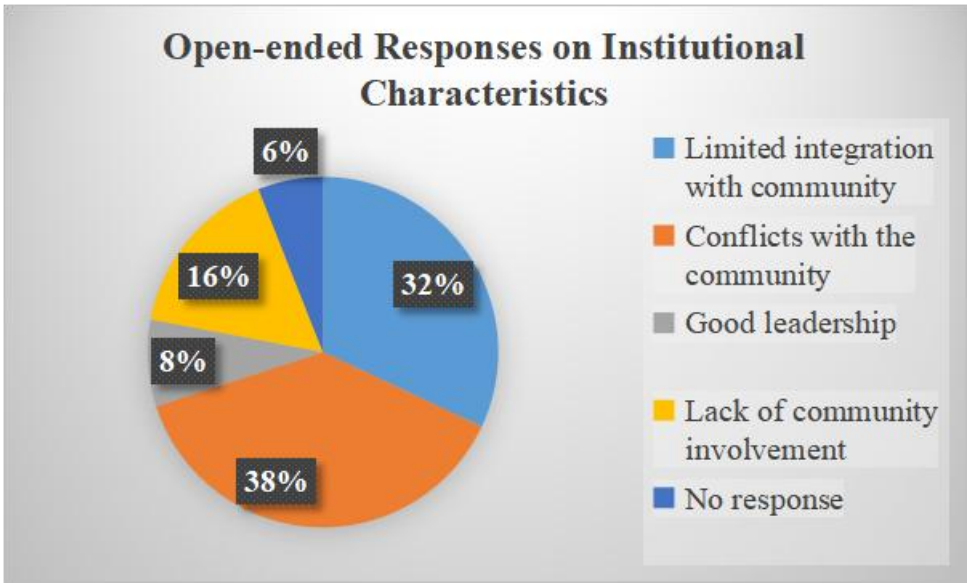

*Source: Researcher (2025)*

All the KIs interviewed indicated that they used mobile phone calls, e-mails, social media, and video conferencing technologies for their communication with donors and amongst themselves during implementation of the project. There was 0% indication that artificial intelligence was used during implementation of any of the projects. The KIs indicated that they experienced a challenge of communication with the beneficiaries due to their lack of exposure to technology, as well as technical challenges such as lack of power installation to the communities. This challenge was resolved by use of emissaries and spokespeople in passing information to the beneficiaries. Chief barazas were also used as a communication forum.

83% of the beneficiaries indicated that they used mobile phone calls for their communication during implementation of the project. However, they indicated that they experienced challenges in the use of the mobile phones due to poor network coverage, lack of power installations to the homesteads and lack of airtime.

**Figure 7**

*Open-Ended Responses on Institutional Characteristics*




*Source: Researcher (2025)*

The research sought to know the views of the beneficiaries towards institutional characteristics factors on the implementation of the projects through open-ended questions. From the data collected, 38% of the beneficiaries indicated that there were conflicts between the PIs and the communities due to their approach in implementing the projects, ranging from poor leadership and lack of clear direction. 32% indicated that the PIs did not integrate well with the community, hence there was a gap which caused the beneficiaries to have poor interest in the projects. Likewise, 16% respondents indicated that the PIs did not involve the community in the implementation of the project. Only a handful, 8%, felt the PIs led implementation of the projects in a good manner.

Observation of the project sites deduced feelings of dissatisfaction from the beneficiaries, towards the implemented projects. These feelings arose due to the leadership from the PIs, which lacked integration of the communities in the implementation of the projects and the flow of command was not inclusive. Comments such as “Implementation of an irrigation project was not our choice, but it was forced unto us, since we had lost all our

livestock to the drought", were expressed. The research also observed that there was no electricity connectivity to majority of the communities. Very few homesteads had solar power connections. This was an indication that use of communication technology was likely to be a challenge in these communities.

**Table 14**

*Correlations for Institutional Characteristics*

| | | Institutional Characteristics | Project performance |
|---|---|---|---|
| Institutional Characteristics | Pearson Correlation | 1 | .531** |
| | Sig. (2-tailed) | | .000 |
| | N | 252 | 252 |
| Project performance | Pearson Correlation | .531** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 252 | 252 |

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

*Source: Researcher (2025)*

From table 14 institutional characteristics had a coefficient of correlation of 0.531, and a significance of .000. There was a fair positive correlation between institutional characteristics and project performance at <0.01 level of significance. This implies that institutional characteristics fairly impacted project performance.

**Table 15**

*Coefficients for Institutional Characteristics*

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | T | Sig. |
| 1 | (Constant) | -6.409 | 4.613 | | -1.389 | .166 |
| | Institutional Characteristics | 1.199 | .121 | .531 | 9.896 | .000 |

a. Dependent Variable: Project performance

*Source: Researcher (2025)*

From table 15, the simple linear regression model is $Y=-6.409+1.199x_1$. This shows that institutional characteristics significantly and positively influenced project performance (p value=.000). Hence, an increase in institutional characteristics by 1 unit leads to a

corresponding increase in project performance by 1.199 units holding other factors constant.

**Table 16**

*Analysis of Variance for Institutional Characteristics*

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 15810.390 | 1 | 15810.390 | 97.929 | .000[b] |
| | Residual | 40362.039 | 250 | 161.448 | | |
| | Total | 56172.429 | 251 | | | |

a. Dependent Variable: Project performance
b. Predictors: (Constant), Institutional Characteristics

*Source: Researcher (2025)*

Table 16 indicates the F value of 97.929 as obtained with a p-value of .000, which suggests that the regression model is statistically significant. The model was thus fit for prediction purposes.

**Table 17**

*Model Summary for Institutional Characteristics*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .531[a] | .281 | .279 | 12.70623 |

a. Predictors: (Constant), Institutional Characteristics

*Source: Researcher (2025)*

From table 17, the Adjusted R Squared is 0.279, which implies that the variability in institutional characteristics explains 27.9% of the variability in project performance. Thus, institutional characteristics alone has a poor effect in explaining project performance, implying there were other factors which influenced project performance.

### 4.6.2 Test of hypothesis

The hypothesis tested was that institutional characteristics has no significant effect on the performance of climate change adaptation projects in Kenya. The indicators for institutional characteristics were leadership, project implementation structure and use of communication technology. Based on the results in table 15, whose p-value is .000,

confirms that institutional characteristics had a significant effect on the performance of climate change adaptation projects in Kenya.

The construct was founded on the Institutional Theory, developed by John Meyer and Brian Rowan in the 1970s, stipulating that organizations deal with internal processes (such as organizational structures, rules and regulations, norms and routines) as well as external influences (such as cultural differences, customer demands), and thus must learn how to maneuver and adapt to these situations in order to survive. The findings agreed with the theory by confirming that institutional characteristics in particular leadership skills, project implementation structure and use of communication technology affected implementation of climate change adaptation projects in Marsabit and Isiolo counties.

In addition, Eliwa et al., 2022; Fareed et al., 2023; Gasela, 2021; Jabbar & Hussein, 2017b; Lasrado & Kassem, 2020a; Nureni, 2014; Nyong'a and Maina, 2019b in their various studies confirmed that leadership was an institutional characteristic that influenced the performance of organizations either negatively or positively. George, 2020a; Korunovska & Spiekermann, 2021; Raziq et al., 2020b; Roberts, 2010b; Sarhan & Dulaimi, 2022; Shah Nizam, 2017 confirmed through their studies that structures, whether organizational or project greatly affected the outcome of strategy or project implementation.

Use of communication technology was deemed to influence as well as have an impact on the implementation and management of projects, as opined by Afridi et al., 2023; Joshi, 2021b; Krell et al., 2020b; Megha & Zaware, 2019; and Mwangi, 2015b through their various studies on use and impact of technology. The results of the study aligned with the empirical literature reviewed above, that leadership style, project implementation structure and use of communication technology affected the outcome of projects implemented.

### 4.6.3 Resource management

The study intended to establish the extent to which resource management affected the performance of climate change adaptation projects. Resource management has been conceptualized as one of the constructs of strategy implementation, with resource allocation, resource adequacy and resource optimization as its indicators. The descriptive statistics is exhibited in the table 18.

**Table 18**

*Descriptive Statistics for Resource Management*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| To what extent were the necessary resources crucial for implementing the project available to the community members? | 252 | 3.467 | 1.588 |
| How can you rate the quality of the resources given for implementing the project? | 252 | 3.135 | 1.660 |
| How equitably were the resources for implementation of the project distributed to the community members? | 252 | 2.964 | 1.524 |
| As a beneficiary, how satisfied were you with the allocation of the resources? | 252 | 3.433 | 1.616 |
| Were the financial resources provided enough to implement the project? | 252 | 3.810 | 1.468 |
| How competent were the project implementers for successful implementation of the project? | 252 | 3.222 | 1.559 |
| To what extent were tools, machinery and equipment provided for implementation of the project adequate? | 252 | 3.722 | 1.542 |
| Do you agree that adequate communication infrastructure to facilitate implementation of the project were provided? | 252 | 4.187 | 1.168 |
| Project planning was done prior to implementation of the project | 252 | 2.754 | 1.702 |
| Budgeting was done prior to implementation of the project | 252 | 2.762 | 1.696 |
| Utilization of resources was monitored and evaluated at every project stage | 252 | 3.397 | 1.663 |
| Resources were re-allocated from areas they were least required to areas most required | 252 | 3.905 | 1.453 |
| Average | 252 | 3.397 | 1.553 |

*Source: Researcher (2025)*

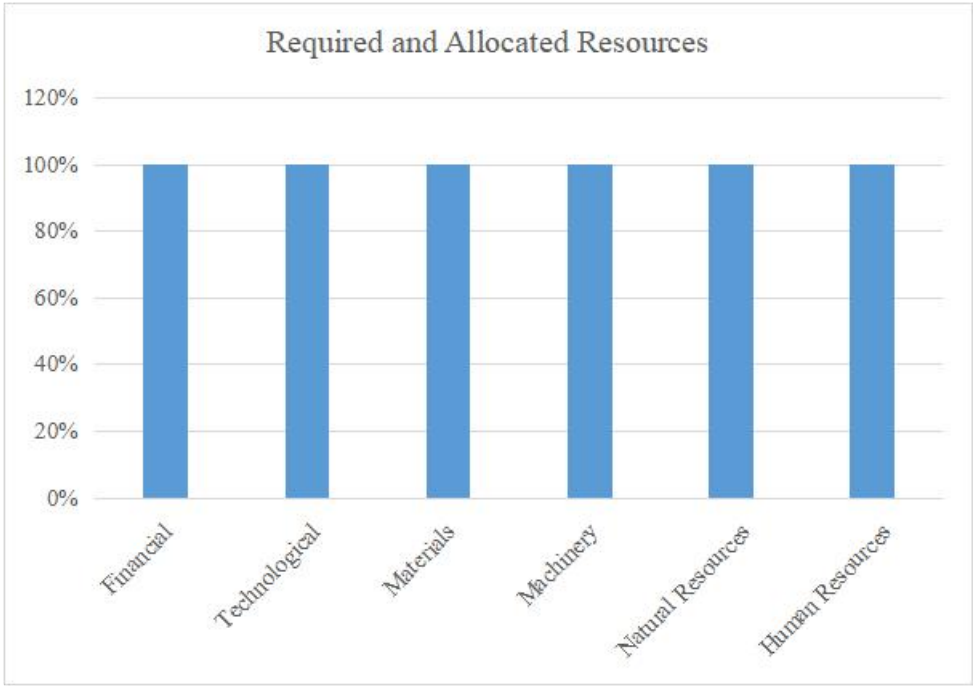
The items on resource management had a mean score range from 4.18, with disagreement that there was adequate communication infrastructure to facilitate

implementation of the project, to 2.75, with respondents agreeing that project planning was carried out prior to implementation of the project. The standard deviation of all items on resource management was low, with the lowest being 1.16 on the item that there was no adequate communication infrastructure to facilitate implementation of the project, and the highest being 1.70, that was adequate communication infrastructure to facilitate implementation of the project. For this variable, the dispersion of the responses was thus low, meaning that most of the respondents had the same opinion about the implementation of the projects.

Interviews were conducted in an effort to understand how resources were managed by the PIs during implementation of the projects. The interviews further sought to understand the challenges experienced by the PIs in relation to management of resources, and how they were resolved.

**Figure 8**

*Resource Allocation by PIs*

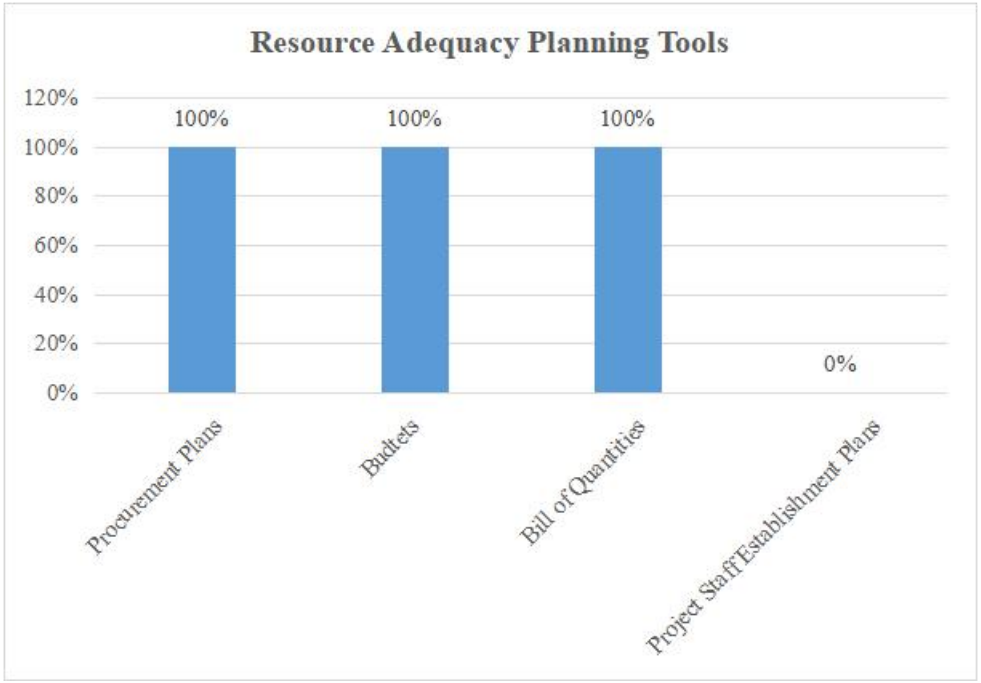



*Source: Researcher (2025)*

100% of the KI interviewed indicated that they required and further allocated financial, technological, materials, machinery, human resource knowledge and skills and natural resources for successful implementation of the projects. The challenges reported by KIs were vandalism of materials and equipment and sabotage by human resources. Vandalism was resolved by making follow-ups of the perpetrators and imposing hefty fines. Human resource sabotage issues were resolved through dialogues, payment of wages for work done and use of intermediaries to resolve stalemates.

**Figure 9**

*Tools for Enhancing Resource Adequacy*



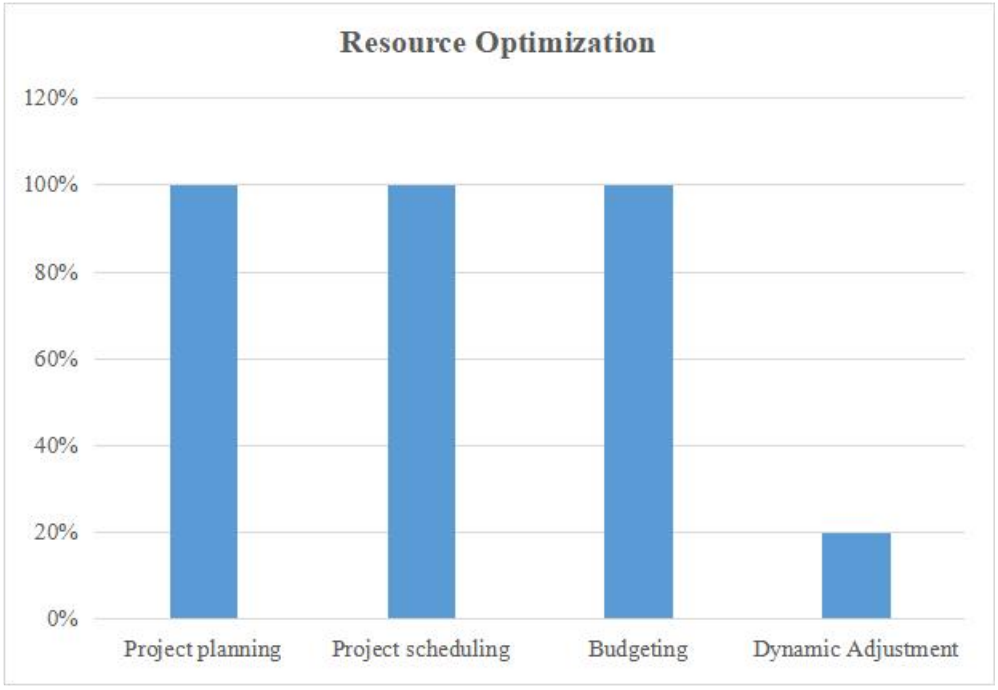

*Source: Researcher (2025)*

The KIs interviewed reported that they used procurement plans, budgets and bill of quantities as tools to guide them in ensuring planning for and adequacy of resources. Despite these careful efforts, the financial resources dwindled during implementation for most of the projects. As a result, completion and maintenance of the projects became impossible. In addition, the agricultural extension officers were very few and could not manage assisting the entire communities effectively. Some of the PIs sought additional

funding from other donors to supplement the deficits. Additional extension officers were proposed for training.

**Figure 10**

*Resource Optimization*

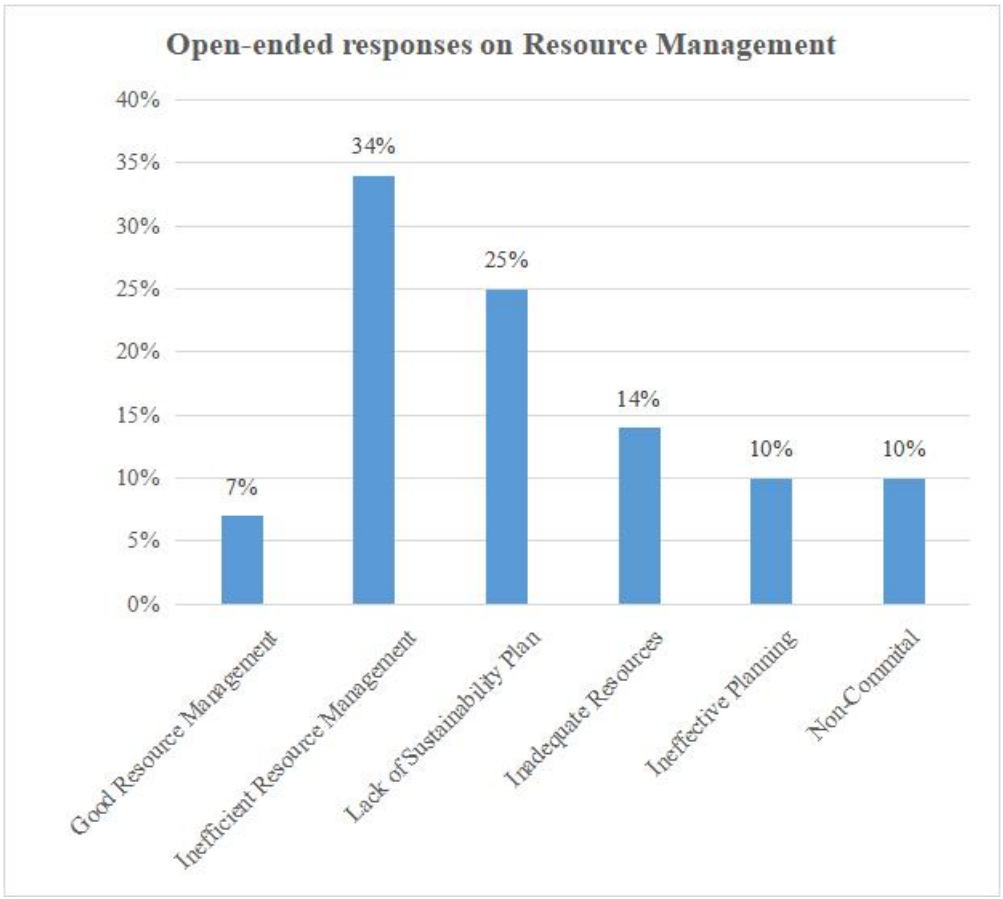



*Source: Researcher (2025)*

The KIs interviewed indicated that they used project planning, project scheduling, and budgeting as tools to ensure that the available resources were utilized optimally. 20% of the KI respondents indicated having used dynamic adjustment as a resource optimization tool. Community needs such as extreme water shortage were adverse, ultimately imposing demands for provision of water kiosks for livestock and domestic use. This challenge was addressed by altering the plans and dynamic adjustment of the resource allocation, to create funds for provision of water kiosks to address water shortage.

**Figure 11**

*Open-Ended Responses on Resource Management*




*Source: Researcher (2025)*

The research sought to know the views of the beneficiaries on how resources were managed during implementation of the projects through open-ended questions. From the data collected 34% of the beneficiaries on the other hand felt that the resources were not effectively managed since they were not adequate for implementation of the projects to completion. 25% of the beneficiaries indicated that the PIs lacked a sustainability plan for the projects, since the implemented projects were handed over to the beneficiaries without allocation of any resources for maintenance or continuity. For example, when the machinery and equipment broke down, they were left to neglect with neither accountability, nor resources for repairs.

10% respondents indicate there was lack of effective planning on implementation of the projects. This was further highlighted whereby one of the projects (Madoadi) entailed excavation of a rain fed water dam, several meters from the irrigation farm. Drips for irrigation had been fitted for irrigation purposes but were never restored after blockage. A different donor funded the project and introduced irrigation through overhead sprinklers, and these too stalled. The beneficiaries indicated that they were left with no option than fetching water from the dam with jerricans to their farms for watering their crops. Only 10% of the respondents indicated that there was effective resource management in implementation of the projects.

Observation of the project sites revealed that only three projects were thriving (kalacha, Khandere and Attan). One of which was a demo farm (Attan). Four of the projects were struggling, with a few activities ongoing at the sites. For example, some parcels had been tended to whilst majority were unattended. Three of the projects were totally bare at the time of data collection (Walda, Oldonyiro and Madoadi). There were a few plastic water tanks in majority of the farms, which from observation could not sustain irrigation projects. Walda project had equipment lying in waste as a result of vandalism. Water was available in majority of the projects since the sources were boreholes and rivers.

**Table 19**

*Correlations for Resource Management*

| | | **Resource Management** | **Project performance** |
|---|---|---|---|
| Resource Management | Pearson Correlation | 1 | .409** |
| | Sig. (2-tailed) | | .000 |
| | N | 252 | 252 |
| Project performance | Pearson Correlation | .409** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 252 | 252 |

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

*Source: Researcher (2025)*

From table 19, resource management had a coefficient of correlation of 0.409, and a significance of .000. There was an average positive correlation between resource management and project performance significance at 0.01 level of significance. This implies that resource management had a fairly average impact on project performance.

**Table 20**

*Coefficients for Resource Management*

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | **B** | **Std. Error** | **Beta** | **T** | **Sig.** |
| 1 | (Constant) | 22.532 | 2.416 | | 9.327 | .000 |
| | Resource Management | .393 | .055 | .409 | 7.096 | .000 |

a. Dependent Variable: Project performance

*Source: Researcher (2025)*

From table 20, the simple linear regression model is $Y = -22.532+0.393x_2$. This shows that resource management significantly and positively influenced project performance (p value=.000). Hence, an increase in resource management by 1 unit leads to a corresponding increase in project performance by 0.393 units holding other factors constant.

**Table 21**

*Analysis of Variance for Resource Management*

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 9417.405 | 1 | 9417.405 | 50.355 | .000[b] |
| | Residual | 46755.024 | 250 | 187.020 | | |
| | Total | 56172.429 | 251 | | | |

a. Dependent Variable: Project performance

b. Predictors: (Constant), Resource Management

*Source: Researcher (2025)*

Table 21 indicates the F value of 50.355 as obtained with a p-value of .000, which suggests that the regression model is statistically significant. The model was thus fit for prediction purposes.

**Table 22**

*Model Summary for Resource Management*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .409[a] | .168 | .164 | 13.67553 |

a. Predictors: (Constant), Resource Management

*Source: Researcher (2025)*

From table 22, the Adjusted R Squared is 0.168, which implies that the variability in resource management explains 16.8% of the variability in project performance. Thus, resource management alone has a poor effect in explaining project performance, implying there were other factors which influenced project performance.

### 4.6.4 Test of hypothesis

The hypothesis tested was that resource management (with resource allocation, resource adequacy and resource optimization as indicators) has no significant effect on the performance of climate change adaptation projects in Kenya. Based on the results in table 20 whose p-value is .000, the study confirms that resource management had a significant effect on project performance of climate change adaptation projects in Kenya. The construct was founded on the Resource Based View Theory, (Barney, 2000), which argued that organizations required strategic resources (including land, equipment, knowledge skills among others) to be able to enjoy competitive advantage, for example ability to add value to goods or services. The findings agreed with the theory by confirming resource allocation, resource adequacy and resource optimization, which were elements of resource management studied, affected implementation and performance of implemented projects.

Studies by Lavu and Maina, 2019b; Muthiora and Moronge, 2018b; and Sathvara, 2023 confirmed that allocation of resources was crucial for successful performance of projects. Densford et al. (2018) in their study pointed out that project resource mobilization had a significant effect on projects performance. A study by Ouma and Kamaara, (2018) brought to light the importance of resource allocation as well as resource optimization for successful implementation of projects. Chepng'eno and Kimutai (2021) emphasized that whereas resource allocation was important for successful performance of projects, the resources needed to be proper and sufficient. A study by (Edokpolor & Dumbiri, 2019; Lavu & Maina, 2019b) confirmed that resource allocation, resource adequacy and resource optimization were drivers to successful implementation of strategies.

In addition, Kiprop (2017); Koyi et al. (2021); Liang et al. (2021) in their various studies showed that resource optimization had an impact on the performance of strategies and projects. The results of the study aligned with the empirical literature reviewed above, that resource allocation, resource adequacy and resource optimization affected the outcome of projects implemented.

### 4.6.5 Stakeholder participation

The study intended to establish the extent to which stakeholder participation affected the performance of climate change adaptation projects. Stakeholder participation has been conceptualized as one of the constructs of strategy implementation, with inclusivity in decision making, community capacity building and community culture as its indicators. The descriptive statistics is exhibited in the table 23.

**Table 23**

*Descriptive Statistics on Stakeholder Participation*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| How important did the PIs view your opinions in the implementation of the project? | 252 | 3.881 | 1.489 |

| | | | |
|---|---|---|---|
| How often did the PIs use the indigenous knowledge offered by the beneficiaries in implementing the project? | 252 | 3.921 | 1.432 |
| To what extent did the PIs inform you of the project funding and involve you in budgeting process? | 252 | 4.234 | 1.173 |
| To what extent were you involved in the planning stage of the project implementation? | 252 | 3.814 | 1.597 |
| To what extent were you satisfied that you were taught the necessary knowledge and skills to help you continue running the project on your own after handing over to the beneficiaries? | 252 | 3.845 | 1.547 |
| Do you agree that demonstrations on how to carry out the project were done satisfactorily? | 252 | 3.849 | 1.541 |
| How often were you re-trained on knowledge and skills necessary for implementation of the project? | 252 | 3.833 | 1.568 |
| To what extent were you empowered on how to mobilize for resources for continuity once the project was handed over to the beneficiaries? | 252 | 3.992 | 1.354 |
| To what extent does the community have different roles for men and women? | 252 | 1.548 | .871 |
| Do you agree that women were allowed to own property/ land in the community? | 252 | 4.321 | 1.310 |
| To what extent does the community engage in pastoralism as the major economic activity? | 252 | 1.310 | .535 |
| Do community members own property such as land in groups? | 252 | 1.401 | .829 |
| Average | 252 | 3.329 | 1.272 |

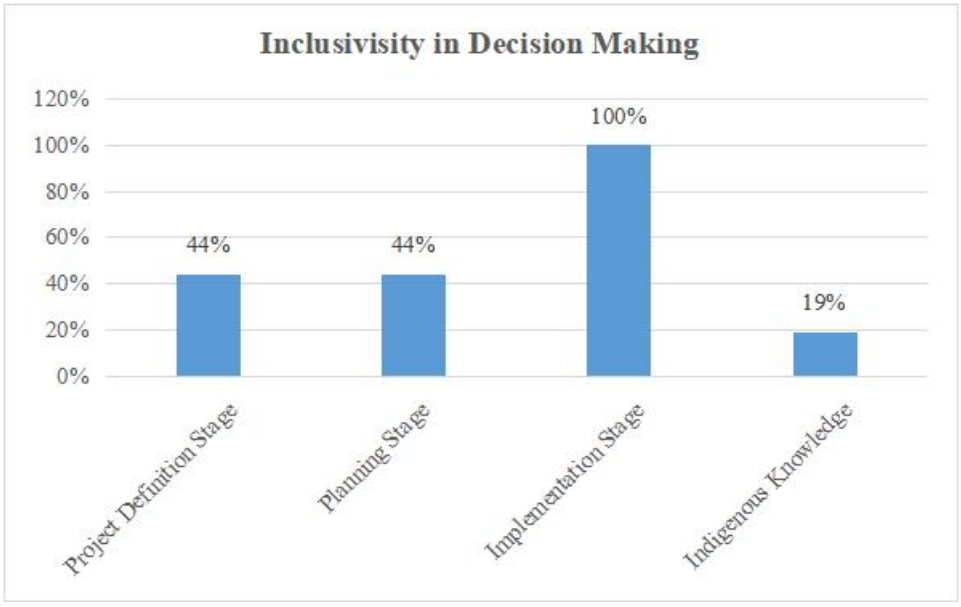
*Source: Researcher (2025)*

The items on stakeholder participation had a mean score range from 1.30, with respondents indicating that the communities engaged in pastoralism as the major economic activity at a very large extent to 4.32, with respondents disagreeing that women were allowed to own property in the project communities. The standard deviation of all items on stakeholder participation was low, with the lowest being 0.53 on the item that the communities engaged in pastoralism as the major economic activity, and the highest being 1.59, on the community involvement in planning stage for implementation of the project. For this variable, the dispersion of the responses was thus low, meaning that most of the respondents had the same opinion about the implementation of the projects.

Interviews were conducted in an effort to understand how stakeholder participation was encompassed in implementation of the projects. The interviews conducted further sought to understand the challenges experienced by the PIs in relation to stakeholder participation, and how they were resolved.

**Figure 12**

*Inclusivity in Decision Making*



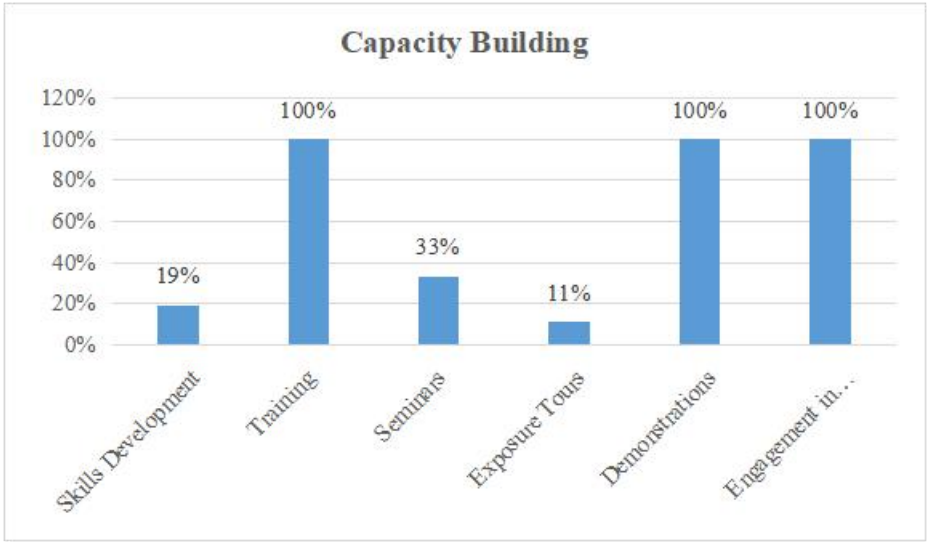

*Source: Researcher (2025)*

The interviews carried out indicated that the 100% of the projects involved the stakeholders at the project implementation stage only. Only 19% of the respondents indicated having utilized the indigenous knowledge possessed by the beneficiaries. This indigenous knowledge involved traditional methods of pest and diseases control such as use of chilli pepper, neem tree extracts, garlic, ash, aloe vera and sheep urine. Another community excavates wells to collect rain water, for use during the dry seasons. 44% of the respondents indicated that they had involved the beneficiaries during project definition stage, and planning stage. Attitudinal challenges were encountered by the KIs during implementation of the project. This was because most of the pastoralists communities had low value for farming. This challenge was addressed through constant

sensitizations and involvement of the local administration to bridge the gap between KIs and beneficiaries' points of view.

**Figure 13**

*Community Capacity Building*

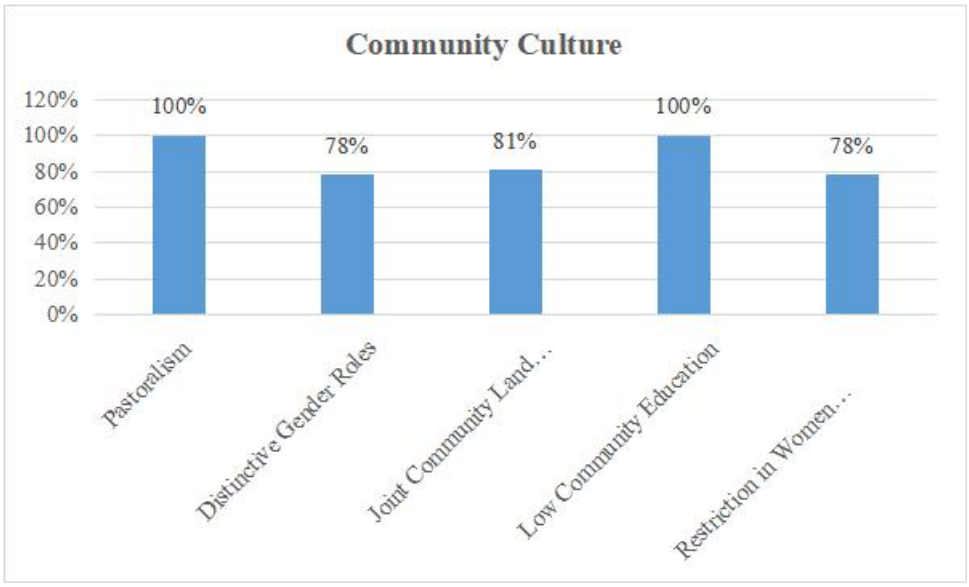



*Source: Researcher (2025)*

100% of the KIs interviewed indicated that they carried out training, demonstrations on farming practices and involved the beneficiaries in the implementation works. 33% of the KIs informed the study that they facilitated their beneficiaries to attend seminars. 11% indicated that they facilitated their beneficiaries to exposure tours. Only 19% had managed to develop their beneficiary skills during implementation of the projects. The KIs also indicated that they experienced a challenge since some beneficiaries were not willing to learn new practices, whereas others were plainly lazy. They addressed this challenge by persistent sensitization, and involvement of the local authorities as liaison with community members.

**Figure 14**

*Community Culture*

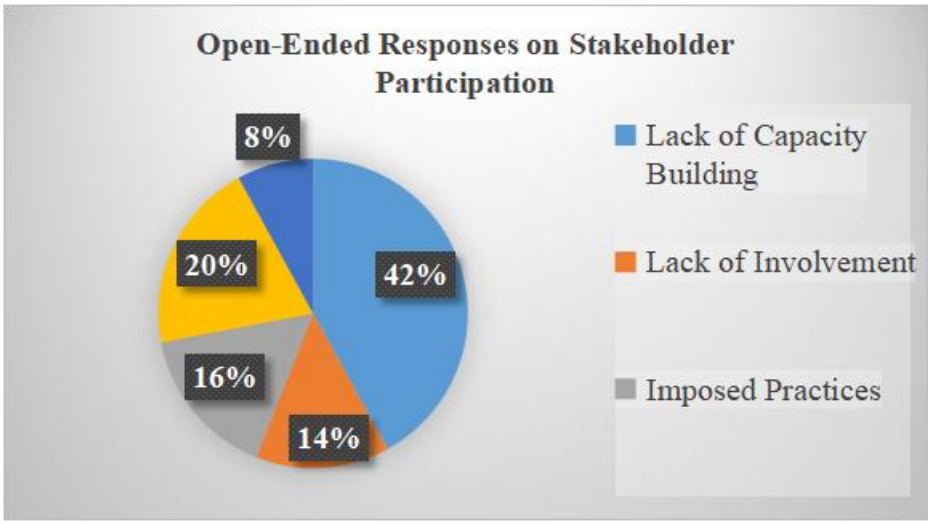



*Source: Researcher (2025)*

Data collected from the KIs showed that the communities where these projects were implemented had entrenched cultural practices which affected implementation of the projects. All the communities were traditionally pastoralists, and there were low levels of education in the communities, with demographics showing majority were primary school level and below. 81% of the KIs indicated that land ownership was communal. 78% of the KIs pointed out that they experienced challenges due to distinctive gender roles and that there was restriction of property ownership by women. It was the custom of men in most of the beneficiary communities to sit under tree shades from morning to dusk, playing 'Bao', an African board game. Women were the providers for their families, tended to home chores, and carried out difficult tasks such as construction of the family shelters. The men claimed that since they had paid dowry for the women, they were merely objects for them to use as they pleased. The KIs endeavored to address these challenges through sensitizations and involvement of local administration.

**Figure 15**

*Open-Ended Responses on Stakeholder Participation*




*Source: Researcher (2025)*

Through the open-ended questions, 42% of the beneficiaries indicated that they lacked adequate capacity building. Some indicated that the capacity building initiatives were offered to only a few representatives, who were required to cascade the knowledge and skills learnt to the rest of the beneficiaries. The beneficiaries generally felt that they were not taken through adequate training and skills impartation. They were left on their own to navigate on a venture which they lacked technical know-how.

Data collected through observation showed that the beneficiaries frowned upon farming practices. Responses such as "In our community, anybody undertaking farming is viewed as very poor. Wealth was measured by the number of livestock a person owns", were received, an indication that majority of the beneficiaries despised farming. At the time of data collection, it was observed that clearly majority of the beneficiaries lacked farming knowledge and skills, an indication that capacity building was not carried out satisfactorily. Sheer ignorance was demonstrated by one of beneficiary who upon finding that the few stems (they were less than 20 in total) of sunflower she had planted had flowered, asked when oil would start dripping so that she could collect. In addition,

seven out of ten beneficiary communities totally lacked farming knowledge and skills. Only two of the communities previously engaged in rain fed farming, and they too lacked knowledge on horticultural farming.

From observation, entrenched traditional practices were still evident. Most of the few parcels being tended to belonged to women. Majority of the parcels that were neglected and bare belonged to men.

**Table 24**

*Correlations for Stakeholder Participation*

| | | **Stakeholders Participation** | **Project performance** |
|---|---|---|---|
| Stakeholders Participation | Pearson Correlation | 1 | .982** |
| | Sig. (2-tailed) | | .000 |
| | N | 252 | 252 |
| Project performance | Pearson Correlation | .982** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 252 | 252 |

**. Correlation is significant at the 0.01 level (2-tailed).
*Source: Researcher (2025)*

From table 24, stakeholder participation had a coefficient of correlation of 0.982, and a significance of .000. There was a fairly strong positive correlation between stakeholder participation and project performance at 0.01 level of significance. This implies that stakeholder participation impacted very strongly project performance.

**Table 25**

*Coefficients for Stakeholder Participation*

**Coefficients[a]**

| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | | |
|---|---|---|---|---|---|---|
| | | **B** | **Std. Error** | **Beta** | **T** | **Sig.** |
| 1 | (Constant) | -14.152 | .660 | | -21.436 | .000 |
| | Stakeholders Participation | 1.319 | .016 | .982 | 82.859 | .000 |

a. Dependent Variable: Project performance
*Source: Researcher (2025)*

From table 25 the simple linear regression model is Y = -14.152+1.319$x_3$. This shows a perfect relationship between that stakeholder participation positively influenced project performance (p value=.000). Hence, an increase in stakeholder participation by 1 unit leads to a corresponding increase in project performance by 1.319 units holding other factors constant.

**Table 26**

*Analysis of Variance for Stakeholder Participation*

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 54198.856 | 1 | 54198.856 | 6865.575 | .000[b] |
| | Residual | 1973.573 | 250 | 7.894 | | |
| | Total | 56172.429 | 251 | | | |

a. Dependent Variable: Project performance
b. Predictors: (Constant), Stakeholders Participation
*Source: Researcher (2025)*

Table 26 indicates the F value of 6865.575 as obtained with a p-value of .000, which suggests that the regression model is statistically significant. The model was thus fit for prediction purposes.

**Table 27**

*Model Summary for Stakeholder Participation*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .982[a] | .965 | .965 | 2.80968 |

a. Predictors: (Constant), Stakeholders Participation
*Source: Researcher (2025)*

From table 27, the Adjusted R Squared is 0.965, which implies that the variability in stakeholder participation explains 96.5% of the variability in project performance. Thus, stakeholder participation alone has a very strong fit in explaining project performance, implying there were other factors which influenced project performance.

### 4.6.6 Test of hypothesis

The hypothesis tested was that stakeholder participation (with inclusivity in decision making, community capacity building and community culture as indicators) has no significant effect on the performance of climate change adaptation projects in Kenya. Based on the results in table 25, the p-value of .000 confirms that stakeholder participation had a significant effect on project performance of climate change adaptation projects in Kenya.

The construct was founded on the Stakeholder Theory, developed by F. Edward Freeman, which argued that organizations had obligations to its stakeholders, and for long-term success, a business needed to work on maintaining stakeholder satisfaction. The theory agreed with the results of this study which showed that PIs who involved stakeholders in implementation of the projects resulted in successful implementations. The projects whose KIs sought their opinions and inputs brought a sense of ownership to them, hence making the projects and changes acceptable, and ultimately, enhancing the sustainability of the projects.

Most of the beneficiaries of these projects were in purely pastoralists communities, and had no prior knowledge or skills of farming whatsoever. They had no know-how of holding a jembe or tilling land. The PIs who built beneficiaries capacity empowered them with the right attitudes, skills and knowledge, about agricultural, agro-pastoralism and economic practices. In addition, PIs who took time to understand and respect the community culture were able to implement projects that were embraced by the communities.

In agreement with this study, Artur (2016); and Mkonda (2022) in their studies noted that exclusion of stakeholders in decision making impacted the projects performance negatively. Further, Ndirangu and Shisia (2016) brought out in his study that involving

stakeholders in projects through capacity building, dissemination of information etc was expected to result in harmonious implementation of the projects. Ndirangu and Shisia (2016), and Khatibi et al., (2021) emphasized that stakeholders were endowed with indigenous resources that could enrich resources found with donors.

Kalisa and Gathiru, 2023; Lucrezi et al., 2019b; Mwanzia et al., 2022; Okide, 2020b; Zimmermann et al., 2012b emphasized that capacity building of stakeholders had an impact on the performance of projects since when carried out, the stakeholders felt empowered, projects would be more readily accepted and they would be imparted with skills that would see sustainability of the projects. A study by Atela et al., 2018b; Battistella et al., 2023; Evans, 2022; Luong and Watanabe, 2017; Osobajo et al., 2025 showed that community culture had an impact on performance of projects. The empirical literature reviewed above, aligned with the results of this study, which showed the impact of inclusivity in decision making, capacity building and community culture as influencing effective implementation of climate change adaptation projects.

### 4.6.7 Regulatory framework

The study intended to establish the extent to which Regulatory Framework affected the performance of climate change adaptation projects. Regulatory Framework has been conceptualized as one of the constructs of strategy implementation, with government policies, community agreements and donor intent as its indicators. The descriptive statistics is exhibited in the table 28.

**Table 28**

*Descriptive Statistics on Regulatory Framework*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| To what extent was it easy to acquire the government licenses required for the implementation of the project? | 252 | 1.393 | .558 |
| To what extent was it easy to acquire government permits required for implementation of the project? | 252 | 1.377 | .502 |

| | N | Mean | Std. Deviation |
|---|---|---|---|
| How often did the government procurement procedures hinder implementation of the project? | 252 | 4.496 | .835 |
| How often did the government financial policies interfere with implementation of the project? | 252 | 4.476 | .770 |
| To what extent did the PIs commit to contribute to the beneficiary community through charity work? | 252 | 4.119 | 1.276 |
| How often did the PIs employ the local community members in the implementation of the project? | 252 | 1.417 | .642 |
| Do you agree that the project contributed to the improvement of the infrastructure of the local community? | 252 | 4.508 | .963 |
| To what extent did the project implementation protect the local environment and natural resources surrounding the community? | 252 | 3.778 | 1.520 |
| To what extent did the donor require involvement of the beneficiaries in implementing the project? | 252 | 3.183 | 1.792 |
| Did the donors stipulate the amount of funds that could be utilized on community outreach? | 252 | 4.425 | 1.190 |
| To what extent did the donor require periodic reports on how the money was being utilized? | 252 | 1.397 | .559 |
| Do you agree that the donors stipulated how funds would be utilized in implementation of the project? | 252 | 1.302 | .477 |
| **Average** | **252** | **2.989** | **.924** |

*Source: Researcher (2025)*

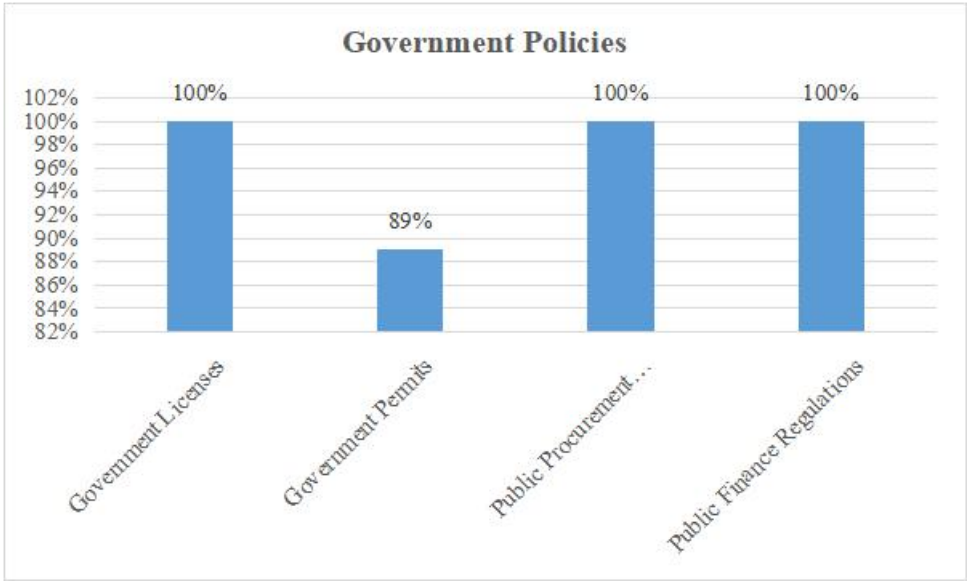
The items on regulatory framework had a mean score range from 4.50, with respondents strongly disagreeing that the projects contributed to the improvement of the local community infrastructure, to 1.30, with respondents strongly agreeing that the donors stipulated how funds would be utilized in implementation of the project. The standard deviation of all items on regulatory framework was low, from 0.47 on stipulation of how funds would be utilized in implementation of the project, and the highest being 1.79, on the extent to which the donors required involvement of the beneficiaries in implementing the project. For this variable, the dispersion of the responses was thus low, meaning that most of the respondents had the same opinion about the implementation of the projects.

Interviews were conducted with the aim of understanding the effects of regulatory framework in implementation of the projects, viz government policies that were adhered to, the CBAs entered into and conditionalities given by the donors. Further information

was sought on any challenges experienced associated with regulatory framework, and how they were resolved. The general views on regulatory framework in regard to implementation was also sought from the respondents through open-ended questions.

**Figure 16**

*Government Policies*

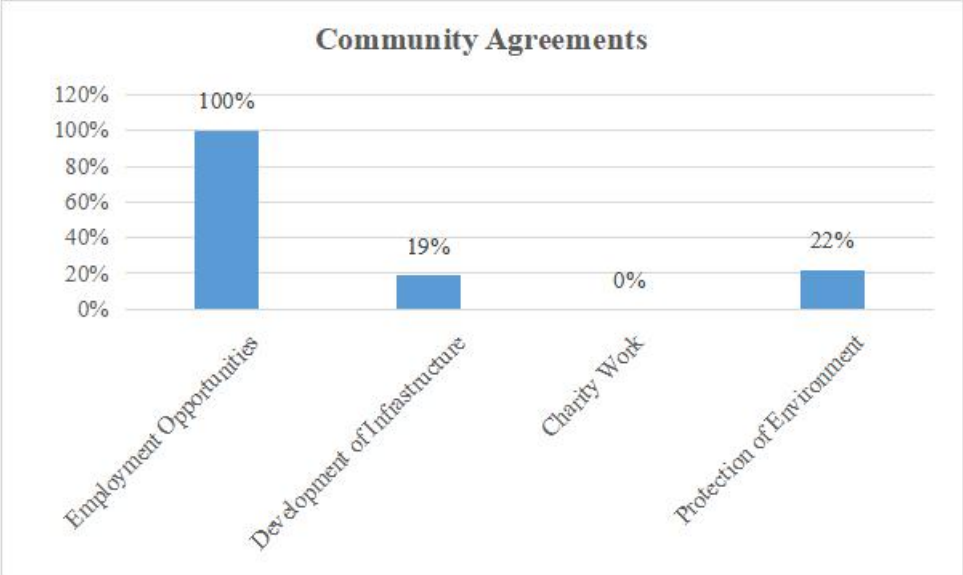



*Source: Researcher (2025)*

All the KIs indicated that they required various government licenses such as EIA licenses since they included use of natural resources. In addition, 89% of the projects indicated that they were required to acquire WARMA permits since they were dealing with water and irrigation. The one exceptional project had been implemented before commencement of WARMA requirements. All the KIs also indicated that there were requirements on adherence to PPOA practices and adherence to financial regulations, since they were implemented in collaboration with the government. Nevertheless, the study gathered that all the projects did not experience any hindrances when sourcing for the licenses and permits, as well as during procurement and financial reporting. This was because the projects were all implemented in collaboration with the county governments, and some further included the national government.

**Figure 17**

*Community Agreements*

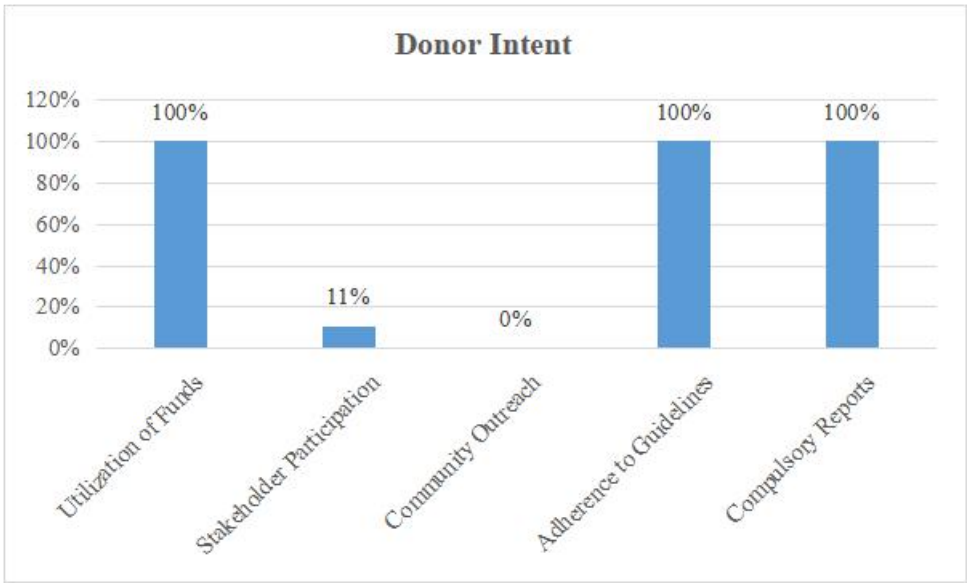



*Source: Researcher (2025)*

Data collected through interviews indicated that all the projects had an agreement to create employment opportunity to the community members during implementation of the project. The jobs offered to the community however were unskilled casual labour jobs such as excavation of dams, clearing of bushes, digging of trenches among others. Only 19% of the KIs reported on having improved road infrastructure (marram roads), to enable accessibility of the project sites. 22% reported that they undertook protection of the environment. One project had prohibited felling of trees and clearing of bushes, and any culprits found were fined KES10,000 for each tree felled. At the time of data collection, that community was surrounded by shrubs and acacia trees, a contrast to the bare lands in the surrounding communities. A second project had embarked on tree planting along the banks of the river that fed their irrigation practices.

**Figure 18**

*Donor Intent*

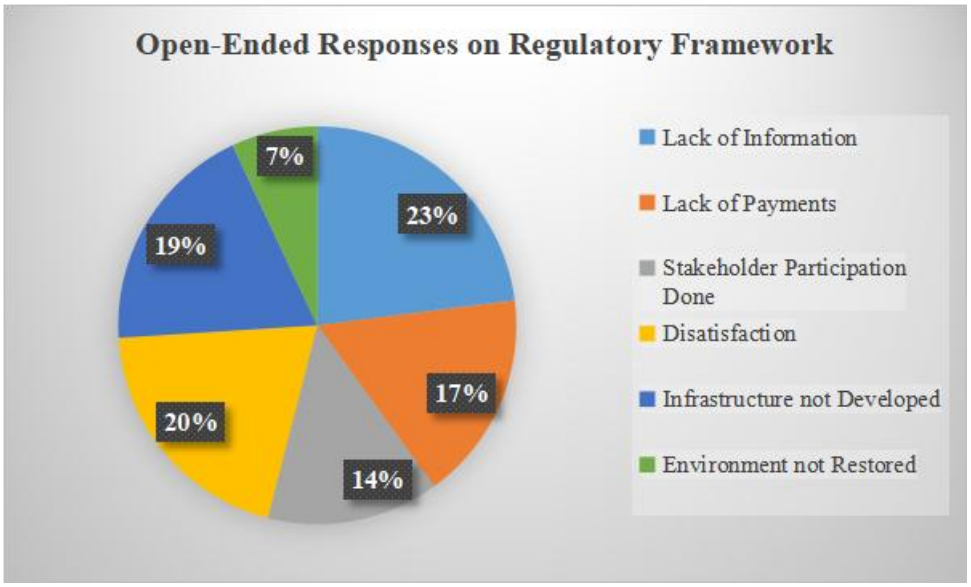



*Source: Researcher (2025)*

Data collected from KIs through interviews indicated that all the projects had been required by their donors to send periodic, mainly quarterly reports on the implementation of the projects. All the projects had also been required to adhere to approved utilization of funds (mainly guided by budgets and bill of quantities). 11% of the KIs reported that they had been required by the donors to give evidence of having undertaken stakeholder participation in implementation of the project.

**Figure 19**

Open-Ended Responses on Regulatory Framework




*Source: Researcher (2025)*

Data collected from the beneficiaries through open-ended questions indicated that majority had not been privy to the contents of the community agreements, the budgets and their allocations and financial reports. Whereas the PIs never experienced significant hurdles in relation to regulatory framework indicators, the beneficiaries on the other hand indicated their dissatisfaction. Some respondents claimed that they were not paid for their labour rendered after completion of the project. Only a handful of respondents indicated that stakeholder participation was undertaken.

Data collected through observations showed reactions of dissatisfaction displayed by the beneficiaries. One project had mounds of soil that had been excavated for provision of a dam. The soil was not leveled after completion of works, but was left in heaps.

**Table 29**

*Correlations for Regulatory Framework*

| | | Regulatory Framework | Project performance |
|---|---|---|---|
| Regulatory Framework | Pearson Correlation | 1 | .783** |
| | Sig. (2-tailed) | | .000 |
| | N | 252 | 252 |
| Project performance | Pearson Correlation | .783** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 252 | 252 |

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

*Source: Researcher (2025)*

From table 29, regulatory framework had a coefficient of correlation of 0.783, and a significance of .000. There was a high positive correlation between regulatory framework and project performance at 0.001 level of significance. This implies that regulatory framework highly impacted project performance.

**Table 30**

*Coefficients for Regulatory Framework*

**Coefficients[a]**

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | T | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | -46.473 | 4.315 | | -10.771 | .000 |
| | Regulatory Framework | 2.370 | .119 | .783 | 19.891 | .000 |

a. Dependent Variable: Project performance

*Source: Researcher (2025)*

From table 30 the simple linear regression model is $Y = -46.473+2.370x_4$. This shows that regulatory framework significantly and positively influenced project performance (p value=.000). Hence, an increase in regulatory framework by 1 unit leads to a corresponding increase in project performance by 2.370 units holding other factors constant.

This shows that resource management significantly and positively influenced project performance Hence, an increase in resource management by 1 unit leads to a

corresponding increase in project performance by 0.393 units holding other factors constant.

**Table 31**

*Analysis of Variance for Regulatory Framework*

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 34421.678 | 1 | 34421.678 | 395.638 | .000[b] |
| | Residual | 21750.750 | 250 | 87.003 | | |
| | Total | 56172.429 | 251 | | | |

a. Dependent Variable: Project performance
b. Predictors: (Constant), Regulatory Framework

*Source: Researcher (2025)*

Table 31 indicates the F value of 395.638 as obtained with a p-value of .000, which suggests that the regression model is statistically significant. The model was thus fit for prediction purposes.

**Table 32**

*Model Summary for Regulatory Framework*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .783[a] | .613 | .611 | 9.32754 |

a. Predictors: (Constant), Regulatory Framework

*Source: Researcher (2025)*

From table 32, the Adjusted R Squared is 0.611, which implies that the variability in regulatory framework explains 61.1% of the variability in project performance. Thus, regulatory framework alone has a strong effect in explaining project performance, implying there were other factors which influenced project performance.

### 4.6.8 Test of hypothesis

The hypothesis tested was that regulatory framework (with government policies, community agreements and donor intent as indicators) has no significant effect on the performance of climate change adaptation projects in Kenya. Based on the results in

table 30, the p-value is .000, which confirms that regulatory framework had a significant effect on project performance of climate change adaptation projects in Kenya

The construct was founded on Path Dependency Theory, Stack and Gartland (2003), which places an emphasis on "history matters', by clarifying why organizations use historical preferences of a product or practice. The three regulatory framework indicators for this study are informed by historical practices of organizations. In line with the theory, the results of this study confirmed that government policies, community bargaining agreements and donor intent that were applied by the various projects were mainly procedures and requirements that used over the years in the country. Historical preferences as opposed to new approaches was the norm.

In addition, Amuyunzu and Kisimbii 2021; Gao 2016; Pedo 2018; and Renner 2020 opined in their studies that the rigidity and complexities of acquiring government policies such as procurement and financial, government licenses and procedures such as EIA, had a negative impact on project performance. Flyen et al. (2018) and Hirpha et al. (2021) pointed out the importance of incorporating regulatory frameworks into government policies and climate change resilience and adaptation projects since they to aid in successful implementation of the projects. Janssen-Jansen and van der Veen 2017; Keenan et al. 2014; Mullins and Wambayi 2017; Rodgers 2021; Rose and Haggerty 2019 confirmed that community agreements contributed to mutual understanding of the project between the implementers and the communities where the projects are implemented, and in turn has an impact on the performance of these projects.

In addition, Cain, 2014; Helge, 2018b; and Schmitz, 2006 in their studies opined that donor intent had a delicate effect on implementation of projects, which is a confirmation that project performance is affected by donor intent. The results of this study aligned with the empirical literature reviewed above, government policies, community

bargaining agreements and donor intent, which were factors of regulatory framework studies, affected the outcome of projects implemented.

### 4.6.9 Climate change factors and effects

The study intended to establish the extent to which the moderating variable of climate change factors and effects affected the performance of climate change adaptation projects. Climate change factors and effects was a moderating variable and seasonal variations, extreme weather conditions and drought were its indicators. The descriptive statistics is exhibited in the table 33.

**Table 33**

*Descriptive Statistics on Climate Change Factors and Effects*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| To what extent did the rains fail to come at the expected time during implementation of the project? | 252 | 1.286 | .526 |
| How frequently did the dry season prolong during implementation of the project? | 252 | 1.278 | .523 |
| To what extent did wild fires break in the community? | 252 | 4.191 | 1.367 |
| How often were heat waves experienced during implementation of the project? | 252 | 1.365 | .681 |
| To what extent did the rains exceed during implementation of the project? | 252 | 3.798 | 1.583 |
| Do you agree that dry weather conditions exceeded during implementation of the project? | 252 | 1.258 | .465 |
| How often did the temperatures rise exceedingly during implementation of the project? | 252 | 1.377 | .695 |
| To what extent did drought conditions affect the implementation of the project? | 252 | 1.429 | .856 |
| How often did drought occur in the region? | 252 | 1.365 | .681 |
| To what extent did drought cause reduced livestock population? | 252 | 1.214 | .439 |
| Do you agree that drought caused high rates of malnutrition in the community? | 252 | 1.155 | .384 |
| To what extent did drought cause death of people? | 252 | 4.254 | 1.197 |
| Average | 252 | 1.998 | .783 |

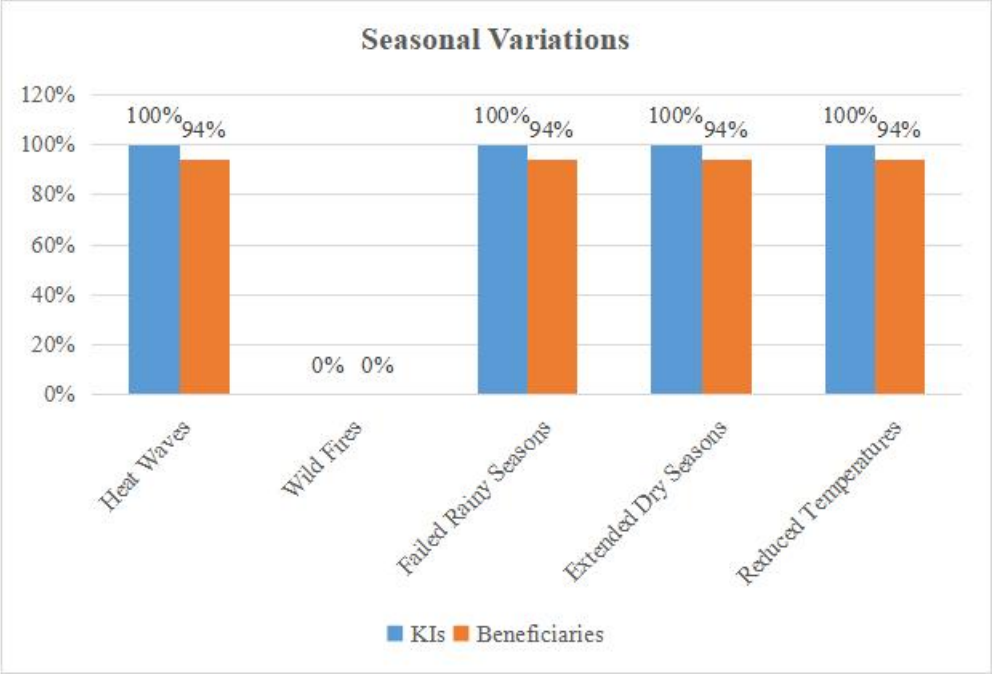
*Source: Researcher (2025)*

The items on climate change factors and effects had a mean score range from 4.25, with respondents indicating that drought caused death of people to a low extent, to 1.15, with

donors strongly agreeing that drought caused high rates of malnutrition in the community. The standard deviation of all items on climate change factors and effects was low, from 0.38 on the item that drought caused high rates of malnutrition in the community, and the highest being 1.58, on the extent to which rains exceeded during implementation of the projects. For this variable, the dispersion of the responses was thus low, meaning that most of the respondents had the same opinion about the implementation of the projects. Interviews were conducted with the aim of understanding the factors and effects of climate change in implementation of the projects, with indicators of seasonal variations, extreme weather conditions and drought. Further information was sought on any challenges experienced during implementation, that was associated with climate change factors and effects, and how they were resolved. The general views on climate change factors and effects in regard to implementation was also sought from the respondents through open-ended questions.

**Figure 20**

*Seasonal Variations*



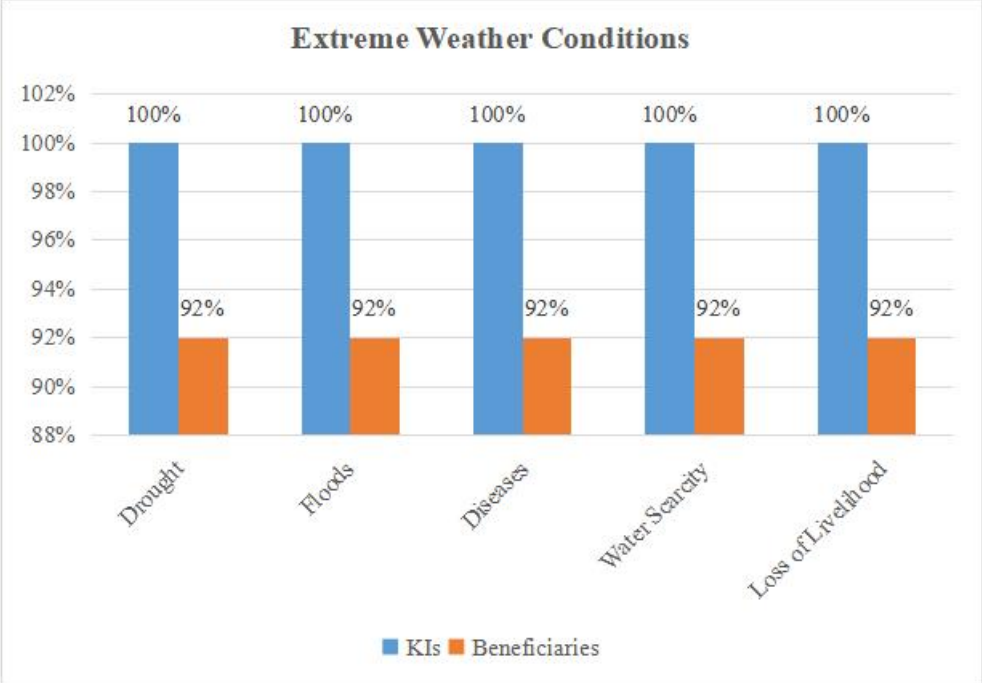

*Source: Researcher (2025)*

100% of the KIs interviewed and 94% of beneficiaries who filled questionnaires indicated that failed rainy seasons, extended dry seasons and reduced temperatures were experienced as a result of seasonal variations during implementation of the projects. Responses from both KIs interviews and open-ended questions filled by beneficiaries indicated that seasonal variations caused reduced crop yields, increased soil erosion, increased food prices, reduced livestock population and invasion of pests and diseases. The pests and diseases listed were locust invasion, east coast fever and pneumonia in livestock. The respondents further indicated that there were increased cholera outbreaks in human beings, caused by the decomposing livestock carcasses.

Data collected through observation indicated an extended dry season and extremely high temperatures in all the projects visited.

**Figure 21**

*Extreme Weather Conditions*




*Source: Researcher (2025)*

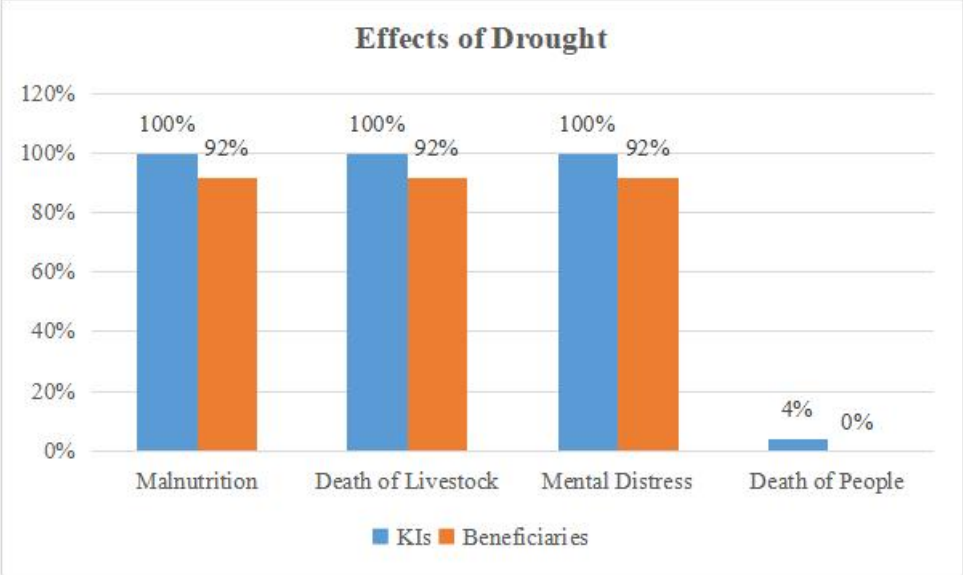
100% KIs interviewed and 92% of beneficiaries who filled open-ended questions concurred that extreme weather conditions, which was mainly prolonged dry seasons and

increased rainfall whenever it rained, caused drought, floods, diseases, water scarcity and loss of livelihoods. Water levels in rain fed dams often reduced drastically, resulting in conflicts between livestock herders and beneficiaries of irrigation projects, and being pastoralist communities, herders always carried the day, and the farms would be left to ruins. The few instances where it rained in these studied regions, always often resulted in floods, which would cause soil erosion and sweep away the crops in farms. 8% of the beneficiaries were non-committal.

Data collected through observation indicated prolonged drought and water scarcity. Food was expensive at the eateries. Water levels from dams and rivers were low and people were competing for water with livestock. The quality of water in the dams seemed low.

**Figure 22**

*Effects of Drought*




*Source: Researcher (2025)*

100% KIs interviewed and 92% of beneficiaries who filled open-ended questions concurred that drought caused increased levels of malnutrition, death of livestock and mental distress to the communities. 4% of the KIs indicated that one community

suffered the loss of two human lives as a result of prolonged drought. The beneficiaries differed in this view with a zero indication on loss of lives.

Challenges due to the effects of climate change were experienced during the implementation of the projects. The KIs indicated that some beneficiaries would fail to turn up for the unskilled jobs that had been offered to the community due to hunger and the extreme weather conditions. To boost job attendance, the KIs offered wages for the work rendered.

The data collected through observation showed mental distress to the beneficiaries, which was noted from the emotions expressed. Ordeals experienced as a result of the prolonged drought were expressed. Respondents indicated that they lost 95% to 100% of their livestock leaving them poor and desolate. Majority of the project sites were bare, with nothing growing at the farms. A few projects had scanty crops growing in the farms of the resilient ones. Few projects had a few activities going on from a handful of beneficiaries.

**Table 34**

*Correlations for Climate Change Factors and Effects*

| | | **Climate Change Factors and Effects** | **Project performance** |
|---|---|---|---|
| Climate Change Factors and Effects | Pearson Correlation | 1 | -.171** |
| | Sig. (2-tailed) | | .006 |
| | N | 252 | 252 |
| Project performance | Pearson Correlation | -.171** | 1 |
| | Sig. (2-tailed) | .006 | |
| | N | 252 | 252 |

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

*Source: Researcher (2025)*

From table 34, climate change factors and effects had a coefficient of correlation of -.171, and a significance of .006. There was a weak negative correlation between climate change factors and effects and project performance at 0.01 level of significance. This implies that the more climate change factors and effects is affected, the poorer the performance of the project.

### 4.6.10 Test of hypothesis

The hypothesis tested the moderating variable, that climate change factors and effects significantly affected the relationship between strategy implementation and performance of climate change adaptation projects in Kenya. Based on the results in table 32, the study confirms the hypothesis.

The construct was founded on Theory of Change by Peter Drucker, which emphasizes that actions made as part of an initiative should result in an ultimate outcome. Theories of change assist societies in coping with social changes, and climate change has impacted the society highly, as established by this study. The theory therefore was in agreement with the study findings.

Ayal et al. 2018b; Cuni-Sanchez et al. 2019b; Guto 2021b; Mcleod et al. 2019b; Monastyrnaya et al. 2024; Ndayiragije and Li 2022; Reed et al. 2015b; Watson et al. 2016b; and Webb et al. 2017b in their studies confirmed that climate change factors affected the performance of implemented climate change adaptation projects. They also pointed out that the local communities were endowed with indigenous ways of adapting to climate change, which could be incorporated in mainstreaming practices to enhance climate change adaptation projects. The results of this study showed the effect of seasonal variations, extreme weather conditions and drought on project performance, and therefore aligned with the empirical literature reviewed above.

Bearing in mind the results of the multiple linear regression analysis, the study confirmed the hypothesis because the variables, institutional characteristics, resource management, stakeholder participation and regulatory framework were confirmed to have a significant effect on project performance.

### 4.6.11 Project performance

The study intended to establish the extent to which project performance was affected by strategy implementation, with constructs on institutional characteristics, resource management, stakeholder participation, regulatory framework and climate change factors and effects which was a moderating variable. Project performance has been conceptualized as the dependent variable of this study, with inclusivity in decision making, community capacity building and community culture as its indicators. The descriptive statistics is exhibited in the table 35.

**Table 35**

*Descriptive Statistics on Project Performance*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| Food productivity was increased as a result of the implemented project | 252 | 3.881 | 1.478 |
| Beneficiaries acquired new knowledge and skills for food crops farming | 252 | 3.841 | 1.553 |
| Malnutrition rate was reduced in the community | 252 | 3.833 | 1.553 |
| Enhanced pastoralism | 252 | 3.881 | 1.500 |
| Increased availability, storage and better usage of water in the community | 252 | 3.857 | 1.519 |
| Increased economic activities in the community | 252 | 3.853 | 1.525 |
| Venture in high value crops farming activities | 252 | 3.821 | 1.573 |
| Enhanced community education enrollment for children | 252 | 3.853 | 1.498 |
| Increased enrollment of women in formal education | 252 | 3.861 | 1.491 |
| Enhanced harmonization in gender roles | 252 | 3.865 | 1.485 |
| Average | 252 | 3.855 | 1.518 |

*Source: Researcher (2025)*

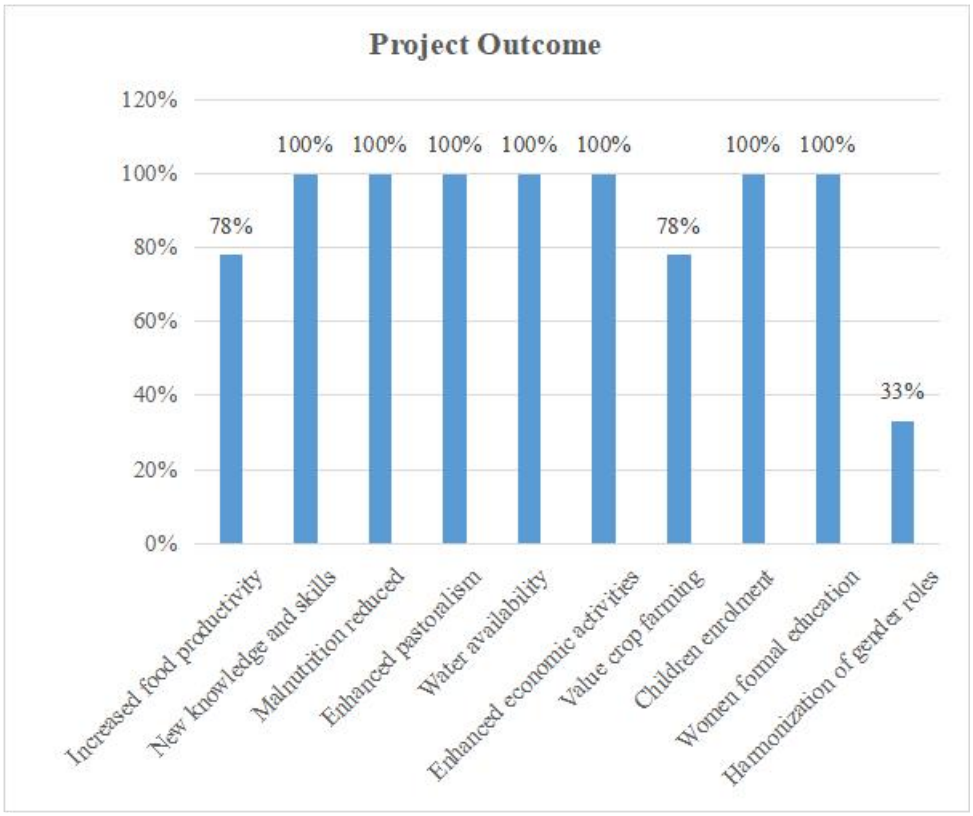
The items on project performance had a mean score with the highest being 3.88 on two items, where respondents disagreed that food productivity was increased as a result of the implemented project, as well as disagreed that pastoralism was enhanced as a result of the implemented projects. The variable had a comparatively low mean of 3.82, with respondents disagreeing that there was venture in high value crops farming activities as a result of the implemented projects. The standard deviation of all items on project

performance was low, ranging from 1.47, on the item that food productivity was increased as a result of the implemented project, and the highest being 1.57, on the item on venture of high value crops farming activities. For this variable, the dispersion of the responses was thus low, meaning that most of the respondents had the same opinion about the implementation of the projects.

Interviews were conducted in an effort to understand the outcome of the implemented projects as a measure of project performance. The interviews further sought to understand the views of the KIs on the outcome of the projects.

**Figure 23**

*Project Outcome*




*Source: Researcher (2025)*

Data collected through interviews showed that 100% of the KIs agreed that implementation of climate change adaptation projects led to acquisition of new knowledge and skills, caused reduction in malnutrition rates, enhanced sedentary

pastoralism, increased availability, storage and better usage of water, led to increased economic activities, enhanced children education enrollment as well as increased enrollment of women in formal education. 78% of the KIs indicated that implementation of the projects led to increased food productivity and enhanced value crop farming. 33% indicated that there was harmonization of gender roles.

Data from the open-ended questions showed divergent views from beneficiaries, who indicated that outcomes such as increased enrolment of children and women in education were a result of continuous community sensitizations from many forums. They further indicated that the introduction of climate change adaptation projects geared at enhancing food security to the communities had been received with mixed feelings since their pride was in pastoralism.

Further data collected from observation showed that two projects stood out and were highly successful (Kalacha Irrigation Scheme and Khandere Irrigation Scheme). Kalacha Irrigation Scheme was a natural spring fed irrigation project with a total of 315 beneficiaries. The project had shifted from horticultural irrigation to fodder irrigation out of imploration of the beneficiaries. The beneficiaries were able to feed their livestock in all seasons, and have surplus fodder for sales. The irrigation land was fenced and the natural spring area was also protected through fencing. There was a water tank that acted as reservoir for community water source. The water was fed to the project site through cemented furrows. There was a storage house where hay bales were stacked.

At the time of data collection, the project site was lush with green grass and trees that were a delicacy to livestock. There was also hay bales stored for use by beneficiaries. This was a sharp contrast to the transit across the bare Chalbi Desert. An oasis in Chalbi desert indeed. The beneficiaries were vibrant and satisfied.

Khandere Irrigation Scheme was a project initiated by members of Kinisa community, who wrote proposals and sought funding to finance the project. The project site was protected through fencing. Water source was a borehole installed by the county. Water used for irrigation was paid for to the county. There were two water tanks at the site used as reservoirs. The community had a history of rain fed farming.

All the farms allocated to farmers were skillfully and well-tended, and were rife with fruit trees and horticultural crops. It is important to note that despite the project being a success, out of 89 registered members, only 30 were active, thus couldn't make much difference in adaptation of the community to climate change.

Attan Irrigation Project was initiated by a group of Ngaremara community members, who wrote proposals and sought funding from donors. However, the funding was not sufficient, which caused deviations from the initial proposal. Community members requested for provision of water for domestic use, which led to installation of water kiosks. The project entailed drilling of a borehole, as well as construction of concrete furrows from the river to the farm.

At the time of data collection, the project was operational. However, only 6 acres of land are under cultivation, with one acre being a demo farm and five acres allocated to 215 beneficiaries. The project site was vibrant with farming activities in some parcels, whereas others had been neglected. From observation, the acreage was insufficient in relation to the community needs.

Sirata Irrigation Project, Elsa Ntirimi Water Project, Rapsu Irrigation Scheme, Songa Farmers Irrigation Scheme and Sukuma Integrated Community Project were in existence but struggling due to various reasons. Sirata Irrigation Project, located at Logo Logo, was a borehole fed irrigation project with a total of 108 beneficiaries. The project site had a total of 8 water storage tanks. There were solar panels installed for pumping water

from the boreholes to the water tanks. The water was then distributed in the farms using water pipes.

At the time of data collection, majority of the parcels were in neglect, cited to have been caused by long distances travelled by the beneficiaries to the sites, men being generally lazy, and never tended to the parcels allocated to them. Only a few parcels had been tended to, but the crops were sparsely distributed and were not thriving. It was further observed that the soil was very loose whereby retaining water was a challenge, and constant watering was necessary.

Elsa Ntirimi Water Project in Burat was an irrigation project, serving 191 beneficiaries. Construction of an intake was never completed, thus the beneficiaries usually laid pipes in the river, directing to their farms for irrigation. The beneficiaries dug furrows across their farms for irrigation. Farming was not new to the community, since they had been engaging in rain fed farming. Since the beneficiaries were many, each farmer got water for use at their farm for one hour in a week. This had caused constant conflicts between the members. At the time of data collection, it was observed that majority of the farms had not been tended to. There were a few farms with vibrant activities and with crops growing. Beneficiaries stressed out, running up and down looking for water during their allocated time was a common observation.

Rapsu Irrigation Scheme was an irrigation project located at Kina, with a total of 200 beneficiaries. The project entailed construction of concrete troughs and feeder canals from River Bisanadi to the beneficiaries farms. Water was distributed to the farms by furrow method.

At the time of data collection, there was plenty of water in the farm, and some farms had been tended to and boasted plenty of horticultural crops and fruit trees. However,

majority of the farms were bare due to lack of seeds for planting as well as neglect from the owners.

Songa Farmers Irrigation Scheme located at Karare was implemented as a women irrigation project with a total of 47 beneficiaries. The beneficiaries carry out irrigation of horticultural crops. The county's department of Agriculture constructed and protects intakes from natural springs water points in the forest. This water was further piped from the forest to the community, and is used for irrigation, domestic use and livestock. The department had also provided water pans/ponds fitted with dam liners for water collection, where beneficiaries further pump the water to their farms.

At the time of data collection, the study observed that not all beneficiaries owned water pumps. Some beneficiaries had solar powered water pumps, while others had money maker water pumps. Some beneficiaries also owned water reservoirs in their farms and irrigated using drip lines. The community was not new to farming practices since they previously practiced rain fed farming. Some farms were active, well-tended to and rife with crops. However, majority of the beneficiaries were not active due to the cost of connecting the water from the water pans to their farms.

Sukuma Integrated Community Project was an irrigation project located at Ngaremara, with a total of 40 beneficiaries. The project entailed sinking of a borehole, installation of water tanks for use by the beneficiaries for irrigation, as well as installation of water kiosks where the local community fetches water. The project was installed with a small capacity water pump, which pumps little water. There were two water tanks at the project site, which were not enough to serve the entire farm. Piping of the water from the storage tanks for irrigation was problematic. As a result, one single farmer would end up taking at least two days to water their farm to completion. This had discouragement to beneficiaries and many had abandoned their farms. At the time of

data collection, most of the farms had been abandoned. A few were vibrant and rife with crops.

Madoadi Small Scale Irrigation and Production Project at Sololo was a project that entailed excavation of an earthen dam and two 10,000 litres water tanks at the project site, which served a total of 60 beneficiaries. The project farm was at a higher ground level than the water dam, thus distribution of water was a challenge. There was no piping installed to facilitate filling the water tanks, thus the tanks were not in use. There was no piping for distribution of water to the farms either. At the time of data collection, the farms were completely bare, without a single activity going on. The water level at the dam was extremely low, and the little water available was in competition by the community for domestic use and livestock. The soil from the excavated dam was never leveled or discarded, but lay in huge mounds on the site.

Beneficiaries indicated that whenever water levels increased, they would fetch water with containers from the dam, to water their crops, since there was no piping or any other method of deriving the water from the dams to the farm. This was a painstakingly tedious activity that could break even the strongest willed person, and this saw most of the beneficiaries abandon their farms. The community had some farming skills since they practiced rain fed farming.

Kenya Smart Agriculture Project (KeSAP) in Oldo Nyiro was a women led project with a total of 500 beneficiaries. The project had excavated a dam for collection of rain water, for irrigation, domestic use and livestock watering purposes. The project faced challenges from the initial stage of implementation. The soil was very loose and could not hold water. The identified land for irrigation was never fenced and irrigation works have never commenced on this land. At the time of data collection, the dam was in

existence but with low water levels. The project farm meant for irrigation was covered by bushes. Irrigation was never implemented for this project.

Walda Food Security and Moyale-Walda Irrigation Project was initially a vast mega project expected to solve the community's food security needs, with a total of 256 beneficiaries. The project entailed drilling of 4 boreholes and installation of generators and high-cost distribution systems throughout the entire farm. The farm had been fenced and had been vibrant with initial years bearing so much yield, that the harvests got wasted due to rotting. but at the time of data collection, remained in ruins. The PIs left the site once funds got depleted, and the beneficiaries were left with no continuity knowledge or skills. At the time of data collection, the vast land was bare, the fencing, the generators, the high-cost system and boreholes had been vandalized. The project had totally failed, with nothing to show at the project site.

The beneficiary communities had learnt farming skills which was a new practice to many of them. Food productivity and nutrition had improved, albeit for the few active members. The communities were slowly embracing other farming ventures such as chicken rearing, which were enhancing their nutritional diets. Enrollment of children in schools and increased enrollment of women in education had increased in the communities, but respondents were quick to point out that this had not been caused by implementation of the projects in their communities, but that a lot of sensitizations was often carried out to the community members. In addition, there were government interventions that emphasized on education of children and equal opportunities to both boys and girls. Generally, the impact of the implemented projects to the communities was minimal since very few beneficiaries were active. The number of beneficiaries too was low in comparison to the people in the communities where these projects were

implemented. Attitudinal changes in majority of these communities were still vital, if change was to be embraced effectively.

### 4.6.12 Multiple regression analysis

To explain, predict and test the relationship between all the constructs combined and the dependent variable, a multiple regression analysis was run. The results are indicated in tables 36, 37 and 38.

**Table 36**

*Coefficients for the Multiple Regression Analysis*

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | **B** | **Std. Error** | **Beta** | **T** | **Sig.** |
| 1 | (Constant) | -4.097 | 1.455 | | -2.816 | .005 |
| | Institutional Characteristics | -.167 | .030 | -.074 | -5.665 | .000 |
| | Resource Management | -.040 | .011 | -.042 | -3.507 | .001 |
| | Stakeholders Participation | 1.501 | .027 | 1.117 | 56.097 | .000 |
| | Regulatory Framework | -.262 | .056 | -.087 | -4.651 | .000 |

a. Dependent Variable: Project performance

*Source: Researcher (2025)*

From table 36 the multiple linear regression model is $Y= -4.097 - .167x_1 - .040x_2 + 1.501x_3 - .262x_4$. Based on the results, when combined, institutional characteristics had a p value of .000, resource management .001, stakeholder participation .000, regulatory framework .000 and project performance .005. Thus, all the variables were significant as they all had a p value of less than 0.05, indicating that they influenced project performance.

**Table 37**

*Analysis of Variance for the Multiple Regression Analysis*

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 54684.592 | 4 | 13671.148 | 2269.586 | .000[b] |
| | Residual | 1487.837 | 247 | 6.024 | | |
| | **Total** | **56172.429** | **251** | | | |

a. Dependent Variable: Project performance

b. Predictors: (Constant), Regulatory Framework, Resource Management, Institutional Characteristics, Stakeholders Participation

*Source: Researcher (2025)*

Table 37 indicates the F value of 2269.586 as obtained with a p-value of .000, which suggests that the regression model is statistically highly significant. The p-value was .000, indicating that the model was fit for prediction purposes.

**Table 38**

*Model Summary for Multiple Regression Analysis*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .987[a] | .974 | .973 | 2.45431 |

a. Predictors: (Constant), Regulatory Framework, Resource Management, Institutional Characteristics, Stakeholders Participation

*Source: Researcher (2025)*

From table 38, the Adjusted R Squared is 0.973, which implies that the variability in institutional characteristics, resource management, stakeholder participation and regulatory framework when combined, explains 97.3% of the variability in project performance. Thus, when all the variables are combined, the model has a high effect in explaining project performance.

### 4.6.8 13 Multiple regression analysis with moderating variable

Multiple regression analysis was run with the moderating variable, climate change factors and effects to establish if and how the relationship between an independent variable and dependent variable varied. The results are as shown in tables 39, 40 and 41.

**Table 39**

*Coefficients with Moderating Variable*

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **T** | **Sig.** |
| | | **B** | **Std. Error** | **Beta** | | |
| 1 | (Constant) | -37.855 | 8.717 | | -4.343 | .000 |
| | Institutional Characteristics | -.638 | .216 | -.282 | -2.957 | .003 |
| | Institutional characteristics*climate change | .023 | .009 | .326 | 2.672 | .008 |
| | Resource Management | -.658 | .148 | -.686 | -4.461 | .000 |
| | Resource Management* Climate Change | .026 | .006 | .644 | 4.291 | .000 |
| | Stakeholder Participation | 1.119 | .177 | .833 | 6.309 | .000 |
| | Stakeholder Participation* Climate Change | .011 | .008 | .206 | 1.350 | .178 |
| | Regulatory Framework | 2.209 | .478 | .730 | 4.617 | .000 |
| | Regulatory Framework* Climate Change | -.093 | .019 | -1.075 | -4.873 | .000 |
| | Climate Change Factors and Effects | 1.135 | .319 | .344 | 3.559 | .000 |

a. Dependent Variable: Project performance

*Source: Researcher (2025)*

From table 39 the multiple linear regression model is $Y= -37.855 – 0.638x_1 + 0.23^{*}x_1.x_5 – 0.658\,x_2 + 0.026^{*}x_2.x_5 + 1.119x_3 + 0.011^{*}x_3.x_5 + 2.209x_4 – 0.093^{*}x_4.x_5 + 1.135x_5$.

With incorporation of the moderating variable, the model performance improved from adjusted R squared of 0.973 (table 38), to 0.978 (table 41). In addition, the regression was significant as indicated in the ANOVA table. The results in table 41 indicate that the interaction effect of climate change factors and effects with institution characteristics and resource management to project performance are moderated positively (β=0.23 and β=0.26 respectively) and they are significant (0.008 and 0.000 respectively). In addition, incorporation of climate change factors and effects moderates the effect of regulatory framework negatively (β=-0.093) and hence the interaction effect of climate change and regulatory framework is negatively significant. However, the interaction effect of climate

change factors and effects with stakeholder participation to project performance was not significant (p=0.178). This implies that by incorporating the moderating variable (climate change factors and effects), the effect of stakeholder participation on project performance is moderated negatively (from β=1.119 to β=0.11) and becomes insignificant.

**Table 40**

*Analysis of Variance with Moderating Variable*

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 54966.087 | 9 | 6107.343 | 1225.173 | .000[b] |
| | Residual | 1206.341 | 242 | 4.985 | | |
| | **Total** | **56172.429** | **251** | | | |

a. Dependent Variable: Project performance

b. Predictors: (Constant), Climate Change Factors and Effects, Resource Management* Climate Change, Institutional Characteristics, Regulatory Framework, Stakeholders Participation, Stakeholders Participation* Climate Change, Institutional characteristics*climate change, Resource Management, Regulatory Framework* Climate Change

*Source: Researcher (2025)*

Table 40 indicates the F value of 1225.173 as obtained with a p-value of .000, which suggests that even with the moderation of climate change factors and effects, the regression model is statistically significant. Thus, institutional characteristics, resource management, stakeholder participation, regulatory framework and climate change factors and effects when combined influenced project performance.

**Table 41**

*Model Summary*

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .989[a] | .979 | .978 | 2.23268 |

a. Predictors: (Constant), Climate Change Factors and Effects, Resource Management* Climate Change, Institutional Characteristics, Regulatory Framework, Stakeholders Participation, Stakeholders Participation* Climate Change, Institutional characteristics*climate change, Resource Management, Regulatory Framework* Climate Change

*Source: Researcher (2025)*

From table 41 the Adjusted R Squared is 0.978, which implies that the model of the variability in institutional characteristics, resource management, stakeholder participation, regulatory framework and climate change factors and effects when combined explained 97.8% of the variability in project performance. Thus, when all the variables are combined, the model has a high effect in explaining project performance. In addition, the moderating variable improved the fitness of the model, thus it was important.

# CHAPTER FIVE: CONCLUSIONS, RECOMMENDATIONSAND PUBLICATIONS

## 5.1 Introduction

The chapter gives findings in summary making conclusions, recommendations on each research objective and suggestions for further studies. The research findings have been used to derive the conclusions and make relevant recommendations.

## 5.2 Summary of the Findings

The general objective of the study assessed the effect of strategy implementation on the performance of climate change adaptation projects in Kenya. The study independent variable constructs were institutional characteristics, resource management, stakeholder participation and regulatory framework. In addition, the study investigated the moderating role of climate change factors and effects on the performance of climate change adaptation projects in Kenya. The dependent variable was project performance. The underpinning theories for the constructs were institutional theory, resource-based view theory, stakeholder theory, path dependency theory and theory of change. The dependent variable was guided by the theory of constraints.

The first objective sought to examine whether institutional characteristics had an effect on the implementation of climate change adaptation projects in Kenya. The indicators for institutional characteristics were leadership, project implementation structure and use of communication technology. The average mean was 3.126 while the average standard deviation is low, at 1.558. The correlation of coefficient (.531) was significant (p=.000) and indicates that there is a fairly positive correlation between institutional characteristics and project performance. The coefficient results showed that institutional characteristics positively influenced project performance (β=1.199). The ANOVA showed that the regression model was significant (.000). However, the Adjusted $R^2$

(.279) implied that there were other factors affecting project performance. The research findings avers that there was significant effect, and thus the study confirmed the hypothesis.

The second objective sought to investigate the effect of resource management on the implementation of climate change adaptation projects in Kenya. The indicators for resource management were resource allocation, resource adequacy and resource optimization. The average mean was 3.397 while the average standard deviation was low at 1.553. The correlation of coefficient (.409) was significant (p=.000), and showed that there was an average positive correlation between resource management and project performance. The coefficient results showed that resource management positively influence project performance (β=0.393). The ANOVA showed that the regression model was significant (.000). The Adjusted $R^2$ (.164) however implied that there were other factors affecting project performance. The research findings averred that there was significant effect, and thus the study confirmed the hypothesis.

The third objective sought to examine whether stakeholder participation had an effect on the implementation of climate change adaptation projects in Kenya. The indicators for stakeholder participation were inclusivity in decision making, community capacity building and community culture. The average mean was 3.329 while the average standard deviation was low at 1.272. The correlation of coefficient (.982) was significant (p=.000), and indicated that there was a strong positive correlation between stakeholder participation and project performance. The coefficient results showed that stakeholder participation positively influenced project performance (β=1.319). The ANOVA showed that the regression model was significant (.000). The Adjusted $R^2$ (.965) implied that stakeholder participation alone greatly affected project performance. The research

findings averred that there was significant effect, and thus the study confirmed the hypothesis.

The fourth objective sought to investigate whether regulatory framework had an effect on the implementation of climate change adaptation projects in Kenya. The indicators for regulatory framework were government policies, community agreements and donor intent. The average mean was 2.989 while the average standard deviation was low at .924. The correlation of coefficient (.783) was significant (p=.000), and showed that there was a high positive correlation between regulatory framework and project performance. The coefficient results showed that regulatory framework positively influenced project performance (β= 2.370). The ANOVA showed that the regression model was significant (.000). The Adjusted $R^2$ (.611) implied that strongly explained project performance. The research findings averred that there was significant effect, and thus the study rejected the null hypothesis.

The fifth objective sought to evaluate whether climate change factors and effects as a moderating variable, had an effect on the implementation of climate change adaptation projects in Kenya. The indicators climate change factors and effects were seasonal variation, extreme weather conditions and drought. The average mean was 1.998 while the average standard deviation was low at 0.783. The correlation of coefficient was (-.171) was significant (p=.006, and indicated that there was a weak negative correlation between climate change factors and effects and project performance. The coefficient results for the effect of moderating variable to the joint independent variables all had a p value of less than .005, thus were significant. The ANOVA showed that the regression model was significant (.000). The joint constructs when moderated with Climate change factors and effects had a high effect in explaining project performance (Adjusted

$R^2$=.978). The research findings averred that there was significant effect, and thus the study confirmed the hypothesis.

### 5.3 Conclusions

The general objective of the study was to assess strategy implementation on the performance of climate change adaptation projects in Kenya and the following conclusions were derived. From the first objective, the study established that institutional characteristics had a significant positive impact on the performance of climate change adaptation projects. The research confirmed that climate change adaptation projects which applied sound institutional characteristics had the prospects of improving their performance. In this respect, climate change adaptation projects that used coaching and democratic styles of leadership had a high performance rate than those that used autocratic and bureaucratic styles. Likewise, those that had a matrix project implementation structure had clear flow of commands and tended to perform well. Technology used was largely mobile phones for communication, and whereas it was available to majority of the respondents, its use was hindered by affordability of airtime, lack of electricity and poor network connectivity.

The second objective of the study found out that resource management had a significant positive impact on the performance of climate change adaptation projects. Majority of the climate change adaptation projects studied were endowed with adequate resources at the initial stages, but their performance was affected by lack of proper management of available resources. Some other projects initially invested in expensive and extensive systems that were unsustainable and could not be managed in the long run. The projects that managed their available resources effectively performed exemplary well. Projects that had inadequate resources, or unequitable allocation of resources did not succeed.

Dynamic adjustment on allocation of resources was also critical due to changes in initial project plans due to community demands.

The third objective of the study established that stakeholder participation had a very high significant positive impact on the performance of climate change adaptation projects. The research established that the community beneficiaries were endowed with indigenous knowledge on climate change adaptation methods and survival skills, which if incorporated to implementation of projects led to a positive impact. Climate change adaptation projects that involved the community beneficiaries in implementation of the projects from the initial stages were successful. The climate change adaptation projects that built capacity for the beneficiaries through trainings, exposure tours, demonstrations and other means of knowledge acquisition and skills development performed exemplary well. Likewise, the projects that took consideration of the community culture was embraced by the communities and performed well.

From the fourth objective, the study realized that regulatory framework had a significant positive impact on the performance of climate change adaptation projects. Majority of the climate change adaptation projects studied did not have a challenge with attaining government licensing and permits since they were implemented in collaboration with the county and national governments. The PIs commitments in community agreements were mainly on employment of community members in implementation of the projects, although the jobs offered were mainly unskilled labor. From the projects studied, donor conditionalities were not major and did not have a major impact on performance of the projects.

The fifth objective established that climate change factors and effects had a significant impact on the performance of climate change adaptation projects. Seasonal variations, extreme weather conditions and drought did not only cause delays in implementation of

the projects, but also affected the outcome of the projects. The projects implemented were mainly irrigation projects, and prolonged drought caused drying up of the water reservoirs and competition of the little available water between domestic use and livestock. The few times it rained would cause flooding, sweeping away the hard work and causing destruction to crops. Working under extreme weather conditions was also slow. Unskilled laborers would fail to report to work due to hunger. Pests and diseases due to extreme weather conditions also affected the outcome of the projects.

The general overview of the study was that few of the projects were in continuity after hand over to the beneficiaries. In addition, the successful projects had very few beneficiaries, as compared to the number of needy people in the communities. Thus, the impact in alleviating the effects of climate change were definitely minimal. Majority of the projects were struggling to exist, with most of the parcels allocated to beneficiaries left in neglect. Other projects had totally failed. This state has resulted in minimal impact on alleviating the effects of climate change to the beneficiary communities.

## 5.4 Statement of Contribution

This study assessed the effect of strategy implementation on the performance of climate change adaptation projects in Kenya. The study contributes to the existing knowledge by introducing the conceptual framework and illustrating how strategy implementation influences the performance of climate change adaptation projects in Kenya.

### 5.4.1 Contribution to theory

The study supports the theoretical literature reviewed for purposes of supporting various occurrences which formed the basis of investigation. Institutional theory was used to support institutional characteristics objective, which was a construct for strategy implementation, and this study concurs with the theory that organizations need to comprehend how to maneuver around processes, social structures and so on in order to

exist. The PIs needed to understand how to maneuver in order to penetrate a society with ingrained cultural practices and traditions, for these projects and new approaches to be accepted by the communities. The leadership and communication approaches, as well as chain of command adopted by the PIs had an effect on the outcome of these projects. Projects where democracy and coaching was used performed well.

Resource management was an objective that was supported by resource-based view theory, which argues that for organizations to enjoy competitive advantage, they needed to be endowed with strategic resources. The emphasis of this theory that strategic resources ought to be valuable, rare, inimitable and non-substitutable was confirmed by the results of this study. All the projects were implemented because they had resources. However, only those projects who boasted of strategic resources were successful. The PIs of the successful projects turned their ordinary resources into strategic resources through sound resource management practices. The best performing project among those studied converted their irrigation from food to fodder, which due to extreme scarcity was highly valuable. The beneficiaries subsequently were able to feed all their livestock and sell surplus. In contrast, a different project was endowed with excessive financial resources and came up with a mega project, only for the ambiguous project to fade away with nothing but a vast bare land to show, after depletion of the funds.

Stakeholder theory supported the stakeholder participation objective, and it asserts that an organization has obligations to a larger range of stakeholders. The results of this study concur with the assertion of the theory that stakeholders play an important role in the performance of the organization. The projects that incorporated their beneficiaries into the project from the initial stages performed exemplary well. The beneficiaries were endowed with rich indigenous knowledge which they incorporated to the projects. The few projects that empowered their beneficiaries through capacity building succeeded

because the beneficiaries got the necessary knowledge and skills to continue running the projects even after departure of the PIs. The majority of the projects did not engage their beneficiaries effectively and this ultimately affected the performance of those projects.

Regulatory framework objective was anchored on path dependence theory which places a strong emphasis on "history matters", and the results of this study agreed with this assertion. Most of the projects were implemented in a similar pattern, based on irrigation practices. In addition, the projects adopted similar regulatory frameworks which were requirements in the country. The PIs were content with the norm and no deviation was noted. However, compliance to government policies was not hindered since the projects were implemented in collaboration with the local governments.

Climate change factors and effects was the moderating variable and was anchored on the theory of change, which focuses on efficacy of initiatives such as projects, strategies, programs and policies. The theory asserts the need to differentiate actual and expected results in order to develop effective interventions. The theory strives to assist societies in coping with social changes, and notably in this study, climate change phenomenon has impacted the societies in ASAL regions in a great magnitude, and there is a struggle to survive. The study derived that some of the communities where the projects were implemented were striving to change their pastoralist norms to embracing farming practices, albeit a slow and painful process for them. Attitudinal changes from most of these communities is slowly happening.

Project performance variable was based on the theory of constraints, and the outcomes that were derived from the study supported the assertions of the theory that "a chain is as strong as its weakest link". Most of the projects implemented had weak points such as lack of stakeholder participation, poor resource management, poor communication and leadership, and lack of effective capacity building for beneficiaries that would have

ensured continuity or sustainability of the projects after implementers left the sites. These weak points impacted negatively on the outcome of the projects.

### 5.4.2 Contribution to empirics

The study makes contribution to empirical literature by conceptualizing how strategy implementation, represented by institutional characteristics, resource management, stakeholder participation, regulatory framework and moderated by climate change factors and effects contribute to the performance of climate change adaptation projects in Kenya. Prior studies carried out asserts that institutional characteristics indicated by leadership style adopted by PIs and organizations, project implementation structure adopted by PIs in implementing a project, and the type of communication technology used by the PIs during implementation of a project affected their outcome negatively or positively. This study results confirmed this assertion.

Empirical literature reviewed by this research also showed that resource allocation, resource adequacy and resource optimization were indicators of resource management and they influenced the performance of organizations and projects. The results of this study averred this notion. Likewise, the literature studied indicated that involvement of stakeholders in decision making, building the capacity of the beneficiaries and understanding of community culture, all indicators of stakeholder participation, impacted in a major way the performance of projects. This study confirmed this assertion since the results indicated that stakeholder participation affected the performance of the projects implemented.

Regulatory framework, indicated by government policies, community agreements and donor intent were reviewed and the existing literature showed it affected project performance. The results of this study likewise asserted this by showing significant effect to the performance of projects implemented. Climate change factors and effects

was a moderating variable of this study with indicators as seasonal variation, extreme weather conditions and drought. Existing literature that was reviewed showed that there was significant effect on the performance of projects. This notion was equally asserted by the results of this study.

### 5.4.3 Contribution to method

This study contributes to methods by combining quantitative and qualitative methods to evaluate the effectiveness of climate change adaptation initiatives in Kenya's arid and semi-arid lands (ASALs). In contrast to previous studies reviewed that mostly relied on surveys or project-level evaluations alone, this study creates a mixed-methods framework that incorporates observation, key informant interviews, and structured surveys. In addition to improving the findings' validity, this triangulation highlights the distinct, situation-specific aspects of climate change adaptation projects performance that are sometimes overlooked in conventional assessment methods.

### 5.4.4 Contribution to practice

The implementers of projects can apply the studied constructs and indicators of strategy implementation to implement successful projects. The results of this study can guide the government, NGOs, private sector, funding organizations and other climate change actors in formulating policies, developing sound action plans and implementing projects with positive outcomes. The findings of this study are a guide to future researchers in evaluating the most significant constructs of assessing the strategy implementation on the performance of projects. The study results will act as a guide to policy makers in organizations and other fields to understand the contribution of the constructs studied to the performance of projects, and organizations.

## 5.5 Recommendations from the Study

Based on the findings of the first objective, project implementers should ensure they adopt sound institutional characteristics that would result in positive project outcomes. Democratic or coaching leadership style was readily embraced by the beneficiaries. Matrix structure gave better outcome since it allowed experts to participate in their line of expertise. PIs should also use technology that is effective due to affordability and convenience to all participants, especially for communication purposes.

As informed by the results of the second objective, PIs should ensure that they employ sound resource management practices if they are to achieve success in implementation of the projects. The resources required for implementation of a project should be established and availed. The available resources ought to be allocated equitably. Organizations can embrace tools such as procurement plans, budgets and bills of quantities to enhance adequacy of resources. In cases where there is surplus or shortage of resources, project optimization can be carried out for better utilization of available resources. Project planning, project scheduling and budgeting are common tools that can be embraced to enhance resource optimization.

Recommendations are derived from the results of the third objective, that stakeholder participation is a major ingredient in the outcome of implemented projects. Stakeholders should be included in the project decision making from the initial stages of project definition and planning, information dissemination and implementation phase. Indigenous knowledge should be sought and considered for enriching the scientific knowledge. This instils a sense of ownership which is vital for continuity of the project. Stakeholder capacity building should be adequately carried out, to impart and enhance their knowledge, skills and attitudinal change. Capacity building can be carried out through trainings, seminars, demonstrations, exposure tours and skills development

through their involvement in implementation works. It is also recommended that PIs should take time to understand the local community culture in order to make informed and structured strategies to help them navigate around the delicate subject of attitudinal change. Understanding community culture can help PIs structure projects that will be more readily acceptable.

Based on the results of the fourth objective, this study recommends that the PIs should ensure they seek the required government licenses and permits, and follow the nationally or internationally accepted procedures in implementing the projects. PIs should ensure they have drawn agreements with the beneficiaries before implementing a project. The common agreement clauses derived from the results were engagement of local community in works and protection of the environment. PIs should adhere to donor stipulations in implementing the projects, mainly on utilization of funds, adherence to internationally accepted guidelines and periodic reports.

The fifth objective was based on a moderating variable and recommendations derived from the findings implore implementation of projects that can be embraced by the communities to enhance their adaptation to climate change. The PIs should not underrate the effect of climate change on performance of the project, but instead, employ strategies that will enhance project performance, such as water harvesting, drought resistant varieties, enhancing attitudinal change to communities, embracing indigenous knowledge among others.

### 5.6 Areas for Further Research

This study has obtained valuable evidence into the relationship between strategy implementation and the performance of climate change adaptation projects in Kenya. It is paramount that further research be carried out to establish whether these findings could

be generalized to other projects such as entrepreneurial projects and other sectors and fields such as the corporate organizations, public organizations and private organizations. The factors of strategy implementation are diverse, and this study was able to measure the effects of only four constructs, viz institutional characteristics, resource management, stakeholder participation and regulatory framework. Further studies can be carried out to establish the relationship of project performance and other factors of strategy implementation such as policies and procedures, tools and systems, organizational culture, business processes, rewards and incentives among others.

This study was carried out on projects implemented in ASAL regions that were in phase 4 (emergency phase) of IPCC classification. Further studies can be undertaken in other phases of the classification, viz, Phase 1: Minimal; Phase 2: Stressed; Phase 3: Crisis and Phase 5: Catastrophe, of Kenya's ASAL regions, as well as other regions in the world, to establish the effects of strategy implementation on the performance of climate change adaptation projects in those regions.

**5.7 Publications**

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## APPENDICES

### Appendix A: Introduction Letter


MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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TO WHOM IT MAY CONCERN

Date: 5th June, 2023

LETTER OF INTRODUCTION

This letter is to introduce **Ms. Violet Kiende Murungi**, who is a **Ph.D.** candidate in the School of Business and Economics, Meru University of Science and Technology. The candidate is supposed to conduct research in her area of study titled: **Assessment of Strategy Implementation on the Performance of Climate Change Adaptation Projects in Kenya.** This is a requirement before candidates finalize their studies. Any assistance accorded to her will highly be appreciated. Thank you.

Yours Faithfully

**Dr. Agnes Mungania.**
**CoD Business Management**

**Appendix B :Informed Consent Form**

**Assessment of Strategy Implementation on the Performance of Climate Change Adaptation Projects in Kenya.**

**Researcher:**
Violet Kiende Murungi: PhD Candidate
Department of Business Management Meru University of Science and Technology
Email: vkyende@gmail.com Phone: 0721 669 884

**Supervisors:**
Dr. David Ntongai, Prof. Guyo Huka, Dr. Eric Mworia
Meru University of Science and Technology

You are invited to participate in a research study being conducted as part of my PhD thesis. The purpose of this study is to examine how strategy implementation factors such as institutional characteristics, resource management, stakeholder participation and regulatory framework affect the performance of climate change adaptation projects in Kenya's ASAL regions.

If you agree to take part in this study, you will be requested to participate in an interview or fill out a questionnaire, share your perspectives or experiences related to the implemented climate change adaptation project, and allow the researcher to take notes during the interview (only if you consent).

Your participation is entirely voluntary, and you may decline to answer any question or withdraw from the study at any point without any consequences. In addition, please note that:

i) Your identity and responses will be kept strictly confidential.
ii) No personal identifiers will appear in the questionnaire or interview guide, final thesis or any publication.
iii) Questionnaires and interview recordings will be securely stored and destroyed one year after transcription.
iv) The data will be used for academic purposes only and may be published in scientific journals or presented at conferences, but your identity will remain anonymous.
v) There are no known risks associated with participating in this study.
vi) You will not receive monetary compensation, but your insights may help improve the implementation of climate change adaptation projects and programs in Kenya and beyond.

Your participation is entirely voluntary. You may refuse to participate, skip any question you do not want to answer or withdraw from the study at any point. There are no penalties or negative consequences for choosing not to participate.

**Consent Statement:**

By signing below, you confirm that:

i) You have read (or have been read to you) and understood the information provided above.
ii) You voluntarily agree to participate in the research.
iii) You are at least 18 years of age.

You may request a copy of this form for your records.

**Participant's Name:** ……

**Signature:** ……

**Date:** ……

**Researcher's Name:** …….

**Signature:** ……

**Date:** ……..

If you have any questions about this research or your rights as a participant, please contact:

1. Violet Kiende Murungi, PhD student; vkyende@gmail.com; 0721 669 884
2. Meru University Institutional Research and Ethics Review Committee (MIRERC): mirerc@must.ac.ke

**Appendix C :Questionnaire for Project Beneficiaries**

This questionnaire seeks to assess strategy implementation on the performance of climate change adaptation projects in Kenya. In particular, it will involve aspects of institutional characteristics, resource management, stakeholder participation, regulatory framework and climate change factors and effects.

**Part A**

Gender: ☐ Male ☐ Female

Age: ☐ 18-35 years ☐ Between 36-60 years ☐ Above 60 years

Level of Education: ☐ Primary ☐ Secondary ☐ Tertiary ☐ Other (specify) …….....

Source of Livelihood: ☐ Pastoralism ☐ Chicken rearing ☐ Food crop farming ☐ Cash crop farming ☐ Business person ☐ Other (please specify) ……..

**Name of the Project:** ……
……
…

**Part B: Institutional Characteristics**

**a) Leadership Style**

1. To what extent did the Project Implementers (PIs) allow beneficiary representatives to participate in decision making on project implementation?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. How frequently did the PIs give freedom to the beneficiaries to implement the project in their own way using indigenous knowledge?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

3. What level of importance did the PIs accord to developing beneficiaries as individuals through guidance and support during implementation of the project?

☐ Very important ☐ Important ☐ Moderately important ☐ Less important ☐ Unimportant

4. How often did the PIs set rules and regulations, to be strictly adhered to by the beneficiaries during the period the project was being implemented?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

**b) Project Implementation Structure**

1. As a beneficiary community, which of the following positions were the beneficiaries given in the implementation of the project?

☐ Chair ☐ Secretary ☐ Treasurer ☐ Member ☐ None of the above

2. To what extent did the donors interfere in the implementation of the project?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

3. Do you agree that a single person (senior leader) was responsible for implementation of the project?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

4. Do you agree that experts were allowed to focus on their areas of expertise during implementation of the project?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

5. To what extent were the roles and responsibilities of the various implementation teams defined?

☐ Very clear ☐ Clear ☐ Undecided ☐ A little clear ☐ Not clear

**c) Use of CommunicationTechnology**

1. What main type of communication technology was used in implementation of the project?

☐ Mobile phone calls ☐ E-mails ☐ Social media ☐ Artificial Intelligence
☐ Online Systems ☐ video and web conferencing

2. Do you agree that the technology used in implementation of the project was user friendly to the community members?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

3. How accessible was the technology used in implementation of the project to the beneficiaries?

☐ Always accessible ☐ Often accessible ☐ Sometimes ☐ Rarely ☐ Never

4. To what extent was the technology used in implementation of the project affordable to the beneficiaries?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

5. How convenient was the technology used in implementation of the project to the members?

☐ Very convenient ☐ Convenient ☐ Undecided ☐ Less convenient
☐ Not convenient

What are your general views on the leadership, project implementation structure and technology used in the implementation of the project?

……
……
……

**Part C: Resource Management**

**a) Resource Allocation**

1. To what extent were the necessary resources crucial for implementing the project available to the beneficiaries?

☐ Quite available ☐ Available ☐ Undecided ☐ Le☐t available Unavailable

2. How can you rate the quality of the resources given for implementing the project?

☐ Excellent ☐ Very Good ☐ Good ☐ Poor ☐ Very poor

3. How equitably were the resources for implementation of the project distributed to the beneficiaries?

☐ Highly equitably ☐ Equitably ☐ Undecided ☐ Less equitably ☐ Not equitably

4. As a beneficiary, how satisfied were you with the allocation of the resources?

☐ Very satisfied ☐ Satisfied ☐ Undecided ☐ Less satisfied ☐ Not satisfied

**b) Resource Adequacy**

1. Were the financial resources provided enough to implement the project?

☐ Quite enough ☐ Enough ☐ Moderate ☐ Less enough ☐ Not enough

5. How competent were the project implementers for successful implementation of the project?

☐ Highly competent ☐ Competent ☐ Modera☐ Less compe☐nt Not competent

3. To what extent were tools, machinery and equipment provided for implementation of the project adequate?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

4. Do you agree that adequate communication infrastructure to facilitate implementation of the project were provided?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

**c) Resource Optimization**

| **Indicators** | **Strongly agree** | **Agree** | **Neutral** | **Disagree** | **Strongly disagree** |
|---|---|---|---|---|---|
| 1. Project planning was done prior to implementation of the project | | | | | |
| 2. Budgeting was done prior to implementation of the project | | | | | |
| 3. Utilization of resources was monitored and evaluated at every project stage | | | | | |
| 4. Resources were re-allocated from areas they were least required to areas most required | | | | | |

What is your general view on how the resources were managed during implementation of the project?

……
……
……

**Part D: Stakeholder Participation**

**a) Inclusivity in decision making**

1. How important did the PIs view your opinions in the implementation of the project?

☐ Very important ☐ Important ☐ Neutral ☐ Slightly important ☐ Unimportant

2. How often did the PIs use the indigenous knowledge offered by the beneficiaries in implementing the project?

☐ Always ☐ Often ☐ Neutral ☐ Rarely ☐ Never

3. To what extent did the PIs inform you of the project funding and involve you in budgeting process?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

4. To what extent were you involved in the planning stage of the project implementation?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

**b) Community Capacity Building**

1. To what extent were you satisfied that you were taught the necessary knowledge and skills to help you continue running the project on your own after handing over to the beneficiaries?

☐ very satisfied ☐ Satisfied ☐ Neutral ☐ Less satisfied ☐ Not safisfied

2. Do you agree that demonstrations on how to carry out the project were done satisfactorily?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

3. How often were you re-trained on knowledge and skills necessary for implementation of the project?

☐ Always ☐ Often ☐ Neutral ☐ Rarely ☐ Never

4. To what extent were you empowered on how to mobilize for resources for continuity once the project was handed over to the beneficiaries?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

**c) Community Culture**

1. To what extent does the community have different roles for men and women?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. Do you agree that women were allowed to own property/ land in the community?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

3. To what extent does the community engage in pastoralism as the major economic activity?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

4. Do community members own property such as land in groups?

☐ Definitely ☐ Probably ☐ Possibly ☐ Probably not ☐ Definitely not

What are your general views on how the stakeholders participated in implementation of the project?

……
……
……

**Part E: Regulatory Framework**

**a) Government Policies**

1. To what extent was it easy to acquire the government licenses required for the implementation of the project?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. To what extent was it easy to acquire government permits required for implementation of the project?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

3. How often did the government procurement procedures hinder implementation of the project?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

4. How often did the government financial policies interfere with implementation of the project?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

**b) Community Agreements**

1. To what extent did the PIs commit to contribute to the beneficiary community through charity work?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. How often did the PIs employ the local community members in the implementation of the project?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

3. Do you agree that the project contributed to the improvement of the infrastructure of the local community?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

4. To what extent did the project implementation protect the local environment and natural resources surrounding the community?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

**c) Donor Intent**

1. To what extent did the donor require involvement of the beneficiaries in implementing the project?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. Did the donors stipulate the amount of funds that could be utilized on community outreach?

☐ Definitely ☐ Probably ☐ Possibly ☐ Probably not ☐ Definitely not

3. To what extent did the donor require periodic reports on how the money was being utilized?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

4. Do you agree that the donors stipulated how funds would be utilized in implementation of the project?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

What are your general views on the contribution of regulatory framework in implementation of the project?

……
……
……

**Part F: Climate Change Factors and Effects**

**a) Seasonal Variations**

1. To what extent did the rains fail to come at the expected time during implementation of the project?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. How frequently did the dry season prolong during implementation of the project?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

3. To what extent did wild fires break in the community?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

4. How often were heat waves experienced during implementation of the project?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

5. What were the results of seasonal variations to the community? (You can tick multiple answers)

☐ Reduced crop yield ☐ Increased soil erosion ☐ Increased food prices
☐ Reduced livestock population ☐ Invasion of pests and diseases

**b) Extreme Weather Conditions**

1. To what extent did the rains exceed during implementation of the project?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. Do you agree that dry weather conditions exceeded during implementation of the project?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

3. How often did the temperatures rise exceedingly during implementation of the project?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

4. What were the effects of extreme weather conditions to the community? (You can tick multiple answers)

☐ Drought ☐ Floods ☐ Diseases ☐ Water Scarcity ☐ Loss of livelihood

**c) Drought**

1. To what extent did drought conditions affect the implementation of the project?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

2. How often did drought occur in the region?

☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

3. To what extent did drought cause reduced livestock population?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

4. Do you agree that drought caused high rates of malnutrition in the community?

☐ Strongly agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly disagree

5. To what extent did drought cause death of people?

☐ Very large extent ☐ Large extent ☐ Neutral ☐ Low extent ☐ Very low extent

What are your general views on the factors and effects of climate change during implementation of the project?

……
……
……

**Part G: Project Performance**

**Project Outcome**

| **Indicators** | **Strongly agree** | **Agree** | **Neutral** | **Disagree** | **Strongly disagree** |
|---|---|---|---|---|---|
| 1. Food productivity was increased as a result of the implemented project | | | | | |
| 2. Beneficiaries acquired new knowledge and skills for food crops farming | | | | | |
| 3. Malnutrition rate was reduced in the community | | | | | |
| 4. Enhanced sedentary pastoralism | | | | | |
| 5. Increased availability, storage and better usage of water in the community | | | | | |
| 6. Increased economic activities in the community | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 7. Venture in high value crops farming activities | | | | | |
| 8. Enhanced community education enrollment for children | | | | | |
| 9. Increased enrollment of women in formal education | | | | | |
| 10. Enhanced harmonization in gender roles | | | | | |

What are your views on the performance of the project that was implemented?

……
……
……

**Appendix D :Interview Guide for Project Implementers**

This interview guide seeks to assess strategy implementation on the performance of climate change adaptation projects in Kenya. In particular, it will involve aspects of institutional characteristics, resource management, stakeholder participation, regulatory framework and climate change factors and effects.

**Part A**

Gender: ☐ Male ☐ Female

Age: ☐ 18-35 years ☐ Between 36-60 years ☐ Above 60 years

Level of Education: ☐ Primary ☐ Secondary ☐ Tertiary

Role in the implementation of the project: ☐ Donor ☐ Expert/ professional participant

☐ Government representative ☐ Local Administration ☐ Community representative

☐ Other (please specify) …….

**Name of the Project:** ……... …… ……...

**Part B: Institutional Characteristics**

**a) Leadership Style**

1. As a project implementer, how did you provide leadership to other stakeholders? (You can tick multiple answers)

☐ By involving them in sharing ideas and decision making (Democratic)

☐ By taking full control of the implementation with minimal input from others (Autocartic)

☐ By being less involved in the implementation, while giving freedom to others to implement the project in their own way (Laissez-faire)

☐ By developing other stakeholders as individuals through guidance and support (Coaching)

☐ By setting standards that needed to be achieved and holding the members accountable for achieving the set goals. (Transformational)

☐ By setting rules and regulations in place, to be strictly adhered to by the team (Bureaucratic)

2. Please describe challenges related to project leadership that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved the above challenges related to project leadership.

……
……
……

**Project Implementation Structure**

1. In which way was delegation of duties done during the implementation of the project? (You can tick multiple answers)

☐ By a single person (senior leader) having formal authority of the implementation (Programmatic)

☐ By allowing experts in specific areas to focus on their areas of expertise in the implementation (Functional)

☐ By autonomous implementation of the project by the PIs, without interference of their mother companies/ organizations (Project based)

☐ By having all the implementers sharing their knowledge and having all participants involved in any areas as need be (Matrix)

2. Please describe challenges related to project implementation structure (delegation of duties) that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved the challenges.

……
……
……
……

**Use of Communication Technology**

1. What kind of communication technology did you use during implementation of the project? (You can tick multiple answers)

☐ Mobile phones calls ☐ E-mails ☐ Social media ☐ Artificial Intelligence ☐ Video and web conferencing

2. Please describe challenges related to use of communication technology that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved the challenges.

……
……
……
……

**Part C: Resource Management**

**a) Resource Allocation**

1. What resources were necessary for successful implementation of the project? (You can tick multiple answers)

☐ Financial ☐ Technological ☐ Materials Machinery Natural resources Human resources

☐ Please describe challenges related to resource allocation that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved the challenges.

……
……
……

**b) Resource Adequacy**

1. Which tools were in place to evaluate adequacy of resources before commencement and during implementation of the project? (you can tick multiple answers)

☐ Procurement Plan ☐ Budget ☐ Bill of Quantities ☐ Project staff establishment Plan

2. Please describe challenges related to adequacy of resources that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved the challenges.

……
……
……

**c) Resource Optimization**

1. How did you ensure that the available resources were utilized optimally during implementation of the project? (You can tick multiple answers)

☐ Project planning ☐ Project scheduling ☐ Budgeting ☐ Dynamic Adjustment

2. Please describe challenges related to resource optimization that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved these challenges.

……
……
……
……

**Part D: Stakeholder Participation**

**a) Inclusivity in decision making**

1. At what levels were the community beneficiaries involved in discussions and decision making on matters of the project? (You can tick multiple answers)

☐ Project definition stage ☐ Planning stage ☐ Implementation phase
☐ Tapping of indigenous knowledge

2. Please describe challenges related to inclusivity of stakeholders in decision making that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved these challenges.

……
……
……

b) **Community Capacity Building**

1. What methods of developing and strengthening the knowledge, skills and abilities of the community stakeholders did the implementers use? (You can tick multiple answers)

☐ Skills development ☐ Training ☐ Seminars ☐ Demonstrations
☐ Engagement of the community in implementation works ☐ Exposure tours

2. Please describe challenges related to community capacity building that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved the challenges.

……
……
……

c) **Community Culture**

1. What cultural practices affected implementation of the project? (you can tick multiple answers)

☐ Distinctive gender roles ☐ Women property ownership restriction
☐ Joint community land ownership ☐ Pastoralism
☐ Low community formal education

2. Please describe challenges related to community culture that were experienced while implementing the project?

……
……
……

4. Please describe how you resolved these challenges.

……
……
……
……

**Part E: Regulatory Framework**

**a) Government Policies**

1. What government policies were required to be in place during implementation of the project? (You can tick multiple answers)

☐ Government licenses ☐ Public finance management regulations
☐ Public procurement and disposal regulations ☐ Government permits

2. Please describe challenges related to government policies that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved these challenges.

……
……
…… **b)**

**Community Agreements**

1. What community agreements were agreed by the stakeholders, for implementation of the project? (You can tick multiple answers)

☐ Creation of employment for the local community
☐ Development of local community infrastructure and facilities
☐ Charity work such as bursaries and sponsorship of needy students
☐ Protection of the environment

2. Please describe challenges related to community agreements that were experienced while implementing the project?

……
……
……
3. Please describe how you resolved the above challenges.
……
……
……

c) **Donor Intent**

1. What obligations were signed between the project donors and project implementers? (You can tick multiple answers)

☐ Utilization of funds
☐ Stakeholder participation
☐ Community Outreach Adherence to government or internationally accepted procurement and financial guidelines
☐ Compulsory periodic reports

2. Please describe challenges related to donor intent that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved these challenges.

……
……
……

**Part F: Climate Change Factors and Effects**

**a) Seasonal Variations**

1. In what ways was seasonal variations felt during implementation of the project? (You can tick multiple answers)

☐ Heat waves ☐ wild fires ☐ Failed rainy seasons ☐ Extended dry seasons
☐ Reduced temperatures

2. What were the results of seasonal variations to the community? (You can tick multiple answers)

☐ Reduced crop yield ☐ Increased soil erosion ☐ Increased food prices
☐ Reduced livestock population ☐ Invasion of pests and diseases

3. Please describe challenges related to seasonal variations that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved these challenges.

……
……
……

b) **Extreme Weather Conditions**

1. What have been the effects of extreme weather conditions during implementation of the project? (You can tick multiple answers)

☐ Drought ☐ Floods ☐ Diseases ☐ Water Scarcity ☐ Loss of livelihood

2. Please describe challenges related to extreme weather conditions that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved these challenges.

……
……
……

**4. Drought**

1. What were the effects of drought in the region? (You can tick multiple answers)

☐ Malnutrition ☐ Death of livestock ☐ Mental distress ☐ Death of people

2. Please describe challenges related to drought that were experienced while implementing the project?

……
……
……

3. Please describe how you resolved these challenges.

……
……
……

**Part G: Project Performance**

**Project Outcome**

| **Indicators** | **Strongly agree** | **Agree** | **Neutral** | **Disagree** | **Strongly disagree** |
|---|---|---|---|---|---|
| 1. Food productivity was increased as a result of the implemented project | | | | | |
| 2. Beneficiaries acquired new knowledge and skills for food crops farming | | | | | |
| 3. Malnutrition rate was reduced in the community | | | | | |
| 4. Enhanced sedentary pastoralism | | | | | |
| 5. Increased availability, storage and better usage of water in the community | | | | | |
| 6. Increased economic activities in the community | | | | | |
| 7. Venture in high value crops farming activities | | | | | |
| 8. Enhanced community education enrollment for children | | | | | |
| 9. Increased enrollment of women in formal education | | | | | |
| 10. Enhanced harmonization in gender roles | | | | | |

What are your views on the performance of the project that was implemented?

……

……

……

**Appendix E :Observation Checklist**

The following checklist was used to carry out observation:

| S/N | Item | Observed |
|---|---|---|
| 1. | Physical project site | |
| 2. | On-going activities | |
| 3. | Physical things present | |
| 4. | Weather condition | |
| 5. | Feelings expressed | |

## Appendix F : Ethics Committee Approval

MERU UNIVERSITY INSTITUTIONAL RESEARCH & ETHICS REVIEW COMMITTEE
(MIRERC)
*Email*: mirerc@must.ac.ke *Website*: *https://research.must.ac.ke/research-ethics/*

REF: MU/I/39/28 Vol.3 (136) Date: 3rd December, 2024

**Violet Kiende Murungi** (PhD, Business Management – MUST),
Prof. Guyo Huka, Dr. David Ntongai

Dear Ms. Murungi

**RE: Assessment of Strategy Implementation On the Performance of Climate Change Adaptation Projects in Kenya**

This is to inform you that *MIRERC* has reviewed and approved your above research proposal. Your application approval number is *MIRERC 051/2024*. The approval period is *3rd December, 2024– 2nd December, 2025*.

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by *MIRERC*.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to *MIRERC* within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to *MIRERC* within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to *MIRERC*.

You may also be required to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI), visit: https://research-portal.nacosti.go.ke and also obtain other clearances that your study may require.

Yours sincerely

pwm
Prof. Peter Masinde, Ph.D.
**Chairperson, MIRERC**

MUST IS ISO 9001:2015 and ISO/IEC 27001:2013 CERTIFIED

## Appendix G :Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **968057**

Date of Issue: **30/December/2024**

**RESEARCH LICENSE**

**This is to Certify that Ms., Violet Kiende Murungi of Meru University of Science and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Isiolo, Marsabit on the topic: Assessment of Strategy Implementation on the Performance of Climate Change Adaptation Projects in Kenya for the period ending : 30/December/2025.**

License No: **NACOSTI/P/24/414768**

**968057**

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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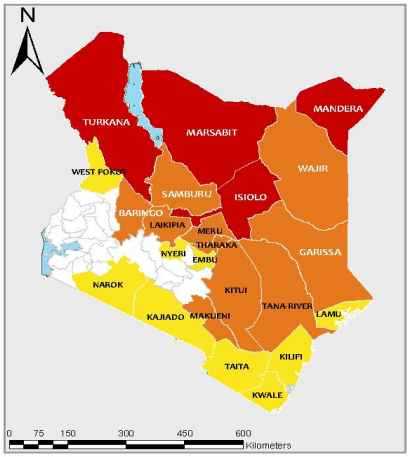
**See overleaf for conditions**

# Appendix H :IPC Acute Food Insecurity and Acute Malnutrition Analysis



## ACUTE FOOD INSECURITY PROJECTION MAP AND POPULATION TABLE (OCTOBER 2022 – DECEMBER 2022)




**Key for the Map**

**IPC Acute Food Insecurity Phase Classification**

- 1 - Minimal
- 2 - Stressed
- 3 - Crisis
- 4 - Emergency
- 5 - Famine
- Areas not analysed

**Evidence Level**

** Medium

**Population table for the projection period: October - December 2022**

| County | Total population analysed | Phase 1 | | Phase 2 | | Phase 3 | | Phase 4 | | Phase 5 | | Area Phase | Phase 3+ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | #people | % | #people | % | #people | % | #people | % | #people | % | | #people | % |
| Baringo | 349,173 | 104,752 | 30 | 104,752 | 30 | 104,752 | 30 | 34,917 | 10 | 0 | 0 | 3 | 139,669 | 40 |
| Embu | 272,357 | 136,179 | 50 | 95,325 | 35 | 27,236 | 10 | 13,618 | 5 | 0 | 0 | 2 | 40,854 | 15 |
| Garissa | 841,353 | 210,338 | 25 | 210,338 | 25 | 294,474 | 35 | 126,203 | 15 | 0 | 0 | 3 | 420,677 | 50 |
| Isiolo | 268,002 | 40,200 | 15 | 80,401 | 30 | 93,801 | 35 | 53,600 | 20 | 0 | 0 | 4 | 147,401 | 55 |
| Kajiado | 1,117,840 | 558,920 | 50 | 447,136 | 40 | 111,784 | 10 | 0 | 0 | 0 | 0 | 2 | 111,784 | 10 |
| Kilifi | 1,453,787 | 654,204 | 45 | 654,204 | 45 | 145,379 | 10 | 0 | 0 | 0 | 0 | 2 | 145,379 | 10 |
| Kitui | 1,136,187 | 454,475 | 40 | 340,856 | 30 | 227,237 | 20 | 113,619 | 10 | 0 | 0 | 3 | 340,856 | 30 |
| Kwale | 866,820 | 346,728 | 40 | 390,069 | 45 | 86,682 | 10 | 43,341 | 5 | 0 | 0 | 2 | 130,023 | 15 |
| Laikipia | 518,560 | 155,568 | 30 | 207,424 | 40 | 103,712 | 20 | 51,856 | 10 | 0 | 0 | 3 | 155,568 | 30 |
| Lamu county | 143,920 | 57,568 | 40 | 64,764 | 45 | 14,392 | 10 | 7,196 | 5 | 0 | 0 | 2 | 21,588 | 15 |
| Makueni | 987,653 | 395,061 | 40 | 345,679 | 35 | 197,531 | 20 | 49,383 | 5 | 0 | 0 | 3 | 246,914 | 25 |
| Mandera | 867,457 | 216,864 | 25 | 216,864 | 25 | 260,237 | 30 | 173,491 | 20 | 0 | 0 | 4 | 433,728 | 50 |
| Marsabit | 459,785 | 45,979 | 10 | 160,925 | 35 | 160,925 | 35 | 91,957 | 20 | 0 | 0 | 4 | 252,882 | 55 |
| Meru | 764,885 | 229,466 | 30 | 382,443 | 50 | 114,733 | 15 | 38,244 | 5 | 0 | 0 | 3 | 152,977 | 20 |
| Narok | 1,157,873 | 810,511 | 70 | 231,575 | 20 | 115,787 | 10 | 0 | 0 | 0 | 0 | 2 | 115,787 | 10 |
| Nyeri | 198,901 | 79,560 | 40 | 89,505 | 45 | 19,890 | 10 | 9,945 | 5 | 0 | 0 | 2 | 29,835 | 15 |
| Samburu | 310,327 | 31,033 | 10 | 108,614 | 35 | 124,131 | 40 | 46,549 | 15 | 0 | 0 | 3 | 170,680 | 55 |
| Taita | 340,671 | 102,201 | 30 | 187,369 | 55 | 34,067 | 10 | 17,034 | 5 | 0 | 0 | 2 | 51,101 | 15 |
| Tana river | 315,943 | 31,594 | 10 | 157,972 | 50 | 94,783 | 30 | 31,594 | 10 | 0 | 0 | 3 | 126,377 | 40 |
| Tharaka | 133,595 | 33,399 | 25 | 66,798 | 50 | 26,719 | 20 | 6,680 | 5 | 0 | 0 | 3 | 33,399 | 25 |
| Turkana | 926,976 | 92,698 | 10 | 278,093 | 30 | 370,790 | 40 | 185,395 | 20 | 0 | 0 | 4 | 556,185 | 60 |
| Wajir | 781,263 | 117,189 | 15 | 195,316 | 25 | 351,568 | 45 | 117,189 | 15 | 0 | 0 | 3 | 468,757 | 60 |
| West pokot | 621,241 | 465,931 | 75 | 93,186 | 15 | 62,124 | 10 | 0 | 0 | 0 | 0 | 2 | 62,124 | 10 |
| Total | 14,834,569 | 5,370,418 | 36 | 5,109,606 | 34 | 3,142,733 | 21 | 1,211,812 | 8 | 0 | 0 | | 4,354,545 | 29 |

*Note: A population in Phase 3+ does not necessarily reflect the full population in need of urgent action. This is because some households may be in Phase 2 or even 1 but only because of receipt of assistance, and thus, they may be in need of continued action. Marginal inconsistencies that may arise in the overall percentages of totals and grand totals are attributable to rounding.*

*Source: IPC (2022)*

**Appendix I :List of Climate Change Adaptation Projects**

**Marsabit**

| | | | |
|---|---|---|---|
| 1. | Walda Food Security and Moyale-Walda Irrigation Project | - | Uran |
| 2. | Sirata Irrigation Project | - | Logologo |
| 3. | Kalacha Irrigation Scheme | - | Kalacha |
| 4. | Madoadi Small Scale Irrigation and Production Project | - | Sololo |
| 5. | Khandere Irrigation Scheme | - | Kinisa |
| 6. | Songa Farmers Irrigation Scheme | - | Karare |

**Isiolo County**

| | | | |
|---|---|---|---|
| 1. | Kenya Climate Smart Agriculture Project | - | Oldo Nyiro |
| 2. | Elsa Ntirimi Water Project | - | Burat |
| 3. | Rapsu Irrigation Scheme | - | Kina |
| 4. | Attan Irrigation Project | - | Ngaremara |
| 5. | Sukuma Integrated Community Project | - | Ngaremara |

**Appendix J :State of Climate Change Adaptation Projects**

Walda Irrigation Scheme in Uran.

Madoadi Irrigation Scheme (Sololo)

Elsa Ntirimi Water Project (Burat)

Elsa Ntirimi Water Project Irrigation Scheme (Burat)

Parcels at Sirata Irrigation Scheme (Logologo)

Parcels at Sirata Irrigation Scheme (Logologo)

Kalacha Irrigation Scheme

Khandere Irrigation Scheme (Kinisa)

## Appendix K : Resource Management and Performance of Climate Change Adaptation Projects in Kenya

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# Resource Management and Performance of Climate Change Adaptation Projects in Kenya

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*Resource Management*

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*Adaptation*

*Project Performance*

ABSTRACT

Climate change adaptation has emerged as a crucial area of concern due to Kenya's susceptibility to climate change effects. Many climate change adaptation projects have been implemented across the country, both government and donor funded. This study examined the effects of resource management on the performance of climate change adaptation projects in Kenya. 11 climate change adaptation projects in Marsabit and Isiolo Counties, Kenya, with a total of 2,021 beneficiaries were targeted. A sample of 334 respondents was derived using Slovin's Formula. Data collection tools included questionnaires for beneficiaries, interviews with key informants, and field observations. Data was analyzed using SPSS and Microsoft Excel. Descriptive statistics (mean and standard deviation) described the data, while inferential statistics (correlation and regression analysis) assessed relationships between variables. A strong positive correlation was found between resource management and project performance (correlation = 0.409, p=0.000). The regression analysis indicated a statistically significant effect (F = 50,355, p = 0.000) with a coefficient B= 0.393, suggesting that resource management positively influenced project success. The Adjusted R Squared attained was 0.168, which implied that resource management had a poor effect in explaining project performance. The study concludes that resource management is a critical factor for successful implementation and enhancing performance of climate change adaptation projects. It recommends that project implementers should identify, allocate and ensure adequacy of the necessary resources for implementation of projects. The study further recommends resource optimization for efficient utilization of available resources.

## Introduction

Resources are the essential inputs—both tangible and intangible—that enable organizations to pursue and achieve their strategic goals. According to Thompson et al. (2015), resources constitute the productive assets available within an organization's internal and external environment. Effective resource management not only facilitates goal alignment but also supports the timely execution of tasks and projects.

Resources can be categorized as tangible—including land, machinery, and equipment—and intangible, such as knowledge, competencies, technological capacity, time, and financial assets (Pearce & Robinson, 2007). While some resources, like fossil fuels or minerals, are non-renewable and finite in supply, others are renewable and capable of regeneration.

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## Appendix L :Effects of Institutional Characteristics on the Performance of Climate Change Adaptation Projects in Kenya

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# Effects of Institutional Characteristics on the Performance of Climate Change Adaptation Projects in Kenya

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ARTICLE INFO

**Keywords**

*Institutional Characteristics*

*Climate Change*

*Adaptation*

*Project Performance*

ABSTRACT

Climate change poses a major threat to Kenya's socioeconomic development, particularly in sectors like agriculture. Consequently, a number of climate change adaptation projects have been implemented across the country. However, these efforts have not shown results community impact. The objective of this study was to establish the effect of institutional characteristics on the performance of climate change adaptation projects in Kenya. Both quantitative and qualitative methods were used to analyze data. The target population was climate change adaptation projects in Marsabit and Isiolo, counties, Kenya, with a total of 2,021 target population. Using Slovin's Formula, a sample of 334 respondents was derived. Data collection tools included interviews with key informants, questionnaires for beneficiaries, and field observations. Data was analyzed using SPSS and Microsoft Excel. A positive correlation was found between stakeholder participation and project performance, (correlation = 0.531, p=0.000). The regression analysis indicated a statistically significant effect (F = 97.929, p = 0.000) with a coefficient β1=.199, which suggests that institutional characteristics positively influences project performance. The study concludes that sound institutional characteristics is a critical factor in enhancing performance of climate change adaptation projects. It recommends cultivation of transformative leadership styles, adoption of project implementation structures with clear flow of command, and use communication technology in implementation of the projects.

## Introduction

The institutionalization of strategy is a step in its implementation. This is the process of aligning a strategy with an organization's institutions. According to Palmer D. & Biggart M. (2005), organization's institutions can be described as the internal systems of an organization. An organization's institutions include, but are not limited to, its leadership, organizational structure, culture, procedures, operational support systems, and policies. These are elements that are inherent in an organization and they vary from one organizational to another (Robinson L. W. & Berkes F., 2010). Different organizations implement various strategies that are thought appropriate to help them realize the goals and objectives they have been given. In cases where this is not so, organizations should adjust the institutional factors to support the strategies.

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