AN ANALYSIS OF THE EFFICACY OF COMMUNICATION IN CLIMATE CHANGE MITIGATION IN A REDD+ PROJECT IN CHYULU HILLS, KENYA.

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DECLARATION

This research project is my original work and has not been presented for a degree in this or any other University. No part of this project may be reproduced without prior permission of the author and/or the University of Nairobi.
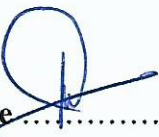
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K50/34246/2019

This research project has been submitted with my approval as University Supervisor.

Supervisor   **Signature** .... **Date** 1/12/2022

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DEDICATION

I want to dedicate this work to my family, particularly my spouse George Tarus who has supported and encouraged me in this academic journey.

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LIST OF ACRONYMS /ABBREVIATIONS

CCB: Climate, Community and Biodiversity

CCRC: Chyulu Hills Conservation & Research Centre

CHCT: Chyulu Hills Conservation Trust Board

COP: Conference of Parties

CHRP: Chyulu Hills REDD+ Project

FCPF: Forest Carbon Partnership Facility

GHG: Green House Gas

IPCC: Intergovernmental Panel on Climate Convention

KFS: Kenya Forest Service

KWS: Kenya Wildlife Service

MWCT: Maasai Wilderness Conservation Trust

NDC: Nationally Determined Contribution

NCCAP: National Climate Change Action Plan

NBCS: Nature Based Climate Solutions

PES: Payment of Ecosystem Services

REDD+:   Reducing Emissions from Deforestation and Forest Degradation, plus the

sustainable management of forests, and the conservation and enhancement of

forest carbon stocks in developing countries

SDGs: Sustainable Development Goals

TCA: Tsavo Conservation Area

UNEP: United Nations Environmental Programme

UNFCCC: United Nations Framework Convention on Climate Change

VCS: Verified Carbon Standard

ABSTRACT

The purpose of this study was to analyze the efficacy of communication in climate change mitigation in a REDD+ Project in Chyulu Hills, Kenya. The project's goal is to reduce emissions from deforestation and forest degradation (REDD) while also benefiting local communities in the Chyulu Hills Ecosystem. The specific objectives of the study were to: examine the communication activities carried out by the Chyulu Hills REDD+ Project in mitigating climate change; to assess the effectiveness of the communication activities carried out by the Chyulu Hills REDD+ project in mitigating climate change; to identify the communication barriers to the effective adoption of the REDD+ project as a climate change mitigation mechanism and to examine the methods of communication preferred by the stakeholders of the Chyulu Hills REDD+ project. Participatory communication theory and diffusion of innovation theory influenced the research. The study used an evaluative research design and a mixed-method approach that included both qualitative and quantitative research methods. Key informant interviews (KII) and questionnaires were used to collect data using both qualitative and quantitative methods. Data was analyzed qualitatively as well as quantitatively. The quantitative data was analyzed using descriptive statistics and the Statistical Package for Social Sciences (SPSS). Content analysis was used to analyze qualitative data, and data was coded and organized into thematic areas. Quantitative information was presented in charts and tables, whereas qualitative information was presented in prose. The study found that community members were aware of what REDD+ is. They learned at community meetings and workshops. The study revealed that community engagement was the most effective and popular communication approach used by the project to communicate to communities about the project activities. Furthermore, the study's findings established that, despite the effectiveness of the various communication approaches used by the project, there existed communication barriers that affected the adoption of the REDD+ Project as a climate change mitigation mechanism. These barriers included: information/knowledge share, distrusting information sources, complexity nature of REDD+ information, and a lack of enabling communication infrastructure. The study also revealed that when it came to the stakeholders choosing a preferred channel of communication, the respondents preferred the project to use community radio. The conclusion of the study revealed that despite the complex nature of climate change communication particularly on REDD+, the efficacy of communication is crucial. There are many aspects in which REDD+ projects can communicate to its stakeholders and communities, and this can only be achieved if the project uses the appropriate channels of communication as well as communication approaches when carrying out project activities.

CHAPTER ONE

1.0 Introduction

This chapter provides context for the research. This section provides an overview of the climate change debate and how REDD+ came to be. It brings to light the background information of the Chyulu Hills REDD+ Project and geographical information of the Chyulu Hills. The chapter also discusses the problem statement, study objectives, study justification, significance and scope, and limitations.

Background to the study

As regions around the world experience the effects of climate change, the debate over the matter intensifies. Most people have suffered as temperatures have risen, rainfall has become more variable, and the occurrence of unpredictable weather conditions such as floods, hurricanes, and droughts has intensified. The Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC) has confirmed that climate change is one of the most urgent issues of our time. (UNFCCC, 2011). Climate change refers to weather changes caused by human activity that reduce the formation of the global ambiance, as well as natural climate unpredictability noted in similar times (UNFCCC, 1992).

In this regard, governments around the world are working hard to develop action plans and policies that support climate change mitigation and adaptation to combat the climate change effects during these challenging times. The climate change conference was held in Geneva in 1979 to encourage professionals and climate change experts to deliberate issues concerning the unpredictability caused by human actions, as well as to discuss the way forward and provide the necessary guidance (World Meteorological Organization, Secretariat, 1979). In 1988, the Intergovernmental Panel on Climate Change (IPCC) was founded. The panel's goal was to provide technical expertise and information to nations around the world to help them develop policies and approaches (IPCC, 2013).

Furthermore, in 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was established in 1992 and formally adopted in 1994. Since then, the UN Framework Convention on Climate Change (UNFCCC) has been a driving force behind global climate action particularly in encouraging countries to cut greenhouse gas emissions to prevent the most disastrous impacts of climate change. The Kyoto Protocol was drafted in 1997 at the third UNFCCC conference of the parties (COP-3) and went into effect in 2005. The protocol

advocated lowering greenhouse gas emissions. The parties also pledged to reduce these gases using natural solutions such as renewable energy and reducing forest degradation and degradation. Many developing nations have promised to combat climate change through programs since then.

In 2005, the United Nations Framework Convention on Climate Change (UNFCCC) included REDD+ (Reducing Emissions from Deforestation and Forest Degradation) as a mitigation mechanism (UNFCCC). This mechanism seeks to compensate developing nations for reducing carbon emissions through reduced forest degradation and deforestation. The initiative also promoted sustainable management of forests, as well as the conservation and improvement of forest carbon stocks (Muszyska, 2017).

In 2007, the Intergovernmental Panel on Climate Change (IPCC) through its fourth assessment report, raised concerns about emissions from land use and forestry. According to the report, land use change and desertification account for 17.4% of total global greenhouse gas (GHG) emissions (Metz et al., 2007). By far the most significant contributors to emissions of greenhouse gases are forest degradation and deforestation. As a result, policies relating to land use change and forest activities, such as REDD+, have been developed to significantly reduce these emissions.

Kenya is a developing country that has made significant efforts in the region to reduce desertification. Furthermore, the county has set some goals for conserving and managing forests, as well as increasing forest carbon stocks. However, the country faces numerous challenges as a result of the annual loss of hectares of forest due to deforestation. The demand for firewood, timber, charcoal, grazing land, settlements, infrastructure development, and conversion to agricultural land all pose threats to these forests. As a result, the government has embraced REDD+ as an opportunity to improve forest governance and achieve the 10% tree cover target by 2022. REDD+ has also enabled countries such as Kenya to reduce emissions and offset their carbon footprint, preserve flora and fauna, protect watersheds, prevent climate change, and improve livelihoods.

The Chyulu Hills are an important ecosystem in a water-stressed and semi-arid landscape. They are part of the larger Tsavo Conservation Area (TCA) and serve as an important wildlife corridor connecting Tsavo and Amboseli National Parks. Maasai pastoralists and Kamba

communities have also lived in the area for many years. The Chyulu Hills also serve as an important water source for the surrounding communities, supplying water to Mombasa via the Mzima Springs. Despite this, the Chyulu Hills have been threatened by a variety of threats, including tree harvesting for timber, charcoal, and firewood, conversion to agriculture and settlement, and fire. As a result, this region was chosen for the REDD+ project.

The Chyulu Hills REDD+ Project (CHRP) is a collaborative effort involving multiple partners to support mitigation and adaptation of climate change, biodiversity protection along with restoration, and economic support meant for local communities. The project is supported by nine key partners, ranging from the government to non-governmental organizations and local communities. Kenya Forest Service (KFS), Big Life Foundation, Kenya Wildlife Service (KWS), David Sheldrick Wildlife Trust, Maasai Wilderness Conservation Trust (MWCT), and four Maasai group ranches (Mbirikani, Kuku, Kuku A, and Rombo) are among them (VCS Report, 2016).

The project began on 19th September 2013 and is expected to last until 19th September 2043, when the Green House Gas (GHG) accounting period of 30 years will end. The Verified Carbon Standard (VCS) and the Climate, Community, and Biodiversity (CCB) standards both require the project to generate climate, community, and biodiversity benefits. Furthermore, during the crediting period (30 years), the project aims to prevent the emission of 37,765,494 tCO2e by halting deforestation, forest degradation, and grassland conversion (VCS, 2017).

In this regard, the project requires the active participation of all stakeholders to further strengthen its capability to fulfill its mandate. This can be accomplished if the general public and other stakeholders are aware of REDD+ and its impact on society. Equally important, the Chyulu Hills REDD+ project must effectively communicate project progress. Thus, achieving meaningful engagement of stakeholders is especially difficult without effective communication that reaches its' audiences, well-developed persuasive messages, and proper message delivery to those audiences. According to Moser (2017), climate change is no longer just a scientific concept, but rather a lived reality, and thus communication about it is a critical and rapidly growing need. As a result, interpretation is required.

1.1 Statement of the problem

The effects of climate change have resulted in most countries adopting Nature-Based Climate Solutions (NBCS) and sustainable development models to adapt to and mitigate climate change. As a result, communication must be established in order for these measures to be implemented. People must be well-informed about the change in climate and understand how they can respond to it (Parry et al., 2007). Nonetheless, the complexity of climate change information, particularly REDD+, poses a challenge to REDD+ project communities and stakeholders. There has been a lack of understanding of REDD+ in the communities. For example, there is a lack of clarity about how carbon is measured, how carbon credits are calculated, how revenue is shared and distributed, and how carbon credit improves livelihoods.

The project has had numerous communication issues, according to the CHRP 2016 Monitoring and Implementation Report. These are the following concerns: communities not receiving project information on time; a lack of awareness at the sub-locational and village levels; communities not being informed on every new stage of the project; insufficient notice boards and suggestion boxes in public places; and a lack of awareness and education about the CHRP among project partners' staff (VCS, 2016).

Furthermore, because the project is a multi-partner initiative involving nine entities, communication has been a significant challenge in bringing synergies among the nine entities. Each project partner is expected to do their part to help the organization reach its goal. However, they all work together to ensure the success of the REDD+ Project. Understanding how they collaborate to achieve synergies necessitates understanding how they communicate and interact. This, however, has not been the case. As a result, it is important to assess the efficacy of communication in climate change mitigation in the Chyulu Hills REDD+ project in order to improve effective and efficient communication with communities and different stakeholders, raise awareness, improve perception of REDD+ issues, and establish synergies between project partners.

1.3 Objectives of the study

The overall objective of this study was to analyze the efficacy of communication in climate change mitigation in the Chyulu Hills REDD+ project.

Specific Objectives

The objectives specific to the study were;

1) To examine the communication activities carried out by the Chyulu Hills REDD+ Project in climate change mitigation.
2) To assess the effectiveness of the communication activities carried out by the Chyulu Hills REDD+ project in climate change mitigation.
3) To identify communication barriers to the effective adoption of the REDD+ project as a climate change mitigation mechanism.
4) To examine the methods of communication preferred by the stakeholders of the Chyulu Hills REDD+ project.

1.5 Rationale and Justification of the study

Governments and nations across the world are using REDD+ as a measure to mitigate climate change. For instance, this measure is used in Kenya to achieve 10% forest cover. However, many misconceptions, misinformation, and information on REDD+ among various stakeholders have been overlooked in previous research. This study will have a reasonable impact on the current research gap and the literature in the area by trying to analyze the efficacy of communication in climate change mitigation in the Chyulu Hills REDD+ Project.

1.6 Significance of the study

The study is crucial to the Chyulu Hills REDD+ Project and other current and upcoming REDD+ projects in Kenya. This study was to suggest more innovative communication tools and mechanisms that climate change projects within the country can use to timely access, share, and utilize information on climate change mitigation and build synergies among project partners. Moreover, the study's outcome is valuable to all communication practitioners and researchers. It helps bring their understanding of climate change issues, particularly on REDD+.

1.7 Scope and Limitations of the study

The investigation was limited to Chyulu Hills REDD+ Project. The researcher was unable to visit all the REDD+ projects in Kenya, considering the limitations of time demanded by academic research for the award of this Degree. Therefore, the sample size obtained from this project represents all the others.

1.8 Operational Definition of Terms

Climate change: Climate change refers to weather changes caused by human activity that reduce the formation of the global ambiance, as well as natural climate unpredictability noted in similar time (UNFCCC, 1992).

Climate change mitigation: Attempts to reduce greenhouse gas emissions are referred to as climate change mitigation

Communication: Communication is the means of acquiring all crucial information, understanding, and effectively distributing the information to people who might require it (Zulch, 2014).

Efficacy of communication: communication is effective when it achieves its objectives and attains the planned purpose.

Climate change communication is the transmitting and sharing of information on the causes and impacts of climate change; the response measures (both mitigation and adaptation) to climate change to raise awareness, influence attitudes and change behavior.

REDD+: It is a climate change mitigation financial mechanism for developing countries meant for cutting down emissions from forest degradation and deforestation. The + stands for sustainable management of forests, conservation, and increase of forest carbon stocks.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section explains the literature and studies that have previously been conducted and are pertinent to this research.

2.1 Climate Change and REDD+ Communication

Climate change communication is a critical topic in society today. It has become one of those topics that have received much attention as communication in the field of health, risk, and science (Nerlich et al., 2010).

Hulme (2007) argues that climate change communication goes beyond simply informing people about what climate change is. Hence, it has become a critical matter that needs to be re-examined.

According to Ferrari (2010), climate change communication occurs even within the REDD+ frameworks. The author suggests that communication comes into place when you engage forest-dependent communities on REDD+ in the following ways: first, informing them of climate change as a problem, second, providing them with some knowledge on carbon storage, third, enlightening them of the likelihoods of forestry carbon credits and finally guaranteeing them the carbon forestry outcomes.

The discussion on communication regarding climate change resulted in a set of guidelines during the international conference on climate change convened in Ontario, Canada, in 2000 (Andrey and Mortsch, 2000). The authors believed that these guidelines could aid in the beginning of communicating climate change related to REDD. It was suggested that the "General Communication Guidelines" be used. These include clearly defined communication goals, identifying and describing the intended audiences, having knowledgeable and committed communicators, developing communication partnerships, having two-way communication, and finally learning from other fields, particularly risk communication (Ferrari, 2010).

According to research, communicating REDD+ issues is critical in achieving climate change mitigation initiatives. This entails improving communication and distribution of information between the local REDD+ projects and the state level. As a result, all levels of the REDD+ governance structure must be improved (Wertz-Kanounnikoff & Angelsen, 2009).

According to Park et al. (2013), having various means of sharing REDD+ information, such as reports, seminars, and electronic files, will promote REDD+ communications among stakeholders. Furthermore, it is critical to promote discussions between REDD+ project representatives and managers. They can provide pertinent information for the administration of a REDD+ scheme.

However, (Wibowo et al., 2013) acknowledge that most people don't have enough information about climate change and its causes and effects on society. This is due to the fact that information is mainly covered in scientific journals and surrounded by terminology and difficult mathematical models. As a result, many people affected by REDD+ are unable to access it.

Furthermore, several researchers have confirmed that REDD+ projects face a number of challenges. These include communicating to communities what REDD+ is, the benefits and drawbacks, and the rights and responsibilities that come with this mitigation measure; engaging communities during the project design and implementation stages; and promoting conservation while also considering community well-being (Resosudarmo et al., 2012). Within this context, REDD communication becomes associated with a conflictive framework for communication in which content is strategically decided on levels far removed from the localities where forest resources are located. (Ferrari (2010) suggests that we structure the communication problem within social constraints. Furthermore, the author contends that communicating REDD is heavily repressive and influential.

Furthermore, communities rely on REDD+ advocates to obtain relevant information about REDD+. These advocates' role is to spread local knowledge and raise awareness about REDD+ (Resosudarmo et al., 2012). Park et al. (2013), on the other hand, recognize a communication challenge in developing countries. The scholar claims that there is a shortage of information during the execution of REDD+ activities. Furthermore, there is a breakdown in communication between developed and developing countries.

Angelsen (2009) recognizes the ongoing development of national REDD+ strategies when conceptualizing REDD+ issues. The scholar, on the other hand, identifies communication as one of the most significant challenges for REDD+ projects. According to Wibowo et al. (2013), the framework for REDD+ communication should include the following elements:

identifying the characteristics of the proposed audience or participants; ensuring those working on the frontlines are informed and dedicated; developing communication partnerships to ensure that information flow is not only one way but two; and learning from other sectors, particularly about the risks involved in communication.

Furthermore, skeptics have pointed out that in order to be more equitable and inclusive, REDD+ must address three critical facets: climate change, biodiversity, and local livelihoods (Adhikari, 2009). The success of the REDD+ Projects, on the other hand, will be dependent on careful design and actual participation by local stakeholders in project implementation and maintenance, as well as how REDD+ issues are communicated at the local level (Adhikari, 2009).

Standing and Gachanja (2014) show that Kenya has made considerable progress toward REDD+ readiness. However, the authors acknowledge that participation is difficult because stakeholder meetings are controlled by the central government and external consultants who set the agendas and choose the participants. According to the researchers, this is a forum for analytical debate, and people who are critical of the government or REDD+ are typically excluded.

Furthermore, the researchers believe that most Kenyans think that REDD+ is only known to a small group of government officials, NGOs, and academics. According to the researchers, there is a lot of misunderstanding and technicality surrounding REDD+. It is due to the fact that there are numerous models for organizing REDD+ at the local and government levels. There is an assumption, however, that knowledge of REDD+ is limited at the community and constituency levels. Nonetheless, the government and the more prominent NGOs in Kenya appear to be making little effort and providing little funding to undertake in-depth capacity building on REDD+ among Community Forest Associations (CFAs) or county and local authorities (Standing & Gachanja, 2014).

Furthermore, (Milbank et al., 2018) confirm in REDD+ communication that REDD+ projects must be assessed by independent assessors during the authorization stage and throughout the project cycle in accordance with the CCB Standards. These processes, according to researchers, necessitate transparency and accountability in terms of reporting. Project managers must always find an efficient way to communicate this information to evaluators via reports.

According to the researchers, the CCB standards established some guidelines that were not fully utilized by projects, resulting in a critical communication challenge.

In Kenya, for example, there is no obvious online platform for disseminating REDD+ information or tracking the performance of REDD+ projects (Standing and Gachanja, 2014).

2.2 Project Communication

Communication performs a vital role in the life cycle of a project. It influences its' success (El-Saboni et al., 2009). It entails the distribution of information and knowledge (Robbins, 1993) among several participants of the project (Allen et al., 1980) (Katz, 1982). Project communication significantly contributes to the success of the project, whereas weak project communication can immensely impact the project's outcome in terms of performance (Katz, 1982).

According to Drinkwater (2007), communication is the "lifeblood" of projects and organizations. The scholar believes that communication functions similarly to the heart, which distributes oxygen throughout the body. It means that the communication cycle and information flow are iterative and will last the duration of the project.

Furthermore, Harrington and McNellis (2006) contend that communication strengthens the bond between project donors and stakeholders. Furthermore, providing and distributing the correct information to the appropriate audience in real time facilitates teamwork within the project.

The Shannon Weaver model of communication, as modified by Norbert Weiner, is depicted in the diagram below, and it clearly shows how communication flows internally and externally between the sender and receiver in a project or program.

The critical components of the model include the following:

• Sender/ Information source. This marks the start of the information cycle. It entails a person or object that has the information to send.

Encode. It entails translating ideas and thoughts into a language that others understand

• Message and feedback message. The result of interpreting.

• Medium. The medium through which the message is communicated.

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• Noise. Anything that hinders the transmission and interpretation of the message.

• Decode. It is translating the message into something meaningful to or that makes sense.

• Receiver. This is the endpoint of the communication cycle. This is the person who ultimately gets the message.

• Feedback. Shannon and Weaver did not initially propose this step in 1948. Norbert Weiner came up with the feedback phase as a result of numerous criticisms of the one-way approach of communication. According to Nobert Weiner, feedback occurs when the recipient of the message returns to the sender of the message to close the disparity of communication.
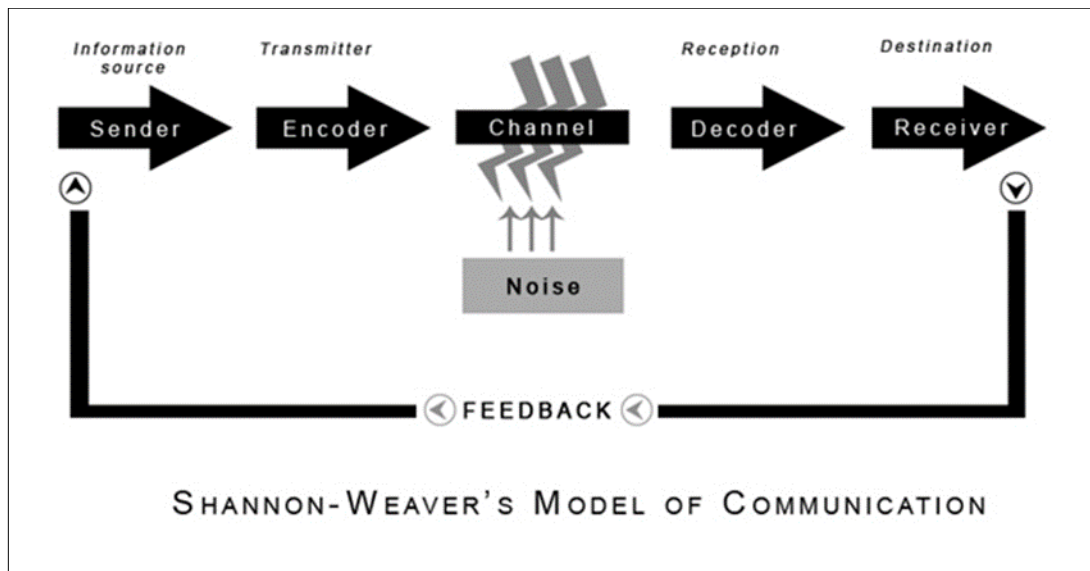
Figure 1: Shannon *Weaver Model of Communication (Adopted from Mehra, 2009).*

Based on the elements of this model, project communication needs to emulate and understand every stage of this communication cycle. It is the duty of the sender to come up with clear, simple, and complete information so that the receiver can interpret and understand the message. On the other hand, the receiver of the message is accountable for ensuring that the message is accurately received and accepted. Consequently, in case of any breakdown in communication, then the project will be negatively impacted (Čulo & Skendrović, 2010).

2.2.1 Efficacy of Project Communication

Efficacy in communication is one of the most crucial aspects in project success (ulo & Skendrovi, 2010). Having a solid communication foundation strengthens and integrates all other aspects of the project (Zulch, 2014). Communication is efficient when it achieves its

goals and realizes its meant purpose. However, in order to determine its effectiveness, a more detailed list of qualities that describe the effectiveness of the communication process is required.

In her research, Zulch (2016) recognizes that effective communication is a critical component of project success. It entails putting the stakeholders of the project on the right path to achieve the goal of the project. Furthermore, communication aids in the resolution of issues, conflicts, and misunderstandings among stakeholders.

Furthermore, Zulch (2014) considers effective communication has to have the following characteristics: the message is appropriately understood and ensures that it reaches the right people on time; a platform for feedback, accessibility of communication materials, provides open lines of communication between the stakeholders and teamwork communication.

According to Weaver (2007), effective communication includes the relevance and timeliness of communicated information and feedback. Furthermore, the scholar emphasizes other facets of communication such as sincerity and credibility of information. Similarly, the researcher proposes the use of the right communication channel and messenger and the avoidance of unnecessary noise during the transmission process. Following the communication act that guides the communication process is another important characteristic of effective communication.

Further discussions by Naaranoja & Savolainen (2016) suggest that communication is effective when the right and appropriate information is conveyed to the stakeholders of the project in a timely and lucrative manner. Besides, they recognize that communication should be simple, duplicable and allow feedback.

In addition, Bourne (2016) suggests that communication should be organized and implemented in a way that considers the preferences and approaches of the project's stakeholders. The researcher also acknowledges various aspects of effective communication. These include ensuring that the information achieves its envisioned purpose, clarifying communication's purpose, designing the message to suit a particular audience, reiterating the message to achieve the desired effect, making information easily accessible and disseminating information through various channels of communication.

On the other hand, there are various barriers to effective project communication. Several works of literature identify some barriers to effective project communication, such as the complex nature of the project, the culture of the organization, and trust issues among project staff. According to Stead et al., (2009), most projects are complex because they involve multiple stakeholders and information that is shared across numerous organizational boundaries.

According to Remidez and Jones (2012), communication becomes difficult in projects due to their natural structure. This is because projects have team members with varying levels of expertise who must collaborate and work as a unit.

According to Muszyska (2017), it is critical to have a clear communication plan or strategy. This is due to the difficulty of keeping everyone up to date and well informed. When there is poor communication, there is a chance that the project stakeholders will have a misunderstanding, which will lead to conflicts and people not knowing how far the project has progressed toward its goals. As a result, communication is critical and should be used effectively throughout the project's lifespan.

2.3 REDD+ Project Communication Activities
2.3.1 Information Sharing and Management
Perhaps the most obvious and easily grasped recommendation is to improve public access to REDD+ information. Along with the right to information, proactive transparency for REDD+ is required. In this case, "proactive" refers to the responsibility to make specific information freely available without requiring people to request it. Many of the REDD+ documents produced during the readiness phase have not been published, or are only available in obscure locations, such as the websites of the consulting firms involved. Because many drivers of forest desertification are associated with activities related to use of land, community-level information sharing is also critical to the success of REDD+.

2.3.2 Community engagement
Community engagement is a two-way communication process that incorporates community wishes, concerns, needs, and beliefs into the policy development including the preparation, decision making, service delivery, and evaluation of the project (United Nations, 2005).

Involving communities in decision-making that affects them has been shown to have a number of positive outcomes, including improved strategy and program design and implementation

(DSE, 2005). These advantages include increasing and expanding local participation, promoting and supporting project ownership by the local communities, improving key policy issues, increasing trust, transparency, and credibility of policymaking processes, and strengthening social systems (McKinney & Harmon, 2007).

In the context of climate change, participation of the community is critical in the development and implementation of mitigation and adaptation policies and programs (Moser & Dilling, 2007). Further, climate change studies have identified local community involvement as a critical component in implementing and maintaining appropriate adaptation strategies. (Nunn, 2009). For instance, According to a report done by the International Union for Conservation of Nature (IUCN), local communities should be included in the climate change discourse, and there should be a greater emphasis on researching, documenting, and circulating strategies to adapt to climate change (Macchi et al., 2008).

In addition, according to Grimm et al. (2016), it is critical to disseminate climate change information at the local level and involve local stakeholders in the process. Having a fair and unbiased engagement of communities has been recognized as a critical criterion for REDD+ and other mitigation programs for climate change (UNFCCC 2010) community engagement in REDD+ has been insufficient in many places. (Danielsen et al. & Lawlor et al. 2013, Bayrak & Marafa 2016).

Furthermore, almost universal agreement exists that communities must involve projects in a fair and equitable manner. (Enrici & Hubacek, 2018). However, communities adjacent to forests are frequently excluded from public decision-making processes, despite the fact that they rely on the forest for their social and economic well-being. In comparison to other stakeholders, communities play a critical role in developing and implementing REDD+ activities. They are prioritized in REDD+ implementation due to their traditional knowledge and connection to the forest.

2.3.3 Stakeholder Engagement

Stakeholders are individuals, groups, or organizations who may have an impact on, be impacted by, or identify themselves as being affected by a project or program decision, activity, or outcome (Guide, 2000). As each project is exceptional, so are its stakeholders. They

are likely to have a shifting set of values, expectations, and ideas hence the need for effective engagement.

Stakeholder involvement is critical to the success of any project. It entails the project team involving stakeholders through various communication practices, processes, and actions in order to secure their participation and commitment or reduce their disinterest. Through engagement, project stakeholders are made aware of the project and its outcomes, and they are prepared. to participate in and be interested in the work (Bourne, 2016). In some instances where there is project opposition, it results from insufficient or inexplicable communication. Stakeholders with a differential understanding of technical aspects, varied communication preferences, and impact levels require multiple and diverse communication methods (Nget al., 2014).

Additionally, Bourne (2016) further depicts that stakeholder engagement involves using various communication techniques such as reporting, Project Relations (PR) and direct communication. According to the researcher, Reporting is the frequent communication that provides project information. Through reporting, assurance is provided and helps the project deal with the unexpected. On the other hand, Project relations (PR) or project marketing encompasses all broadcast communications required to inform the broader stakeholder community about the project. Furthermore, direct communications highlight the critical stakeholders who are recognized through the stakeholder circle's 5-step process, which includes identifying all stakeholders, positioning to determine who is important, envisioning to know the overall stakeholder community, engaging through effective communications, and observing the impact of the engagement (Bourne , 2016).

Numerous studies in the context of REDD+ agree that stakeholder participation in decision making will contribute to the successful implementation of REDD+ activities. Stakeholder participation in decision-making could provide a platform and more opportunities for interested stakeholders to participate in project activities. Furthermore, fairness in the division of power among stakeholders may improve their roles in REDD+ implementation and the sustainability of natural resource management (Boutthavong et al., 2017).

According to Daviet et al., & Lyster (2011), stakeholder engagement provides a forum for affected stakeholders to participate in the decision-making processes especially at the national

level. Furthermore, stakeholder participation helps minimize conflict and improve the sharing of benefits. In the Democratic Republic of the Congo, for example, a study was conducted to assess the importance of stakeholder engagement. The study's findings revealed that the participation of numerous stakeholders in decision making is critical to REDD+ enhancement. (Aquino & Guay, 2013).

Stakeholder engagement in REDD+ implementation, according to studies, also has some drawbacks. (Daviet et al., 2011) contend that the distinct features in terms of interests in decision-making among the stakeholders can lead to disagreements. A study conducted in Vietnam, for example, revealed that REDD+ execution processes are concentrated in the main government. As a result, it limits the participation of other stakeholders (Pham, et.al 2014). Thus, it has become commonplace that participation of stakeholders in REDD+ cannot be debated without the influence of the political powers (Brockhaus et al., 2014).

2.4 Tools and Methods Used for REDD+ Project Communication

For any project's success, certain procedures and standards related to various project areas are critical in implementing and managing a project. The use of communication tools and methods, especially in this modern digital world, is indispensable. For instance, additional guidelines must be observed in projects co-financed from European funds, including regular reporting of the project progress and associated expenses (Muszyńska, 2017). Additionally, information must be distributed among stakeholders via various channels of communication for projects to have effective communication. Websites, emails, phone calls, video and web conferencing, and print materials are examples of these channels

Dow & Taylor (2010) identified five different internal communication methods used in managing projects. They include oral, written, visual, and non-verbal and electronic communication. Meetings, conferences, interviews, broadcasts, and dialogues, both face-to-face and over the phone, are all examples of oral communication. Letters, emails, flyers, memos, and meeting minutes are all forms of written communication. Furthermore, non-verbal communication entails conveying messages through gestures, appearances, or attitudes, whereas electronic communication can be delivered and obtained through electronic mail, and fax services. Finally, graphic communication occurs through presentations and videos.

According to (Chong, 2007), external communication primarily focuses on public relations activities aimed at building the company's corporate image, whereas internal communication focuses on internal employees of the company. In this regard, there is a need to have a multi-pronged approach to communicating REDD activities and REDD+ principles by projects.

2.4.1 Community Radios

Radio is one of the main mediums used to disseminate REDD+ and climate change information to the local communities. This medium has the most comprehensive coverage within the media landscape, particularly in Kenya. The availability of community radios within REDD+ Projects zones provides a valuable platform for disseminating information to communities in local languages. According to Balan & Norman (2012), radio can be used to quickly reach rural communities as a communication tool. The scholars consider this communication tool simple and easy to use and one of the main advantages is literacy is not needed for the consumers and it's cost-effective.

Another effective medium that has enabled vulnerable communities to participate in climate change communication is community radio. In Malawi, researchers investigated the role of radio in encouraging community participation in community-based adaptation programs. It discovered that community radio created a sustainable public space in which communities exchanged knowledge and information about climate change and decided on mitigation strategies to strengthen community resilience (Khonje, 2011).

Furthermore, according to Harvey (2011), community radio is widely recognized as a powerful communication tool in Africa. However, its application in the climate change field has been minimal because of the top-down communication approaches among communities. The researcher believes that one of the most significant barriers to meeting these challenges is a failure to leverage effective local-level forums that allow for dialogue and exchange between researchers, community members, policymakers, institutions, and individuals.

2.4.2 Workshops/Meetings

One of the common tools for resolving projects are meetings (Stefik et al., 1987) and can take place in person, virtually via Information Technology (IT) tools. Meetings, according to Kay (1955), involve gathering people to achieve one or more goals. According to the author, successful meetings occur when the meeting's objective is met. Kay (1955), on the other hand,

questions meetings' ability to solve project-related problems. The author claims that during meetings, participants are prevented from working on tasks at the same time. Because everything communicated cannot be documented, some information obtained from the meeting will always be lost. Instead, he believes that meetings should be backed up by IT devices that allow tasks to be completed concurrently and information to be stored more frequently.

Most development projects use workshops and meetings to share ideas and to identify the stakeholders' expectations from the Project. Workshops help to provide practical and guiding materials to support capacity development activities on REDD+. On the other hand, this communication method also allows for identifying REDD+ issues and concerns of the grassroots stakeholders.

2.4.3 Online Media/ ICT

Climate change communication research in the past has frequently focused on the role of mass media such as newspapers or television. However, communication today has diversified especially with the presence of online media and technological advancements. Communicators try to reach a larger number of people by using a wider range of forums, channels, messengers, and framings (Schäfer, 2012).

Moser (2017) observes in his scholarly work that the choice of communication mediums is critical in climate change communication, particularly when it comes to envisioning climate change. According to the researcher, commonly used online media tools range from extremely collaborative devices to presentations that allow varying degree of interactions. These tools have an impact on both accessibility and interactivity.

Modern communication and information technologies can considerably reduce the cost of information transmission while also improving its effectiveness, ease of transfer, and safety (Hoffmann & Schlosser, 2001). The project website (Tonnquivist, 2008) is one of the modern technologies of the twenty-first century for administering the platform of project communication, where the project organization can control, store documents, and maintain a simple website. These communication platforms can make it easier to share project reports and plans.

Social media, on the other hand, can improve communications by shortening meeting times; both online and offline environments are critical to project success. Social media is important

in project activities because it facilitates communication with stakeholders and information dissemination. As a result, the project's results will be more sustainable (Pivec & Maček, 2019).

Based on numerous studies on climate change communication, it is obvious that online communication is already and will become an important aspect for communicating climate change.

2.4.5 Print Media

As individuals, institutions, and businesses across society become concerned about climate change, the role of print media in demonstrating technical knowledge of the phenomenon grows to be important. Print materials are useful for providing detailed information that cannot be easily remembered. Printed materials include a variety of products such as brochures, newsletters, factsheets, information briefs, policy briefs, posters, reports, and event display banners. Print media helps to raise awareness and enhance understanding about climate change and REDD+ as well as provides practical information about climate change and REDD+ for wider dissemination.

Rodrigues (2008) examined a study of global warming readers from two Mangalore daily newspapers. The study discovered an intriguing fact: Mangalore residents only learn about global warming through the medium of newspapers. Mangalorean's enjoy reading newspapers, so this mode of communication was effective.

2.5 Theoretical Framework

The study was based on two theories: participatory communication theory and diffusion of innovation theory.

2.5.1 Participatory Communication Theory

Participation communication theory has been gaining increasing recognition and acknowledgment both in debate and in the development field. This theory emphasizes transforming people from inactive recipients into active recipients of a development program or project. Further, this theory stresses the importance of the participation of local communities at all levels of society (Servaes & Malikhao, 2005). Besides, this theory posits that, for a development project or program to achieve its objectives, it must include the local people in the decision-making process.

Furthermore, we have had other models of development communication in the past, but they have been diminished by the participation model of communication. Earlier models of development communication were top-down in nature. In doing so, outsiders made decisions on behalf of the project without considering the participation of the project's insiders, the local communities. Chambers (1983) observed that there are times when knowledge from outsiders, such as donors and the educated, is regarded as more reasonable than knowledge from local communities, despite the fact that these people may have no idea what they are doing. Local communities are the ones who know where the "shoe pinches."

Furthermore, this innovative approach to development communication encourages inclusivity and dialogue in decision making. Communities can appreciate their problems, discuss solutions, and participate in the development process through dialogue (Karl, 2007).

Additionally, project employees and researchers must recognize the importance of communities in decision-making because they are the primary stakeholders in the development process. As a result, it is critical to have mutual understanding, information sharing, and expertise exchange during this process in order to achieve the project's goal (Chambers 1993, 1997).

According to Freire (1970), participatory communication theory means people-centered development. Communities living near forests are seen as key beneficiaries of the forests. They rely on this valuable natural resource for economic, social, and cultural reasons. As a result, in order for REDD+ to be successful, local communities must be involved. Based on the REDD+ policy, communities are the main beneficiaries, and they are the ones to implement the REDD+ activities (Awung, 2015). Further, the United Nations Development Programme encourages participatory communication in fulfilling sustainable forest management. The program advocates for a shift from top-down to bottom-up approaches (UNDP,2011). Furthermore, Article 6 of the UNFCCC emphasizes the importance of having participatory communication in engaging communities who live adjacent to the forests. In so doing, projects will be able to develop harmony and encourage the communities to own the project (UNFCCC, 2016).

2.5.2 Diffusion of Innovation Theory

The Diffusion of Innovation theory depicts the process by which innovative ideas, practices, or technologies are spread throughout a community or society (E. Rogers, 2003).

Rogers & Shoemaker (1971) demonstrate a model with five stages that illustrate what an individual goes through before embracing or rejecting an innovation in their scholarly work. The first stage is the stage of knowledge. At this stage, a person is exposed to an innovation and begins to gain insights into how the innovation works. Furthermore, at this stage, the individual has no knowledge of innovation but is motivated to seek it out. The second stage is one of persuasion. Individuals begin to develop an attitude toward innovation and become aggressive at this stage. The decision stage is the third stage. Individuals participate in innovation at this stage by engaging in activities that either accept or reject the innovation. The fourth stage is the stage of implementation. At this point, the person decides whether or not to use the innovation. The fifth stage is confirmation. At this point, the individual supports the innovation based on the previous decision but is also free to oppose it if any conflicts arise.

According to Rogers (1971), people in society vary and may adopt innovations at separate times. Individuals may adopt an innovation in a time sequence, according to the scholar. This means that we have innovators, early adopters, the early majority, the late majority, and the laggards. The researcher believes that the adopters are determined by how long it takes them to implement the new idea. In this case, human communication via various interpersonal approaches usually initiates the adoption of the new idea. For example, if the first adopter of an innovation shares it with others, and these others become adopters who influence other members to adopt the innovation, this results in a binomial increase, which will eventually initiate a chain reaction.

According to Robinson (2009), diffusion of innovations is the process by which innovations are introduced into a population. An individual defines innovation as a new idea, action, or item. The concept of diffusion innovation theory was instigated in communication to explain how an idea or item spreads through a specific population or society over time. The outcome of this diffusion is that a community adopts a new idea, behavior, or product. According to the theory, in order to achieve advancement and sustainability, innovations should be widely adopted.

This communication theory is applicable in this study because the REDD+ concept is considered to be a new concept in the climate change debate. The idea is to provide incentives to local communities, particularly those living near forests, to reduce carbon emissions from forests. This theory applies to REDD+ in that forest-dependent communities go through several

stages before adopting the concept. The communities first gain knowledge about the REDD+ concept, and then they form an attitude toward the concept as they seek more information about it. Third, they decide to participate in REDD+-related activities. Fourth, they become involved in project implementation, and finally, the communities decide to support their decision by fully participating in REDD+. It is also at this point that communities decide whether to accept or reject the REDD+ concept.

2.6: Conceptual Framework

The conceptual framework below clearly shows the connection between effective communication and climate change mitigation. The efficacy of communication is assumed to influence the success of REDD+ Projects as a climate change mitigation mechanism.
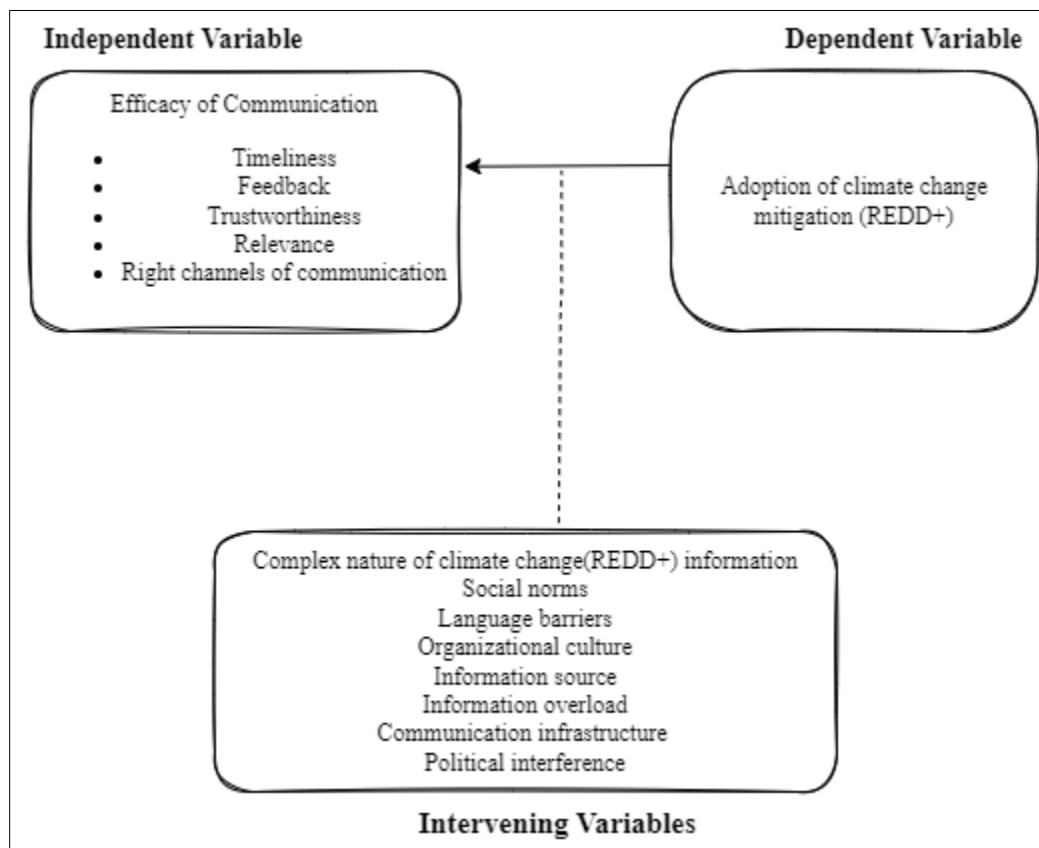
Figure 2: Conceptual *Framework*

2.7 Research Gap

According to the literature, communication in climate change is critical in the adoption of climate change mitigation measures. Despite the fact that many studies on climate change communication have been conducted, there has been little research specifically on REDD+

communication. There haven't been many studies to assess the effectiveness of communication in climate change mitigation, particularly in REDD+ projects. The purpose of this study was to close that gap by examining the efficacy of communication in climate change mitigation in a REDD+ project.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter introduces and explains the study's methodology. It includes the research design and approach as well as an explanation of the methods used. This chapter further describes the study population, sampling methods, research instruments, data collection techniques and procedures, data analysis and data presentation in greater detail.

3.2 Research Design and Approach

The study employed an Evaluation Research design, which requires a well-defined evaluation of the number of resources allocated to a project. This research design determines whether a program was effective, how well it met or failed to meet its objectives, and how efficiently it did so (Miller & Salkind, 2002). It frequently employs research methods to collect and analyze practical information about organizational developments. Furthermore, the study used a mixed method approach, employing both qualitative and quantitative research methods.

3.2.1 Study Area

The research was conducted in the Chyulu Hills ecosystem. The Chyulu Hills REDD+ Project covers an area of 410,533.84 ha in the Tsavo-Amboseli ecosystem in Southeastern Kenya. The Project Area encompasses three counties: Makueni in the north and east, Taita Taveta in the south, and Kajiado in the west. The Project Accounting Area encompasses 374,677.64 ha. Its main geographical feature is the Chyulu Hills, a volcanic mountain range located about 150 kilometers southeast of the Kenya Rift (Ritter & Kaspar, 1997), which inspired the Project's name (VCS,2016).
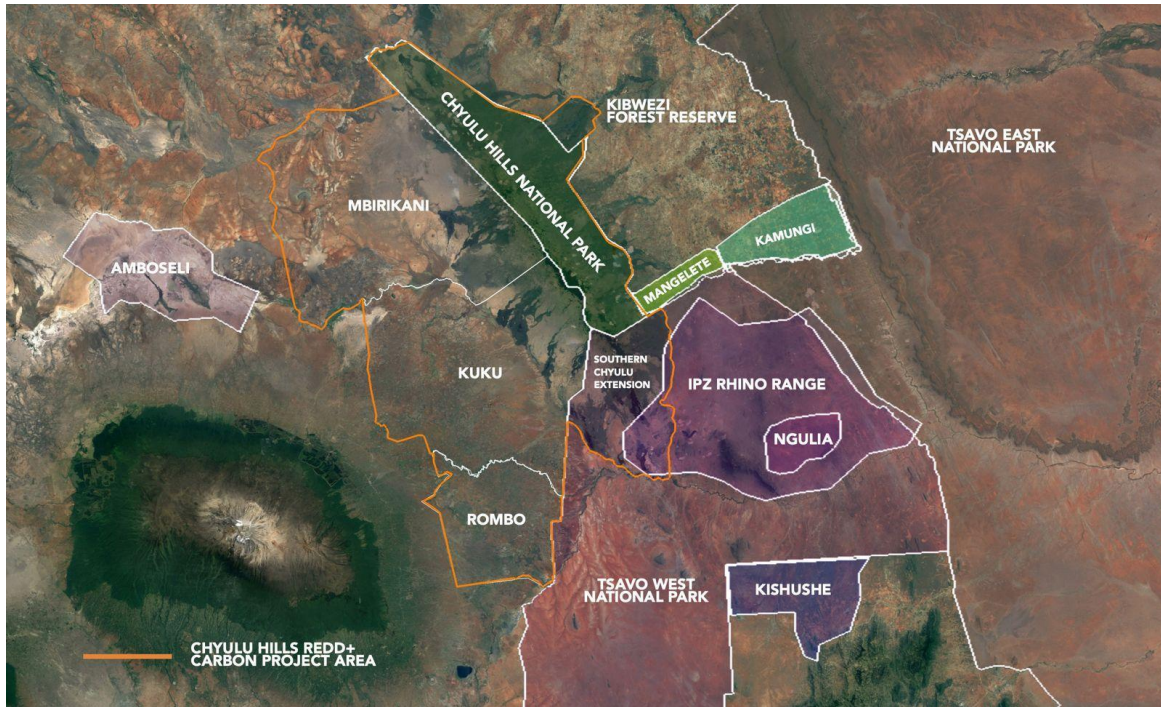
Figure 3: Project *Area Map (Source: CHRP Project Office)*

3.3 Population

The number of subjects or individuals in whom a researcher is interested in conducting research is referred to as the target population (Oso & Onen, 2009). Mugenda and Mugenda (2008) define target population as the whole group of individuals or subjects who share familiar attributes and for whom a researcher wishes to conduct research and have the findings generalized.

The study was conducted within the Chyulu Hills REDD+ Project. The target population of the study was 88,421 community members of four group ranches who are within the Project area and partners of the project. The study focused on 4 wards; Mbirikani, Kuku A, Kuku and Rombo. Members of the Chyulu Hills Conservation Trust Board (CHCT) and Project staff were also targeted in the study.

3.4 Sample and Sample Selection
3.4.1 Case Study Research Method

A case study is a research study that investigates a current phenomenon in reality. This research method allows the researcher to learn about a subject or procedure. Furthermore, case studies involve extensive research on a specific topic. It also entails realizing its intentions and

capabilities, as well as presenting a more scrutinized and reliable justification for the area under investigation (Yin, 1994).

According to Yin (2004), case studies can be explored from various perspectives. One is having several stages of analysis i.e., personal, and institutional. In so doing, one can gain an in-depth knowledge of the subject matter. According to Yin (1994), a case study was ideal for this study because of its distinct position in evaluation research. Further, this type of research is meant for connecting interventions and outcomes of a programme especially in situations where the interventions have no noticeable results.

3.5 Sampling Technique and Sample Size
3.5.1 Sampling Frame
The sample size of the population under study was calculated using (Yamane, 1967) numerical formula. This simplified formula is used to obtain a representative sample from a population greater than 1000 people. The formula is:

$$n = \frac{N}{1 + N(e)^2}$$

In this case, n represents the sample size, N is the population size, and e is the precision level with a standard error of 10%.

n= $\underline{88,421}$
    $1+88421(0.1)^2$

n= $\underline{88,421}$
    843.21

n=100

Therefore, a sample of 100 respondents was distributed proportionately across the 4 wards as presented in the table below:

Table 1:Sampling frame

Ward	Population	Proportion	Sample
Mbirikani	18,617	0.210	21
Kuku A	37141	0.210	21
Kuku		0.210	21
Rombo	32,663	0.369	37
Total	88,421		100

3.5.2 Stratified Sampling

Stratified sampling was used in this study. Sharma (2017) defines this sampling technique as the division of a population into smaller groups which are known as strata. Besides, these strata are determined by the common traits of the population under study. This sampling method was used to draw the 100 local community members of the group ranches who have benefited from the Chyulu Hills REDD+ Project.

3.5.3 Purposive Sampling

This study also made use of Purposive or judgmental sampling. This sampling technique allows you, as the researcher, to apply your opinions in selecting the participants who will take part in the study to meet the exact objective and respond to the research questions under study (Saunders et al., 2009, p. 237).

Purposive sampling is defined by Mugenda and Mugenda (2003) in their research as a sampling technique in which the researcher relies on his/her opinion to choose and make decisions about the subjects or respondents to be included in the study. Furthermore, this sampling technique works well with small samples, such as those used in case study research. Given the small size of the project office, this sampling technique performed very well in this study.

Purposive sampling was used in the study to select 5 key informants from the Chyulu Hills Conservation Trust Board and 3 project office employees.

3.6 Data Collection

The study relied on primary data. Questionnaires were used to collect data from community members, and interviews were used for Chyulu Hills Conservation Trust Board members and project staff. We used semi-structured questionnaires with both open and closed-ended questions. This ensured that respondents were not constrained from providing information on the topic under investigation. Interviews were conducted in both semi-structured and open-ended formats. This allowed for emergent ideas during the interview process because the project office's communication is very broad, particularly the project's external communication with its stakeholders and partners.

The researcher managed the interviewer schedules and guided the respondents through the questions. Prior to data collection, respondents were informed of the study's purpose and methodology.

The researcher supplemented data from qualitative and quantitative methods with secondary data from books, internet extracts, and seminar papers, which provided much needed information.

3.7 Data Analysis and Presentation

The information gathered was analyzed both qualitatively and quantitatively. The quantitative data was analyzed using descriptive statistics and the Statistical Package for Social Sciences (SPSS). Descriptive statistics are data set properties that describe the data. They include mean, median, mode, variance, and standard deviation and are used before formal inferences are made. For qualitative data, content analysis was used. Data was coded and organized thematically. There was quantitative data.

3.8 Reliability and Validity

The ability of a research instrument to produce consistent results after repeated tests is referred to as reliability. According to (Mugenda & Mugenda, 2003), reliability occurs when the measurement procedure is accurate and precise. On the other hand, validity refers to the point to which the research tool can measure what it was designed to measure.

According to Mugenda and Mugenda (2003), validity is the point to which the outcome of the data analysis corresponds to the subject under investigation. According to Yin (1994), validity explains the theorized knowledge of the theory, data collected in the literature section is

realistically examined before any conclusion is made at the end. The researcher made every effort to reduce issues that could jeopardize the reliability and validity of the data.

3.9 Ethical Considerations
It was of great necessity for the researcher to reassure their respondents of confidentiality and that the information obtained was strictly for academic purposes. The researcher was truthful and honest and did not manipulate the data and information collected from the research. Towards the end of the research and data analysis, the researcher provided the study reports to the project under study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

4.0 Introduction

This chapter presents and explains the results based on the study's objectives. The results are presented in tables, charts, and prose form. The findings of the study presented here are linked with the four objectives namely: to examine the communication activities carried out by the Chyulu Hills REDD+ Project in climate change mitigation; to assess the effectiveness of the communication activities carried out by the Chyulu Hills REDD+ project in climate change mitigation; to identify communication barriers to effective adoption of REDD+ project as a climate change mitigation mechanism and to examine the preferred methods of communication by the Chyulu Hills REDD+ project.

4.1 Household characteristics

The findings of the study showed that the majority of respondents (37%) were from Rombo, while the other three wards (i.e., Kuku A, Kuku B , and Mbirikani) had 21% each(Figure 4).
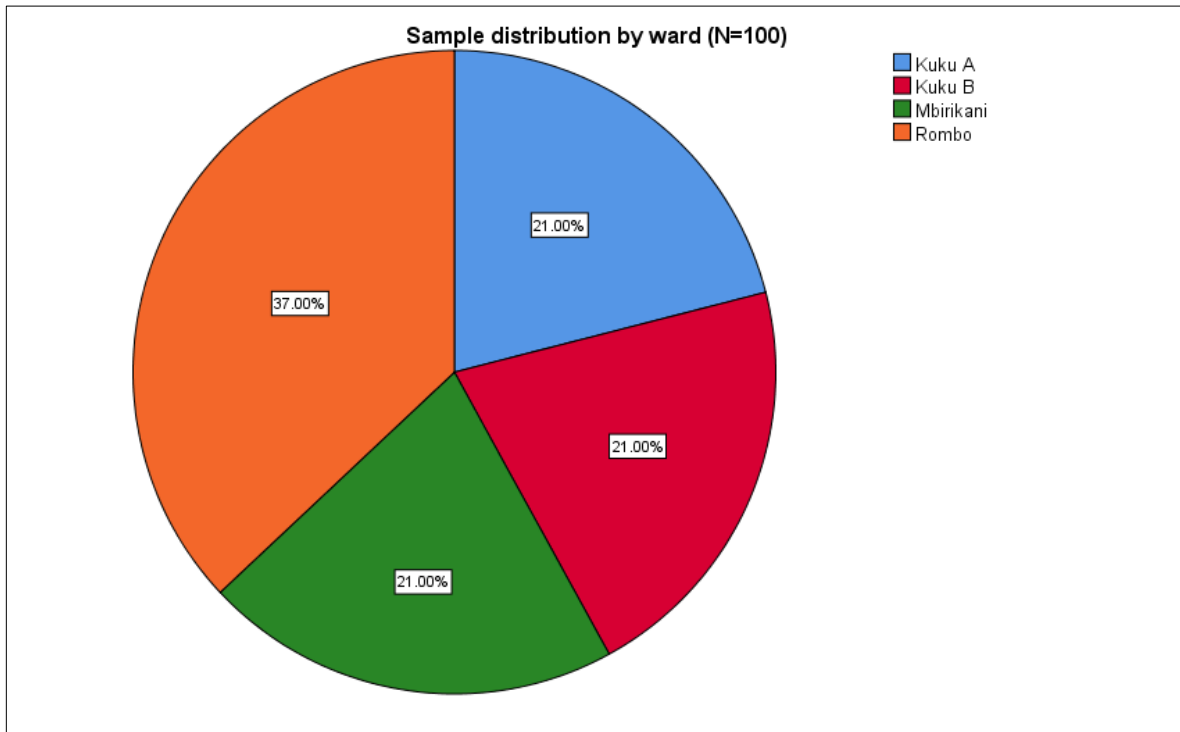
Figure 4: Sample distribution by ward

Table 2 below shows the respondents' distribution by household characteristics including gender, age, education level and occupation.

Table 2: A summary of household characteristics

Household characteristic		Kuku A (n=21)	Kuku B (n=21)	Imbirikani (n=21)	Rombo (n=37)	Total (%)
		%	%	%		
Gender	Male	15	14	14	31	74
	Female	6	7	6	6	26
	Total	21	21	21	37	100
Age category	18-30	1	7	1	0	9
	31-40	8	10	10	13	41
	41-50	9	3	10	20	42
	Above 50	3	1	0	4	8
	Total	21	21	21	37	100
Educational level	Primary	5	7	5	2	19
	Secondary	8	8	12	19	47
	Tertiary	3	2	4	3	12
	Not applicable	5	4	0	13	22
	Total	21	21	21	37	100
Occupation of HH head	Farmer	2	6	2	2	12
	Herder	9	4	9	19	41
	Casual laborer	2	9	5	5	21
	Other	8	2	5	11	26
	Total	**21**	**21**	**21**	**37**	**100**

The respondents were requested to specify their gender and the table 2 shows that most respondents were men (74%) while women (24%). This depicts that most of the community

members within the project area were male. Given that this is a Maa community, there is clearly discrimination between men and women, and women have historically been culturally and academically marginalized. Men are the ones who dominate and make decisions within a family unit, so women in the community would be hesitant to respond or make decisions in the presence of a male figure. The study findings support Agarwal's (2001) belief that women have less voice than men, particularly in forest communities, and participate in less decision-making, particularly regarding forests and forest resources. Furthermore, the findings support Kipuri and Ridgewell's (2008) belief that there is significant inequity among pastoralist women in East Africa. Scholars believe that Maasai women are expected to recognize, respect, and submit to their male counterparts.

In addition, respondents indicated their highest level of education as shown in table 2. The majority of respondents (47%) said they had attained secondary education, (19%) had attained primary education and 12 % had attained tertiary level. 22% of the respondents had not attained any education level. This depicts that the majority of the respondents within the four community group ranches had not gone beyond the tertiary level. Challenges faced by the community, notably culture, poverty, and illiteracy are some of the primary reasons for people not advancing their education level.

Findings from the interviews showed that key informants had a majority who had attained the tertiary level of education. This is because the educated are the ones who can take up leadership positions and represent the project partners in decision-making and implementation processes and also work for the project.

Table 2 shows that most respondents (42%) were in the age group of 41-50 years followed by (41%) who were in the age group of 31-40, (9%) between the age group 18-30, and the least with 8% representing those with above 50 years. This shows most of the respondents who participated in the REDD+ Project were between the ages of 41 and 50 years. The likely reason for these results is that the age group between 18- 30 represent the younger generation and are either in school or urban areas seeking job opportunities hence the chance of them participating in REDD is minimal while those above 50 years are retiring from work.

The results showed that the main occupation of the sampled households was herding (41%), followed by (21%) as casual laborers, (12%) were farmers, and (21%) had other occupations (Table 2). The findings of the study demonstrate that herding is the main source of income within the project area. This is because pastoralism is still the main livelihood activity in the project area. For generations, the Maasai community's social roles, status and income have been intricately associated with their livestock keeping.

4.2 Communication activities carried out by the Chyulu Hills REDD+ Project in climate change mitigation

The study investigated community understanding of REDD+, the results showed that the majority of respondents (98%) indicated that they had a basic understanding of what REDD+ is with only a partly 2% saying they were unaware what it was as shown in Figure 5.
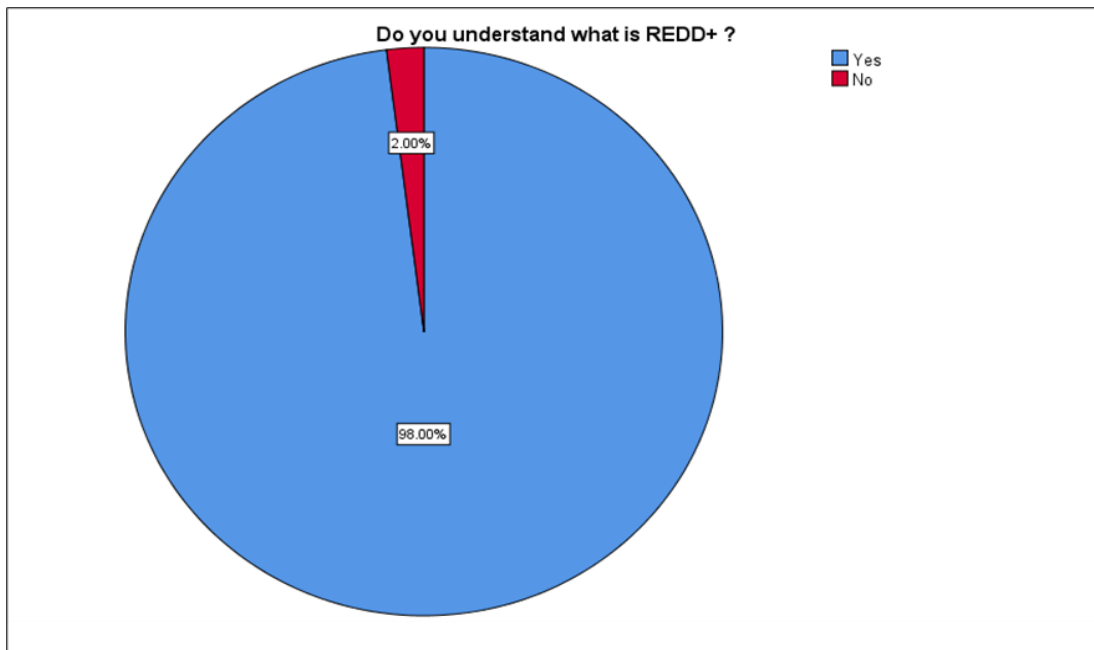
Figure 5: Community understanding of REDD+

The above finding demonstrates that the project has been able to communicate to the communities what REDD+ is and how it works. Further, the results from the interviews showed that the respondents understood what REDD+ is. Most of them engaged in the project implementation hence, the concept of REDD+ was not new to them. The interviewees described REDD+ as a financial mitigation initiative for climate change that aims to reduce

emissions in developing countries through deforestation and forest degradation. Some of the respondents had this to say:

> *'REDD is a thing for the history of UNFCCC aimed at reducing emissions from deforestation and forest degradation while the + is sustainable management of forests, conservation of forests and restoration activities.'*

> *'REDD+ is an abbreviation for reducing emissions from deforestation and forest degradation and then the + these are the benefits that comes with conserving forests such as increasing forest cover and benefits that comes to the communities from the source of carbon credits. So, the REDD+ Project basically is an initiative that was started by the UNFCCC in about the year 2005. It is quite new with the name of creating alternative sources of livelihoods for the communities to reduce pressure on natural resources. This is one of the measures that has been taken so far in the fight against climate change because most of the emissions come from deforestation.'*

The outcome of the study conforms to Ferrari (2010) who suggests that the aim of engaging forest-dependent communities in REDD entails several stages: first, making them aware of climate change as a problem, secondly, communicating some knowledge about carbon storage, thirdly, enlightening them of the likelihoods for forestry carbon credits and lastly guaranteeing them the carbon forestry outcomes.

Furthermore, the study looked into how the community learned about the concept of REDD+. Figure 6 below shows that most of respondents (94%) said that they learned about REDD+ through community meetings and workshops. One of the respondents in the interview had this to say:

> *'There are quite a number of outreaches done within the communities to familiarize them with REDD+ as a climate change mitigation measure. At the project office, we need to ensure that we continue with this process considering REDD+ is complex and a hard concept to grasp". To enable motivation to continue as project partners we need to do outreach consistently not only in communities but in schools, churches, and radio stations.'*

This clearly demonstrates that the communities have been engaged in public decision-making processes of the project activities.
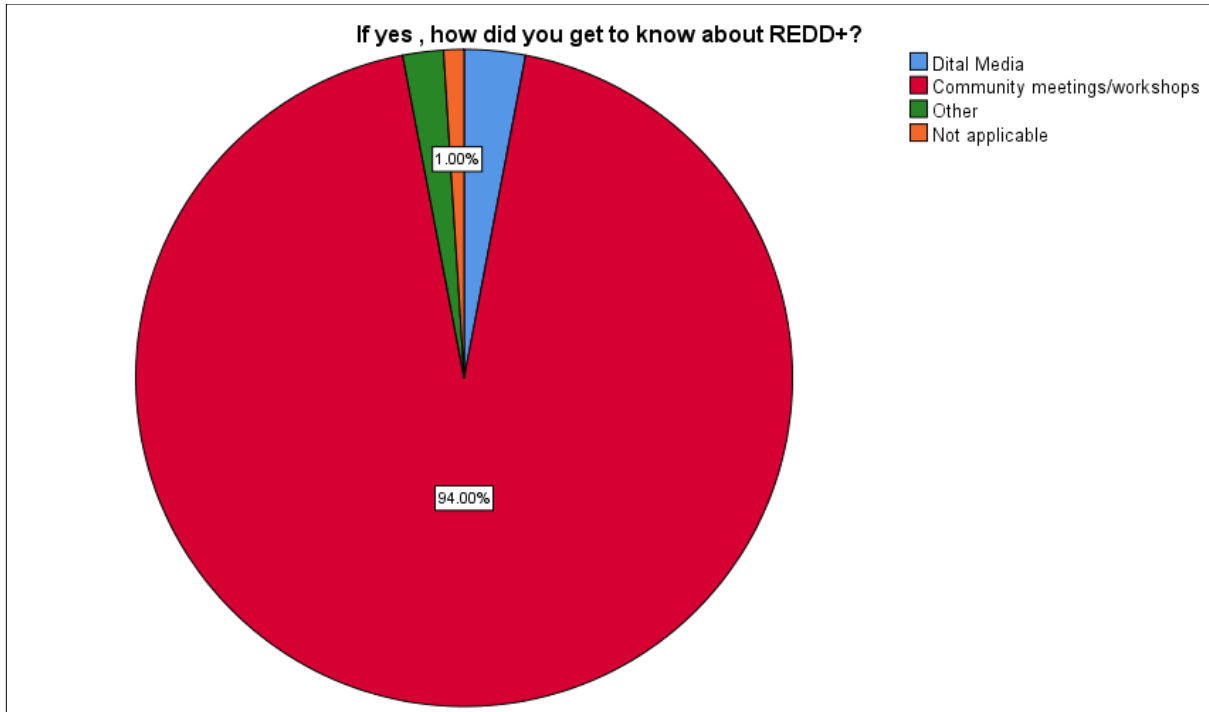
Figure 6: How did you get to know about REDD+

Since the respondents affirmed their level of project awareness was high, the study investigated whether they participated in the project. The results showed that respondents (78%) said that they participate in the project while 22% do not participate in the project (Figure 7). Those who participated in the project activities indicated their involvement in the four REDD+ activities being implemented by the project to address the factors of environmental degradation. These activities are; community engagement and support, livestock and rangeland management, forest and wildlife protection, afforestation, and improved agriculture (Figure 8).
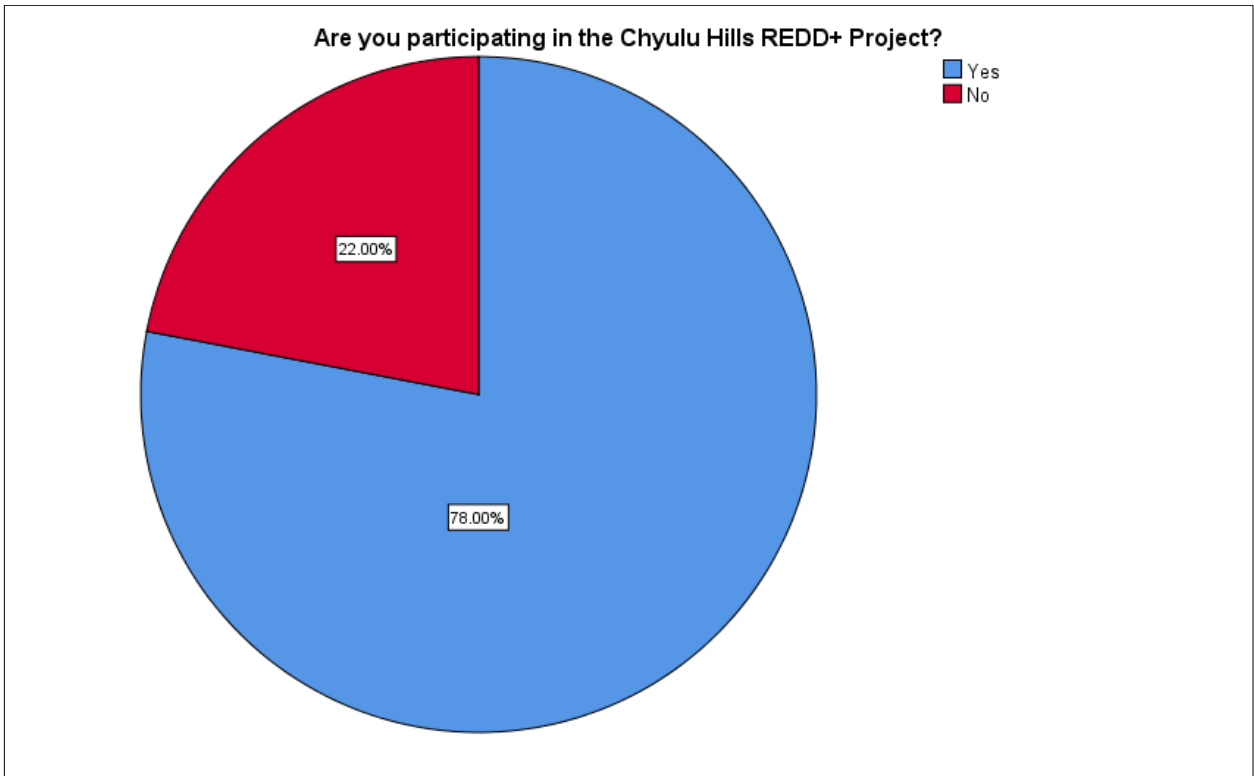
Figure 7: Participation in the Chyulu Hills REDD+ Project

This undoubtedly confirms the project involvement of the local communities is essential in the success of the REDD+ implementation. This finding conforms to Hajek et al., (2011) study which reported that community participation plays a key role in REDD+ implementation. It has proven to be one of the ways that help empower communities in confronting some of the contributors to desertification. Similarly, Lyster (2013) contends that extensive and effective participation of the local community is required for REDD+ success.

If yes, which REDD+ activities are you involved in?

Legend:
- Forest and Wildlife protection
- Livestock and Range Management
- Community engagement and Support
- Reforestion and Improved Agriculture
- Not applicable

9.00%
21.00%
12.00%
21.00%
27.00%
10.00%

21% of respondents did not state activities in which they are involved in wthin Chyulu Hills REDD+ project
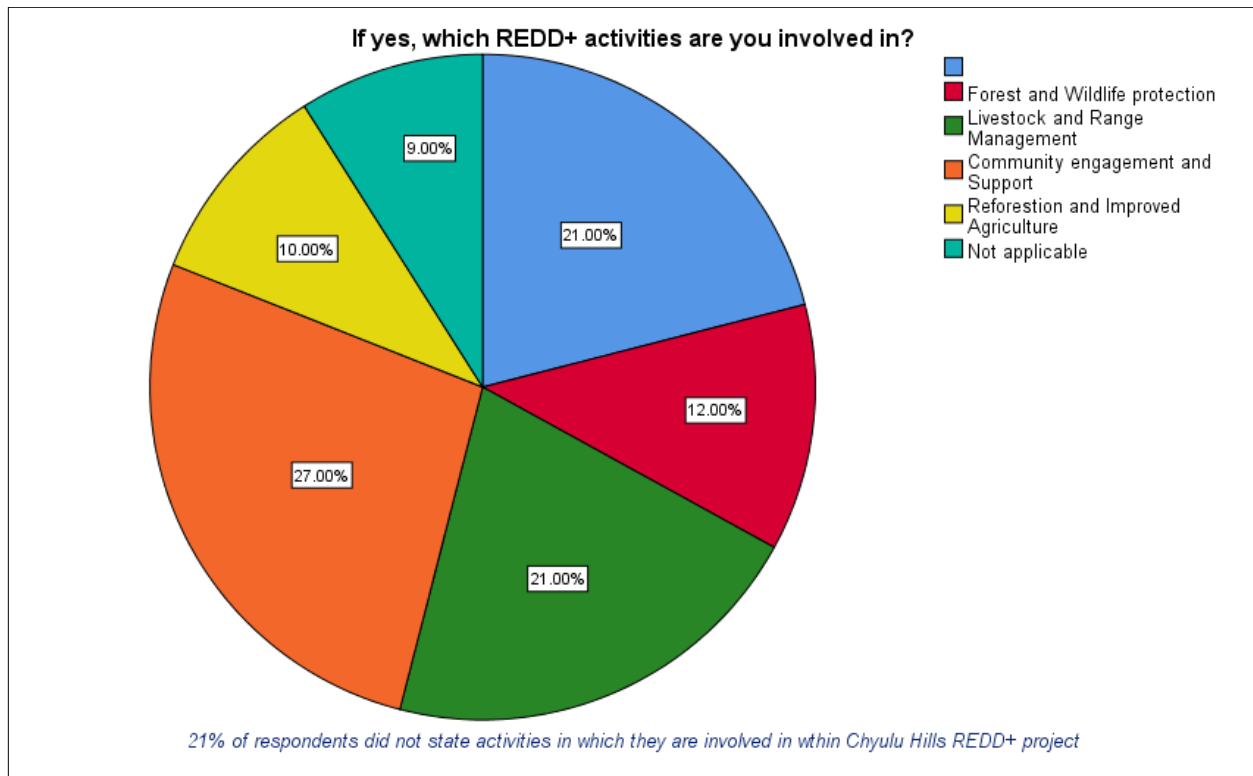
Figure 8: Involvement in REDD+ activities

Community engagement and support (27%) appear to be the most popular way in which communities are participating in the Chyulu Hills REDD+ project. Livestock and range management (21%) is the second most popular activity followed by forest and wildlife protection (12%) and reforestation and improved agriculture being practiced by 10% of the respondents. Furthermore, (9%) of the respondents were not sure about REDD+ activities with (21%) not stating which REDD+ activities they were involved in.

The outcome of the study revealed that community engagement and support was the most involved activity by the community members. The respondents stated that they had largely benefited and participated in areas of education, health, the development of income-generating opportunities, and ongoing outreach and information sharing. The findings agree with (DSE, 2005), who states that involving communities in decision-making that affects them has been shown to have a number of positive outcomes, including improved strategy and program design and implementation.
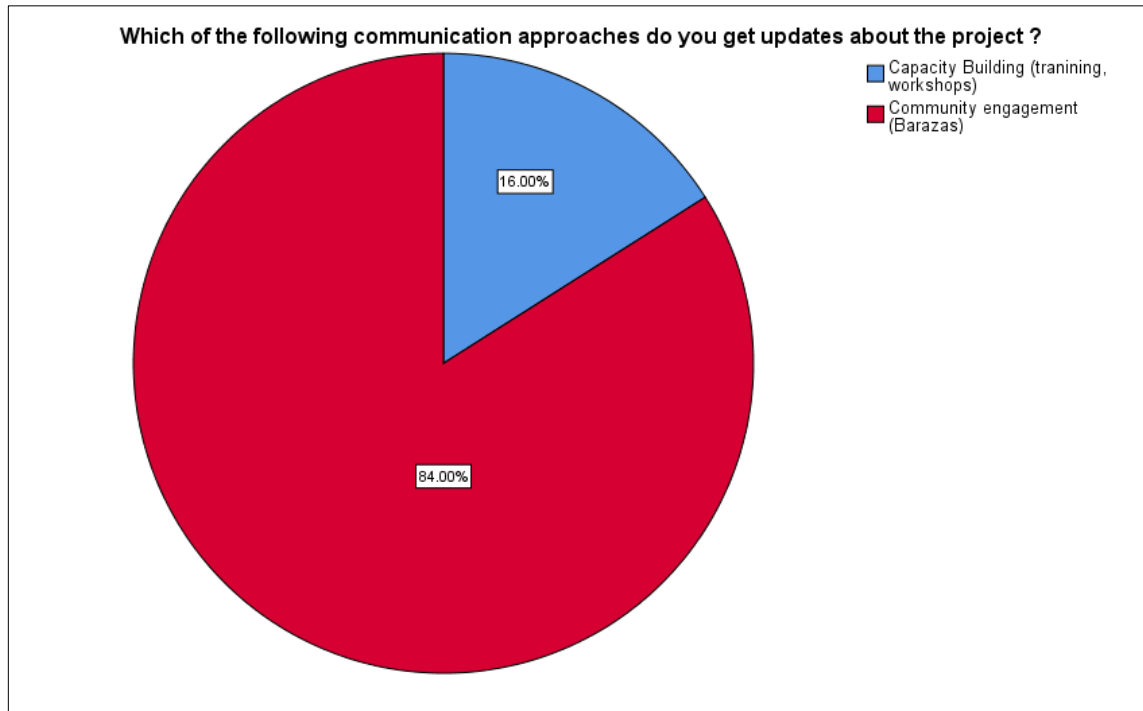
Figure 9: Communication *activities conducted by Chyulu Hills REDD+ Project*

The majority of respondents (84%) said that they get updates about the Chyulu Hills REDD+ project through community engagement meetings (i.e., *Barazas)* while 16% of the respondents said they get updates through capacity buildings (Figure 9). These results conform to (Bessette, 2006) which proposes the role of community meetings as an effective communication tool in engaging communities in identifying their needs and urgency and solutions to their problems. In addition, the results show that information sharing, knowledge management, and stakeholder engagement have not been used within the communities. Though, the respondents from the interviews stated that knowledge management and stakeholder engagement are the most used communication approaches in getting updates on the project.

4.3 Assessment of the effectiveness of the communication activities conducted by the Chyulu Hills REDD+ project in climate change mitigation

The study indicated that 31% of the respondents had faced communication challenges associated with ineffectiveness as shown in Figure 10. The majority (69%) reported the project's effectiveness, and this demonstrates effective communication from the project. The

above findings are supported by the results that show over 91% of respondents had rated the project information sharing and knowledge management as affective (Figure 11)
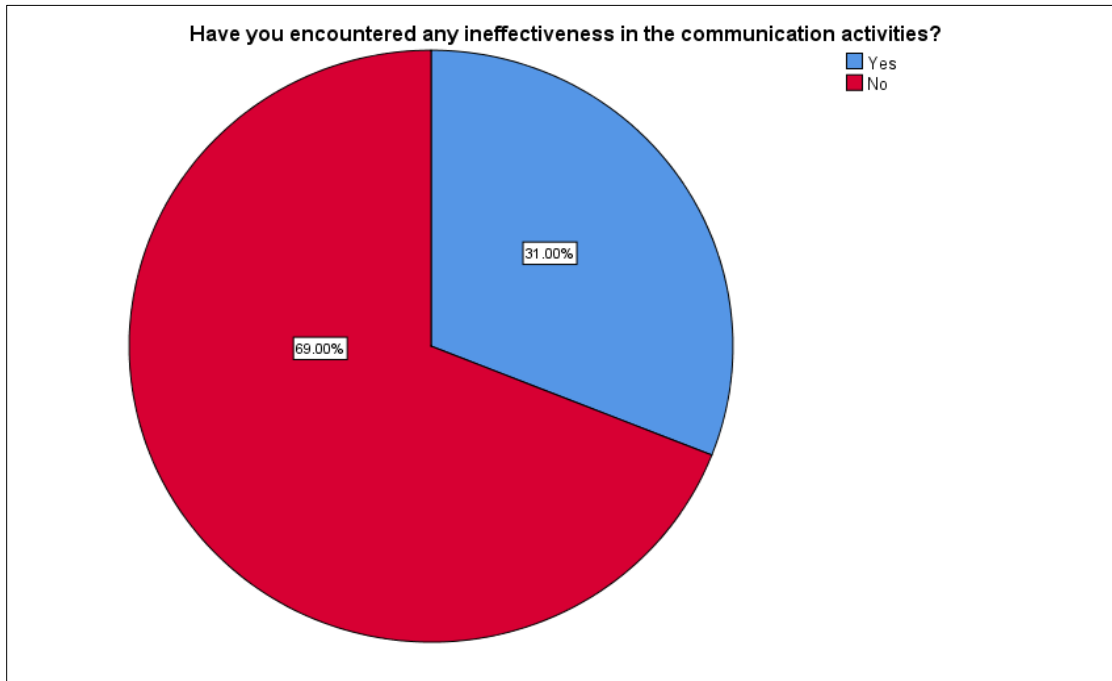
Figure 10: Perceptions of ineffectiveness in communication
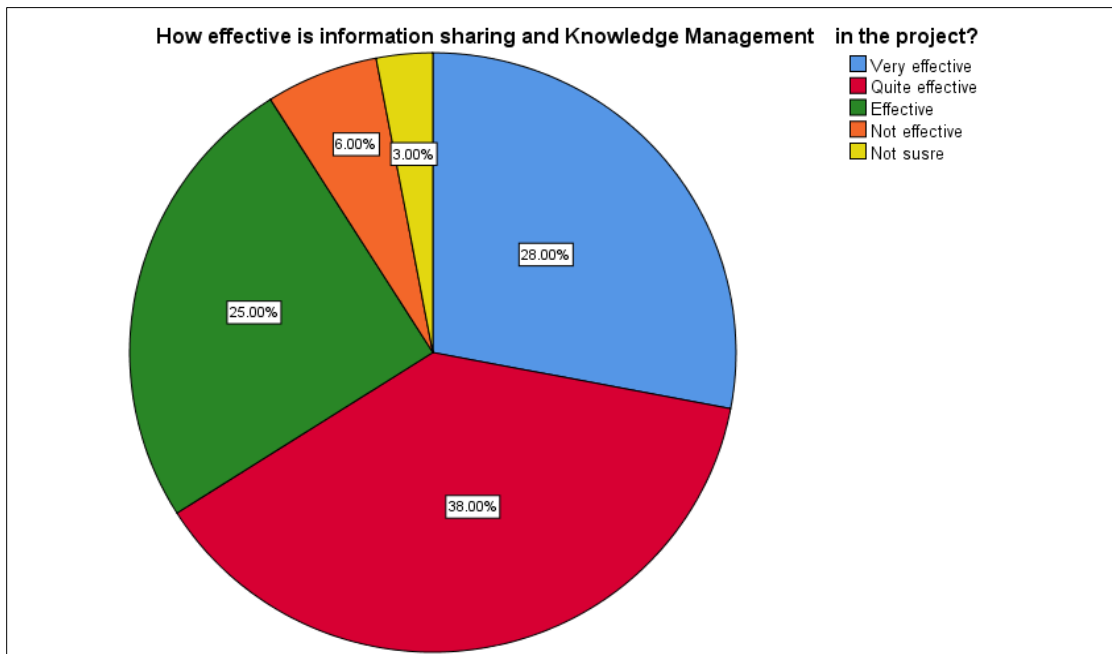
Figure 11: Effectiveness of information sharing and knowledge management

The majority of respondents (38%) said that information sharing, and knowledge management were quite effective with only 6% of respondents saying that it was not effective. The study in establishing how respondents rated capacity building intervention requested evaluation using the ranking method. The results show that 47 % of the respondents had experienced very effective capacity building efforts from the project while 4% were not sure (Figure 12).
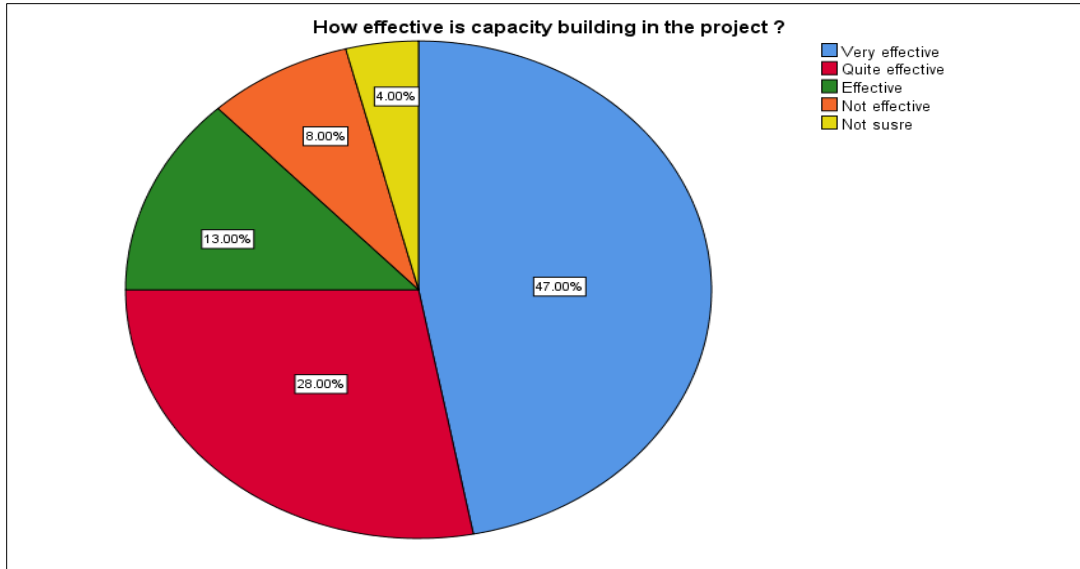
Figure 12: Effectiveness of capacity building

On the aspect of community engagement as communication activity, the project was overlaid effective with 61% reporting very effective communication engagement (Figure 13). This aspect of the project is different from the project activities identified in Figure 8.

How effective is Community engagement in the project?

- Very effective
- Quite effective
- Effective
- Not effective

4.00%
5.00%
10.00%
81.00%
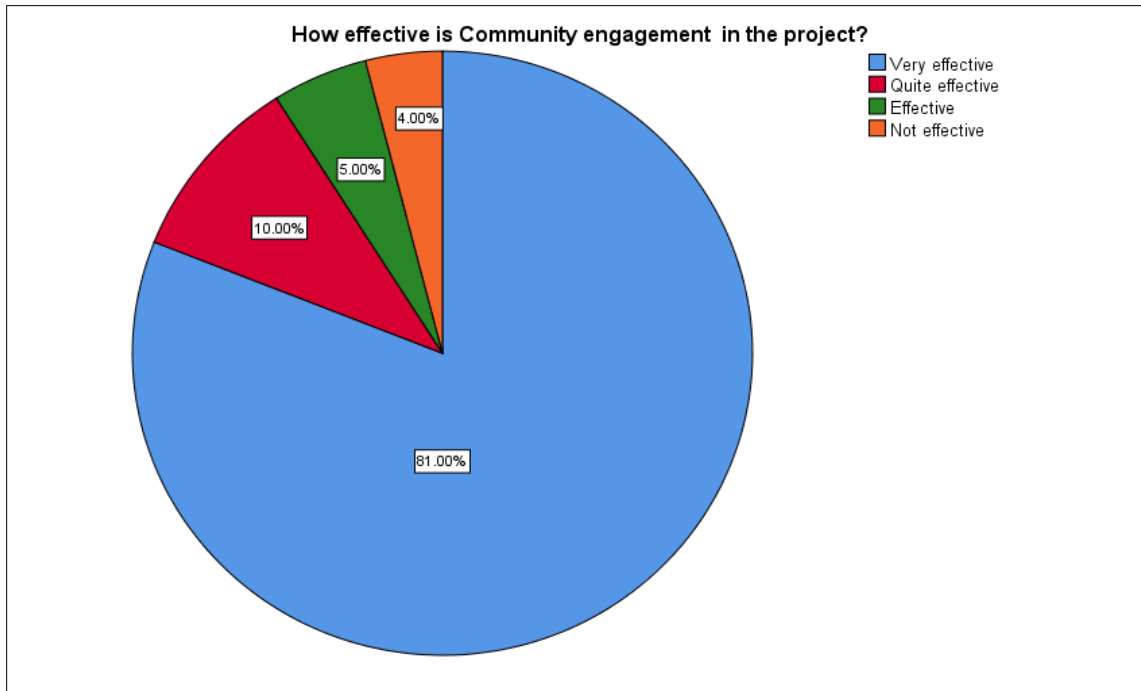
Figure 13: Effectiveness of community engagement in the project

The majority of respondents (81%) said that community engagement in the project was remarkably effective. However, there were few people (4%) who felt that community engagement was not effective. The project should continue with what it is doing regarding community engagement as it resonates with most people.

The findings of this study support Moser's (2009) contention that communities are well supported when their issues, concerns, and voices are heard and resolved in an engaging manner. According to the scholar, imposing scientific facts and solutions without first engaging in one-on-one discussions with community members will almost certainly result in resistance. The findings further conform to a study conducted by DSE (2005) which proposes that involving local communities in decision-making processes has a profound impact on them and significantly contributes to improving project design and implementation.

In terms of stakeholder engagement as a communication activity, the findings showed that 48% of stakeholders could assess the activity as effective. On the other hand, (14%) said it was very effective while 12 % (Figure 14) were not sure about the performance of the project on that communication activity. This shows that the project needs to put more effort into communication with its stakeholders. The findings of the study relate to research conducted by

Boutthavong et al. (2017) which suggest that it's necessary to empower stakeholders in the decision-making process. Besides, engaging the stakeholders could provide an opportunity for them to take part in the execution of project activities.
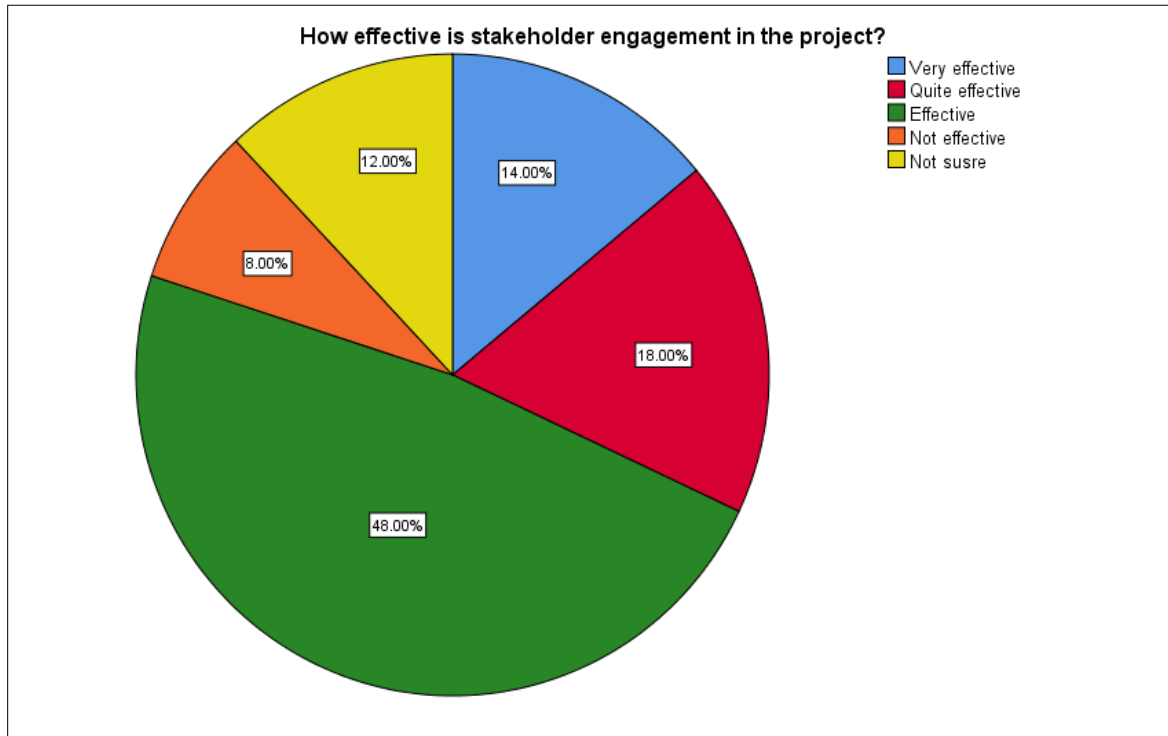
Figure 14: Effectiveness of stakeholder engagement in the project

The majority of respondents (54%) as shown in Figure 15 below said they prefer information sharing and knowledge management (e.g., websites, Facebook) and capacity building (e.g., training, workshops). Additionally, 41% of the respondents prefer capacity building and community engagement (barazas). This means that capacity building (training and workshops) is popular among 95% of respondents and the project should take note of this to continue communication with this preferred approach.
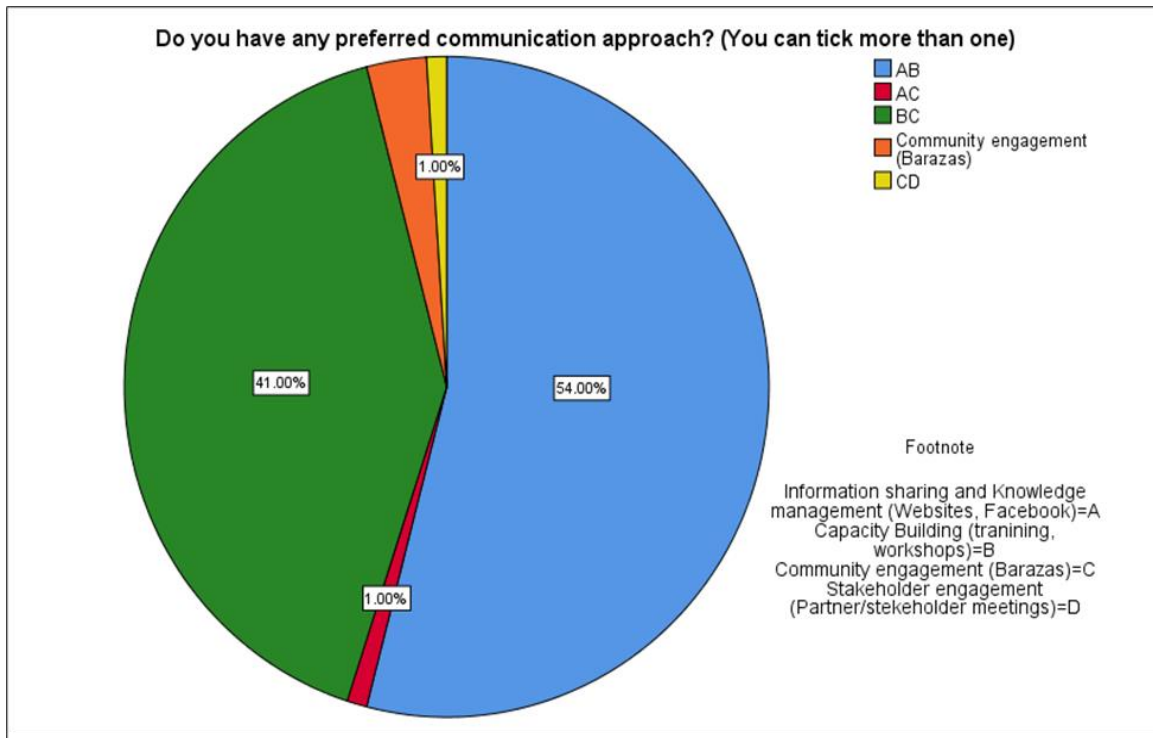
Figure 15: Preferred communication approach

4.4 Communication Barriers to Effective Adoption of REDD+ Project as a Climate Change Mitigation Mechanism

The study findings as shown in Figure 16 indicated that most respondents (59%) said they were experiencing communication barriers to the effective adoption of the Chyulu Hills REDD+ project activities. On the other hand, (41%) were not experiencing any communication barriers to the effective adoption of the project activities. These findings of the study conform to Resosudarmo et al., (2012) who demonstrate that REDD+ Projects have various communication challenges. These include communicating to communities how REDD+ projects work, the opportunities and risks, and the rights and obligations; significantly engaging communities in project design and implementation; and balancing conservation with community well-being concerns. Further, Angelsen (2009) also recognizes communication issues as one of the most significant challenges for REDD+ Projects, especially in conceptualizing REDD+ issues.
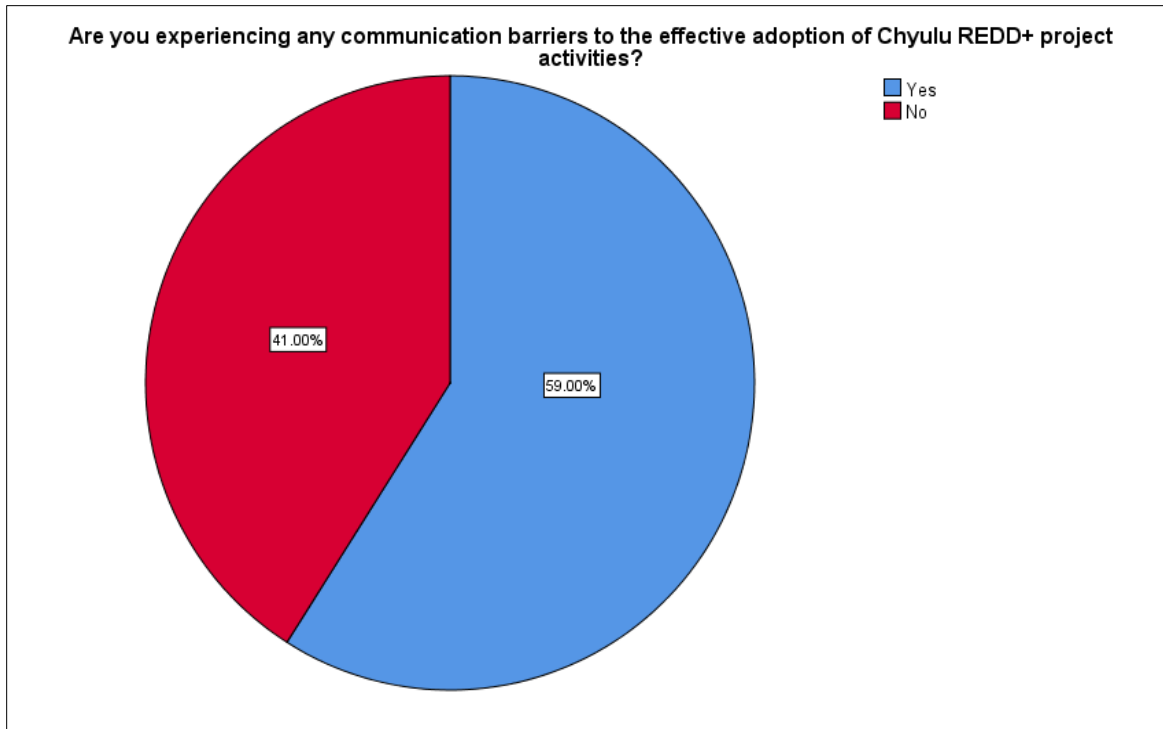
Figure 16: Communication barriers to effective communication

In addition, the study also sought to identify the barriers to effective communication in the adoption of REDD+ as a climate change mitigation mechanism. Figure 17 below shows that 9% of the respondents said that they face communication barriers ACG (irrelevant information/knowledge shared, information overload, and lack of enabling communication infrastructure). 7 % of respondents said they face communication barriers ACDG. However, 39% of respondents did not state the kind of communication barrier they face, which could signify that this is part of the 41% of respondents (see figure 16 above) who stated they did not face any communication barrier. The study's findings are consistent with several works of literature which have identified some barriers to effective project communication, such as the complex nature of the project, the culture of the organization, and trust issues among project staff. According to Stead et al. (2009), most projects are complex because they involve multiple stakeholders and information that is shared across various organizational boundaries.

Findings from key interviews further recognized that there were communication challenges in the implementation of the project. The interviewees revealed that there is a high illiteracy level among the communities, particularly the Maa community situated on the western side of the project area. With REDD+ being complex, explaining the concept has been quite a challenge.

In addition, due to high illiteracy levels, some people have difficulty reading signage in various locations within the project area. One of the respondents said: *'On the western side of the project, we have high illiteracy level. The nature of this project is a bit complex, explaining to the communities even if we have to break it down, it takes a lot of time and effort to explain to the communities. In my opinion that has been a challenge and explaining the concept has not been easy.'*

Further, the interviewees alluded that there is an issue with gender bias. Due to cultural practices, women in particular are not involved in community barazas, and men think they have no role to play in the community barazas. Interestingly, this had led to men and women holding different meetings and restricted them from sitting together hence, they can't be free to speak their minds. One of the respondents had this to say:

> *'I would say there's gender bias or the culture that most women are not involved in the decision making so sometimes when you are holding community barazas you will find that most women don't attend. It has always been that men attend these meetings and then give back information to the women back at home. Sometimes if maybe a man doesn't feel its relevant or doesn't really understand, the information will not reach the women. So, the fact that women are not involved in the decision making, for me it's a challenge, I feel like it's a challenge in terms of communication. We have even gone further to break down the meetings to only women so that they can freely speak where men are not there and holding different meetings for men.'*

Besides, the nature of climate change was also mentioned as a communication challenge. During dry seasons, the Maa communities who are pastoralists, move from one place to another in search of pasture, hence it becomes a challenge for the project to hold meetings /barazas. One of the respondents said: *'The nature of the Maasai communities, they are pastoralists in dry season, you will find them moving from one place to another so in such times calling for a meeting is not easy. People are busy with their livestock moving around you barely find like a forum to hold a meeting so it's a challenge, but we have learnt to adapt. Sometimes we have to go to churches where people will show up but then you now get a chance to speak about REDD+ after the service'.*

In addition, the study also revealed that there is a lot of misconception and misinformation about REDD+. The interviews revealed that most people in the community understand this concept as "selling air". Further, the respondents also said that there's a delay in response or feedback from project partners.

Unlike the respondents' view of community outreaches being effective, some of the interviews differed. They alluded that the frequency at which the project holds its' community outreaches is minimal.

Further, the project staff do not get information on time such as meeting updates hence making coordination of activities not happening at suitable time. One of the interviewees had this to say: *'Sometimes I get caught up in the work and I don't get to learn about the project activities. By this I mean that I will get to learn on the activities later. Despite the project office having meetings every Monday, sometimes the coordination about the activities isn't communicated in good time'.*

The study also showed that there is also a delay in communication among partners which is frustrating as per one of the respondents. Synergies among partners is a challenge. Some of the respondents said:

> *'Delay in communication is quite frustrating. We rely on partners especially during verification process to share information with consultants. We don't have the authority to demand information since different partners have diverse ways of operating especially if communication is not meant for internal purposes.'*

> *'We have had challenges in the past like staff rotation for instance at the government stakeholders, we have somebody that we depend about REDD+ and reporting then the staff is transferred to a different location then we get somebody new and that becomes like a whole different scenario because you have to train that person on REDD+ and how reporting should be done and then after sometime that person is transferred.'*
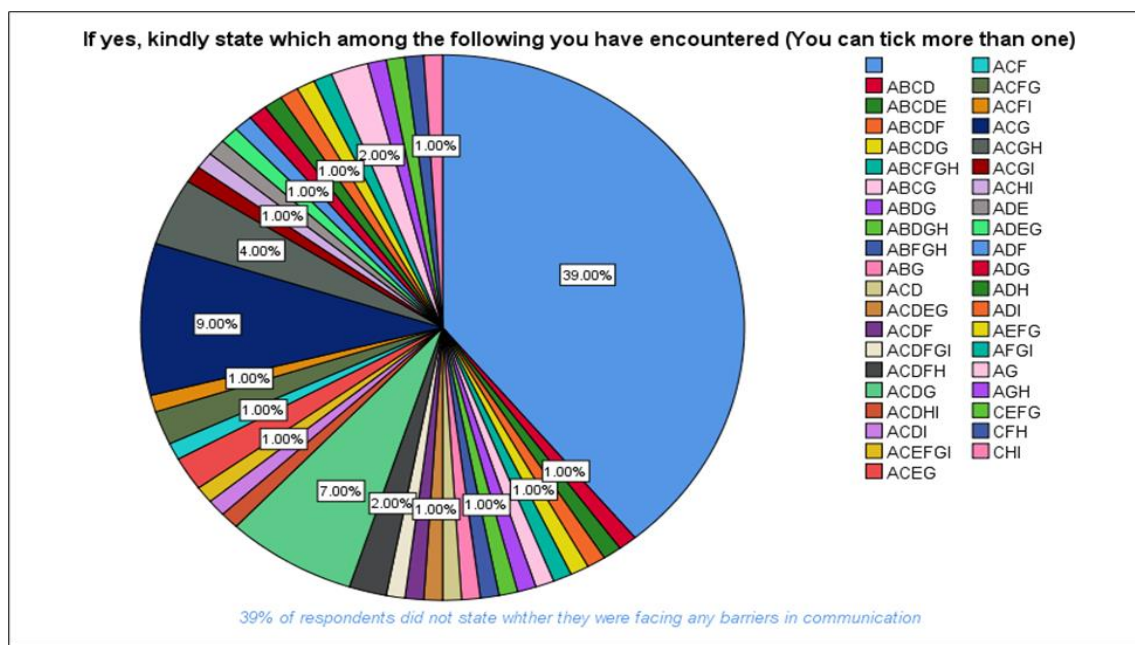
Figure 17: Communication barriers encountered in the adoption of project activities

The key to communication barriers: -

Irrelevant information/knowledge shared	A
Information overload	B
Distrusting information source	C
Complexity nature of REDD+ information	D
Social norms (beliefs, values)	E
Organizational culture (goals, rules, and regulations)	F
Lack of enabling communication infrastructure	G
Physical barriers (i.e., distance)	H
Language barriers	I
Other (Specify)	J

Additionally, the study findings showed that the above communication barriers had affected the implementation of project activities. Figure 18 below shows that the majority of respondents (67%) said that they think communication barriers have affected the

implementation of the project activities. The least of the respondents (33%) said that communication barriers have not impacted on the implementation of project activities.
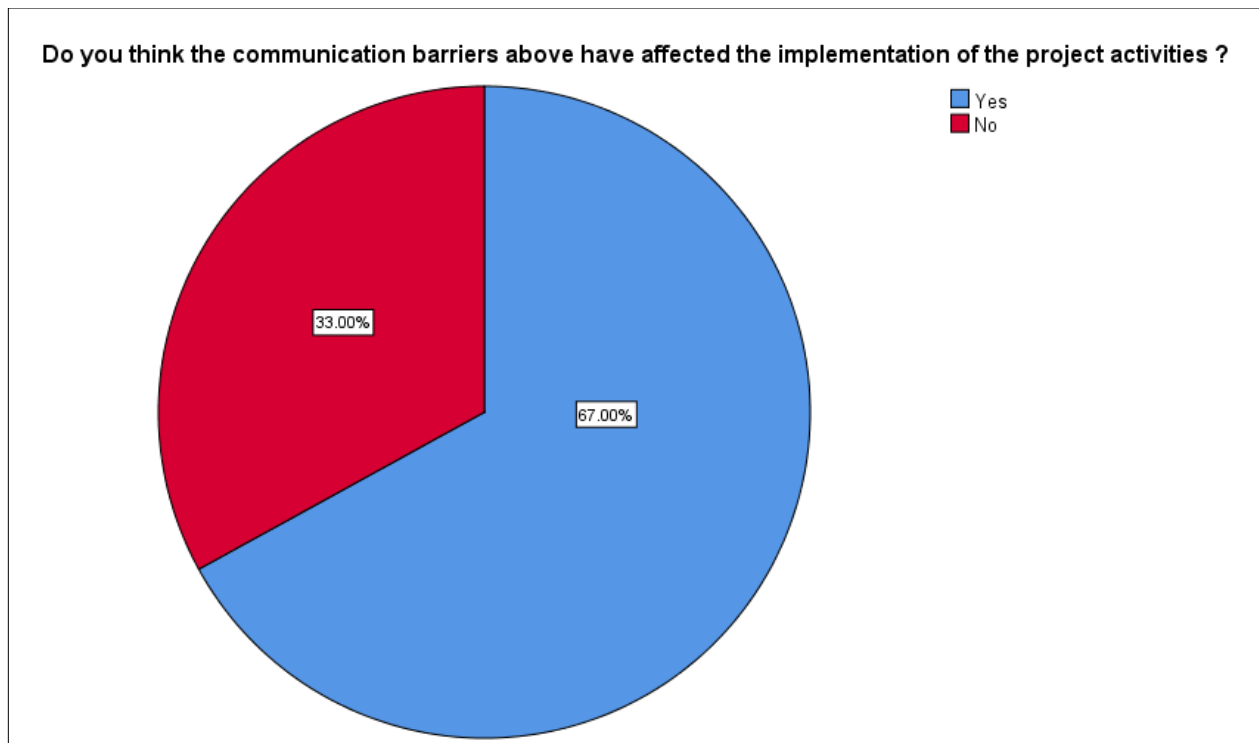
Figure 18: Effect of communication barriers to the implementation of project activities

4.5 Methods of communication preferred by the stakeholders of the Chyulu Hills REDD+ project

As shown in Figure 19 below, community meetings and workshops appeared to be the most common communication channels preferred by the stakeholders as stated by the majority of respondents (52%) followed by digital media (40%), and community radio which had the least representation of (7%) of the respondents. Through meetings and workshops, people gather to discuss and share ideas and information and create solutions to their problems. The study's findings agree with (Stefik et al., 1987), who state that meetings are a common communication tool for resolving issues related to the project and can take place in person, virtually, or a combination of both.

Which is the following communication channel the project office uses?

Legend:
- Community radio
- Digital media
- Communiuty meetings/workshops
- Not applicable

7.00%
1.00%
52.00%
40.00%
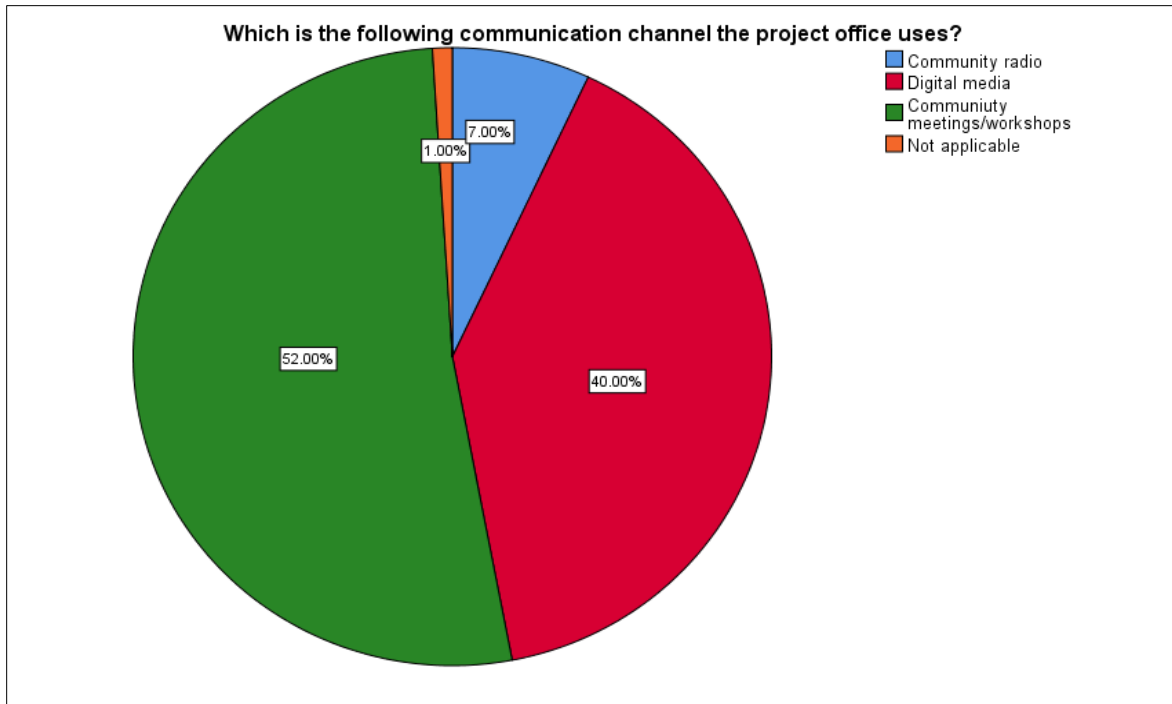
Figure 19: Communication channels used by the project

Further, the study sought to investigate the likelihood that the above communication channels as per figure 4.16 were used for the following reasons-creating awareness, behavior change, influencing attitude, fostering knowledge, and entertainment. Figure 20 below shows that the majority of the respondents (44%) stated that the likelihood that the communication channels will be used to create awareness was very high followed by (27%) who believed it was high. (28%) of the respondents thought that the channels used for creating awareness were moderate and the least of the respondents (1%) said it was low. The study's findings are consistent with McNamara's (2013) study, which sought to identify how various communication channels were used to raise awareness and empower local communities in the Pacific about climate change. Several climate change experts were chosen to take part in the study. The study's findings discovered that the specialists preferred the use of participatory approaches in raising awareness and engaging communities about climate change. The specialists also identified a variety of channels for engaging local communities, such as the use of books, movies, monthly calendars, storytelling, and song and poetry competitions.
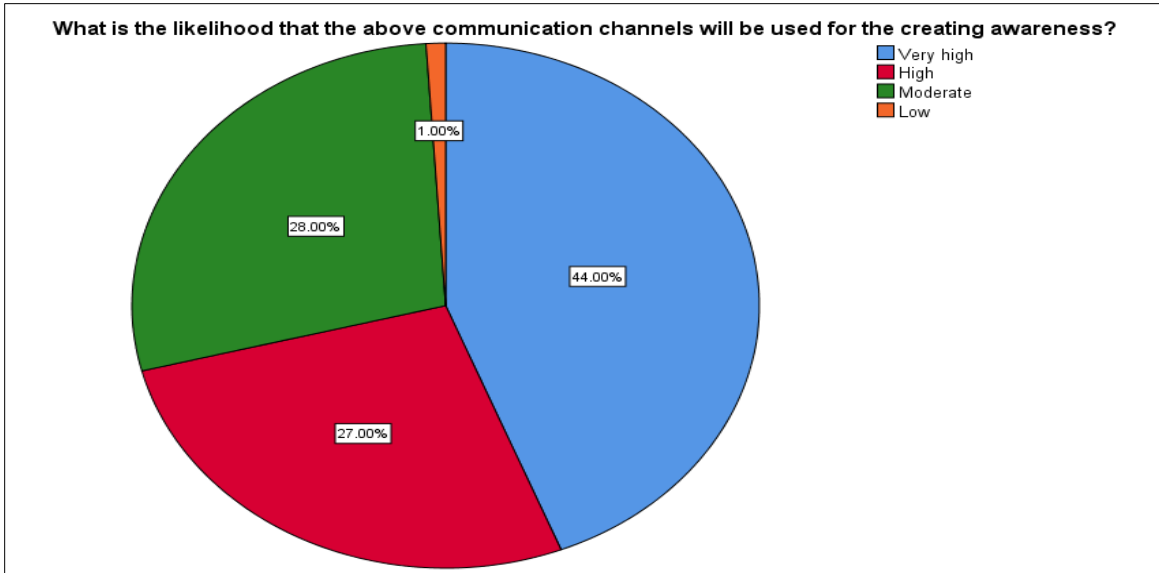
Figure 20: Likelihood that the communication channels will be used for creating awareness

Further, the results showed that 9% of the respondents thought that the communication channels that will be used for behavior change were very high while the majority (37%) said it was high. Further, 36% believed that the likelihood of using these channels for behavior change was moderate and 18% said it was low as shown in Figure 21 below.
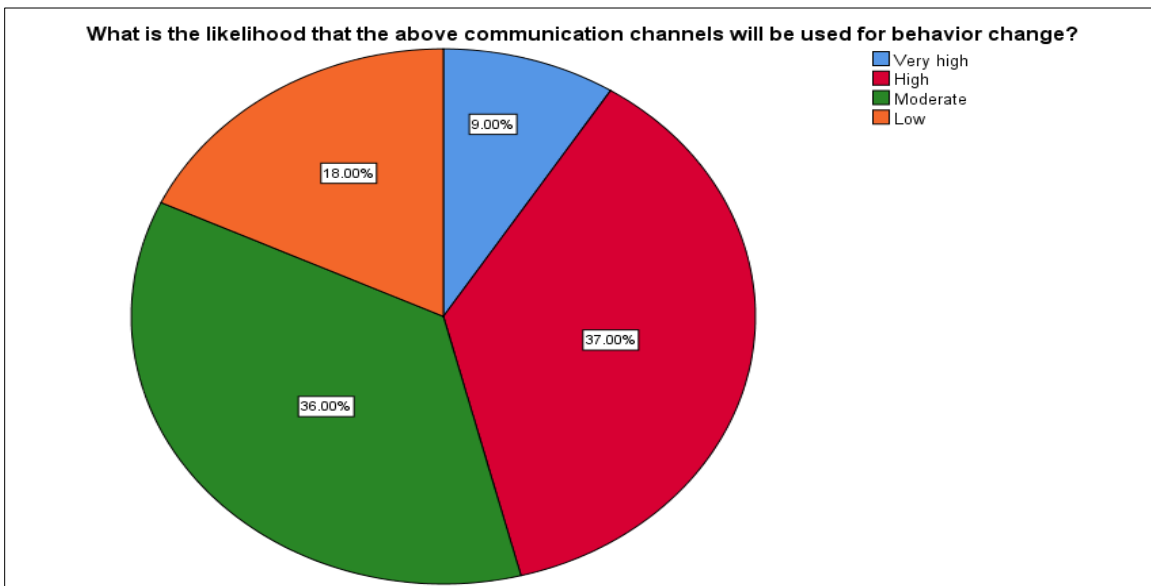
Figure 21: Likelihood that the communication channels will be used for behavior change

In addition, as shown in Figure 22 below , the study findings indicated that (10%)of the respondents said that the likelihood the communication channels will be used to influence

51

attitude was very high followed by (24%) who believed it was high. (49%) of the respondents thought that the channels will be used to influence attitude was moderate and (15%) said it was low while (2%) stated it was very low.
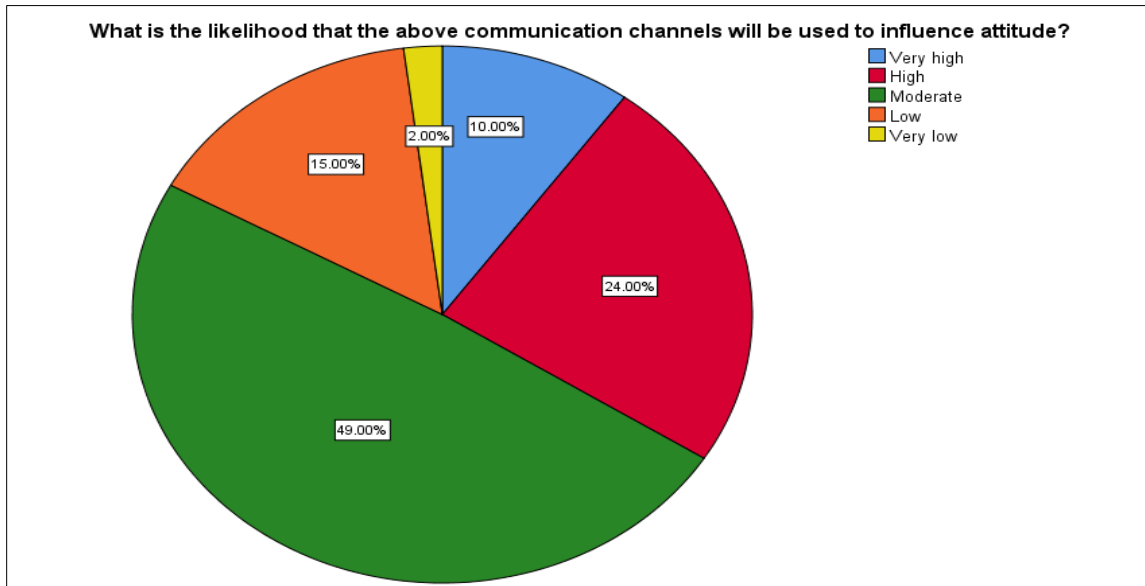
Figure 22: Likelihood that the communication channels will be used to influence attitude
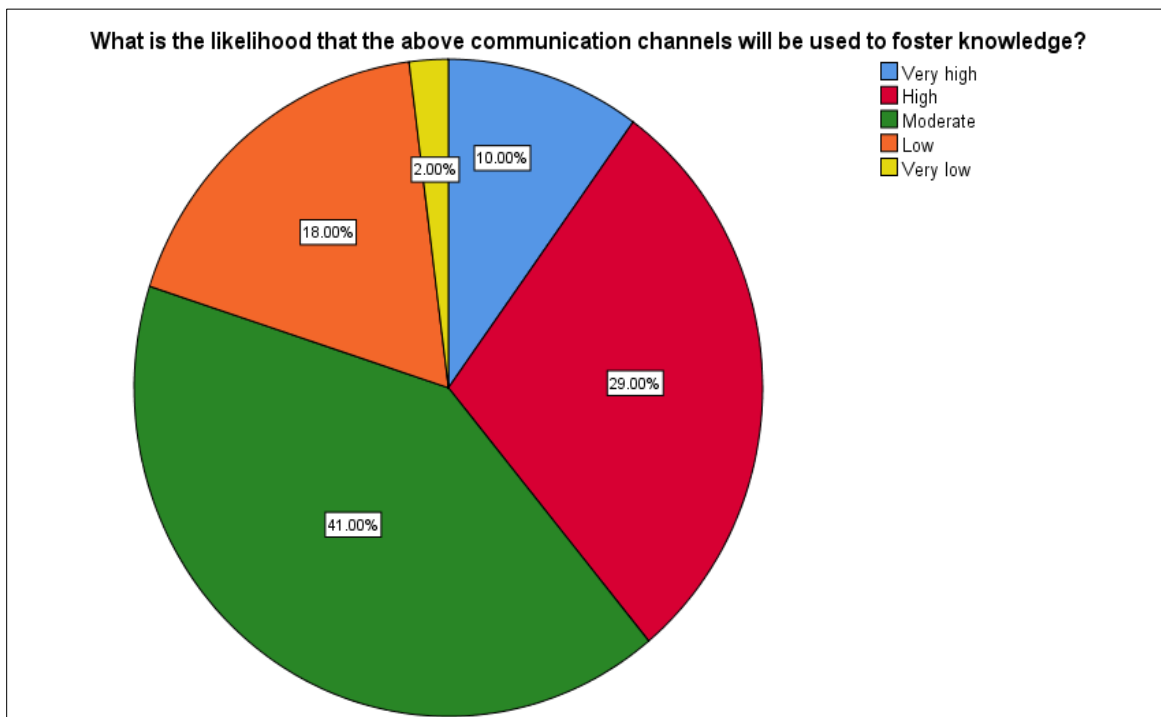
Figure 23: Likelihood that the communication channels will be used to foster knowledge

Figure 20 above shows that (10%) of the respondents said that the likelihood the communication channels will be used to foster knowledge was very high followed by (29%) who believed it was high. (41%) of the respondents thought that the channels used to foster knowledge were moderate and (18%) said it was low while (2%) stated it was very low.
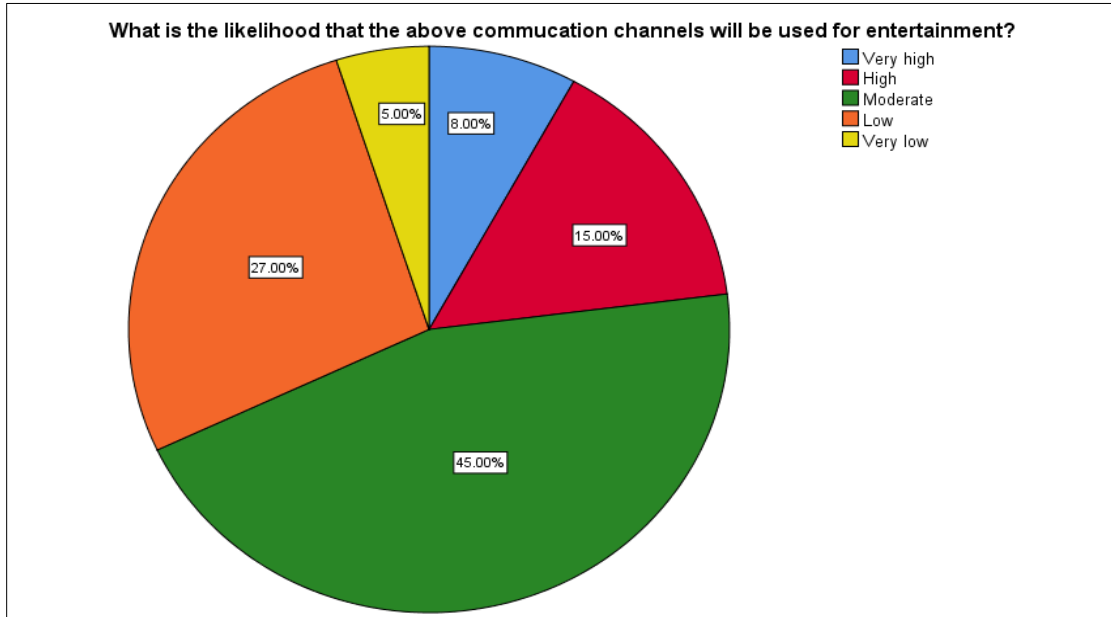
Figure 24: Likelihood that the communication channels will be used for entertainment

Figure 24 above shows that (8%) of the respondents said that the likelihood the communication channels will be used for entertainment is very high followed by (15%) who believed it is high. The majority of the respondents (45%) thought that the channels used for entertainment are moderate and (27 %) said it is low while (5%) stated it was very low.
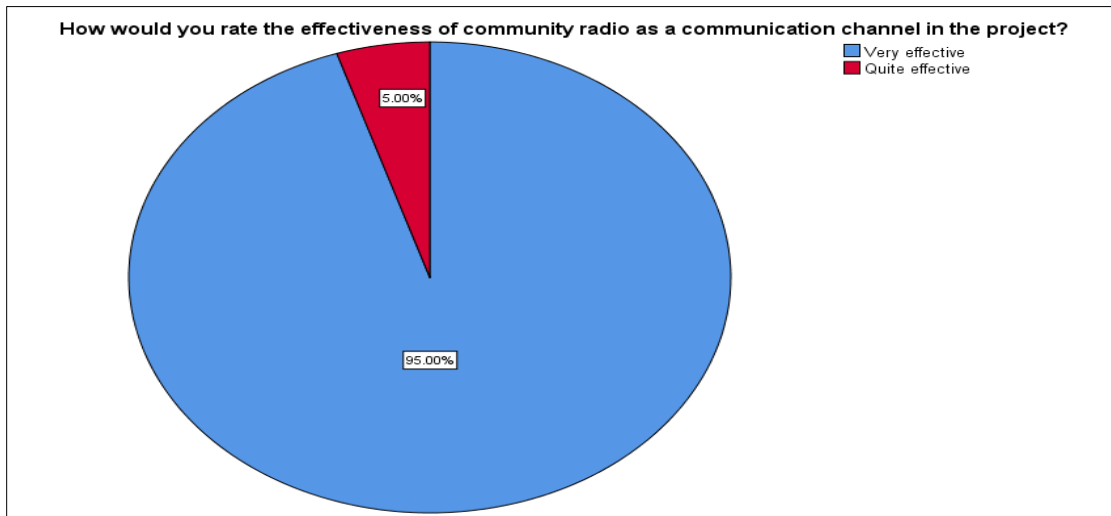
Figure 25: Effectiveness of community radio

The majority of the respondents (95%) as shown in Figure 25 above stated that community radio was a very effective communication channel while (5%) believed it was quite effective. The findings of the study suggested that community radio as an apparatus of communication was very effective as it embraces interaction and dialogue. The findings conform to a study by Balan & Norman (2012) that suggests that community radio as a medium of communication can be used in distributing information to local communities in a brief period of time and is simple and easy to use. Furthermore, according to the researchers, this channel allows the illiterate to obtain information and it's cost-effective.
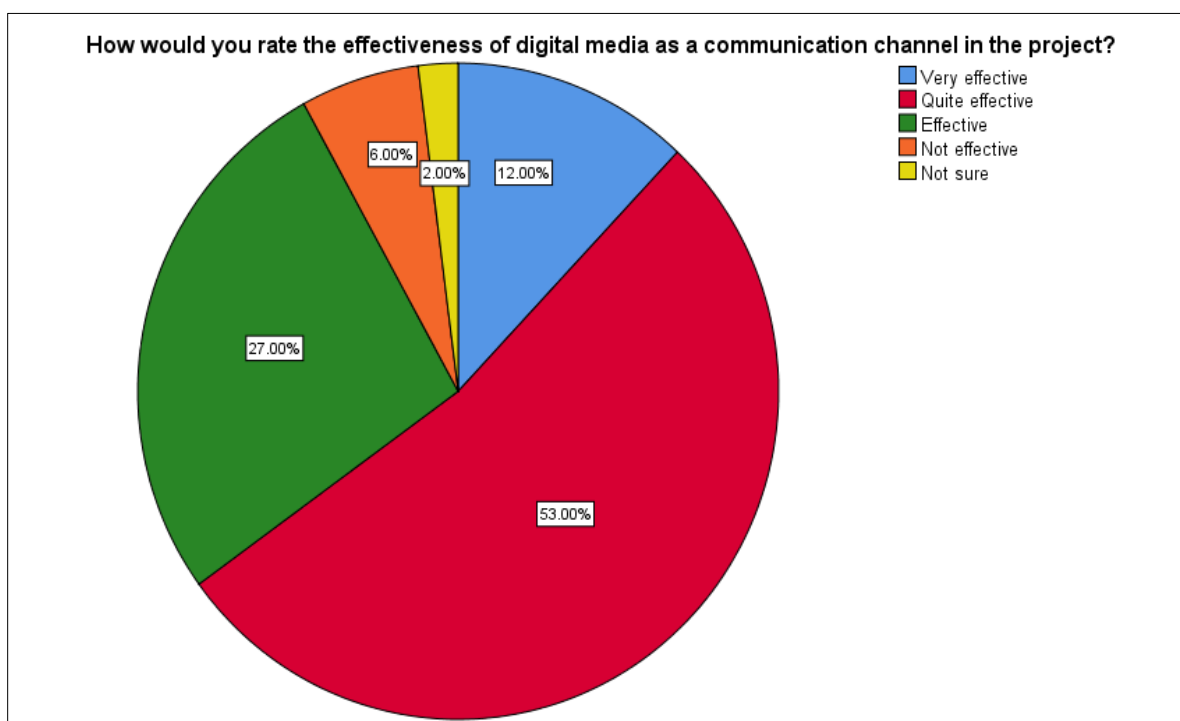
Figure 26: Effectiveness of digital media

Figure 26 above shows that (53%) of the respondents stated that digital media as a communication channel was quite effective followed by 27% who believed it was effective while 12 % of the respondents said it was a very effective channel of communication. Besides, 6% of the respondents stated that this channel of communication was not effective with a minority of respondents, 2% not sure whether this channel was effective. This proves that digital media has not been maximally utilized by the project in communicating with the communities and stakeholders. The findings are in tandem with Hoffmann & Schlosser (2001)

who posit that the use of digital media as the current information and communication tool can be effective in terms of cost and transfer of information and encourages participation.
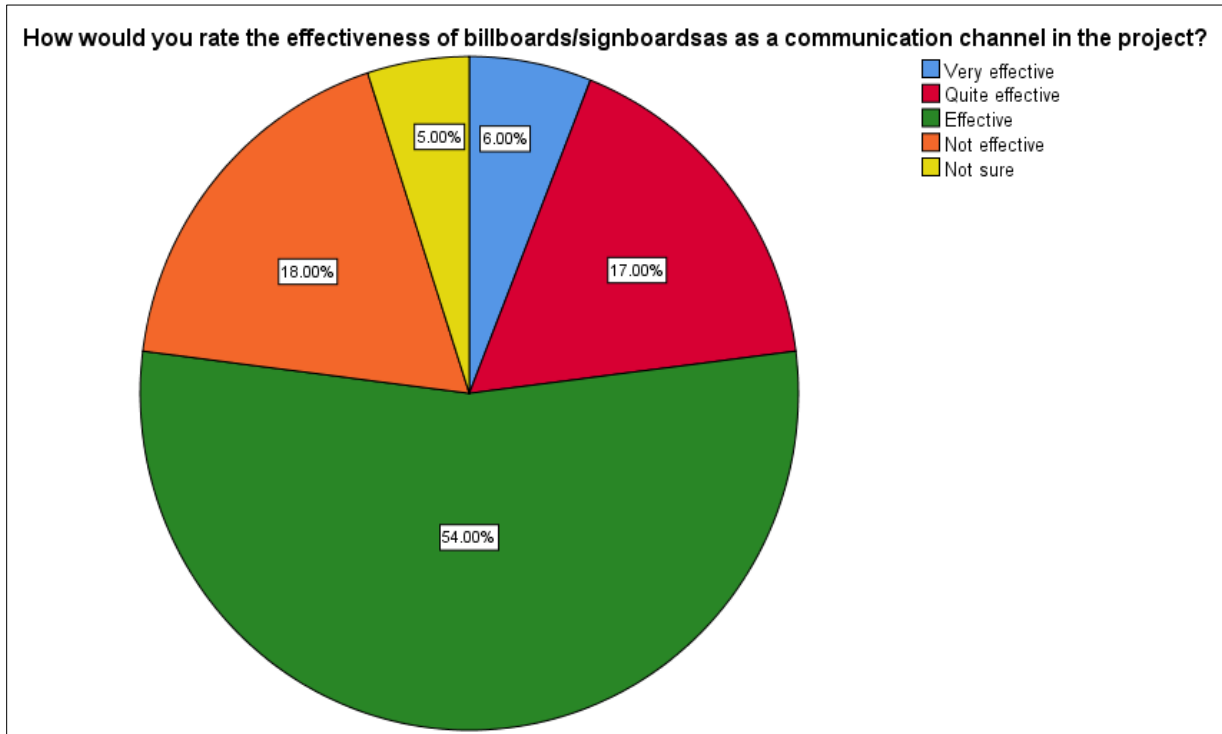
Figure 27: Effectiveness of billboards/signboards

The effectiveness of billboards/signboards was assessed by the study, majority of the respondents (54%) as shown in figure 27 above stated that billboards/signboards as a communication channel were effective followed by 18% who believed it was not effective while 17 % of the respondents said it was quite an effective channel of communication. Besides, 6% of the respondents stated that this channel of communication was very effective with a minority of respondents, 5% not sure whether this channel was effective.

In this study, (92%) stated that community meetings and workshops as a communication channel were very effective with a minority of the respondents (8%) stating it was quite effective(Figure 28). Findings from the interview also revealed that community outreaches to be specific were more effective and relevant in that they provided a platform for feedback from the community members. Further, the interviews also cited that this channel of communication was crucial in changing the attitude and behavior of community members hence not getting any resistance from community members.
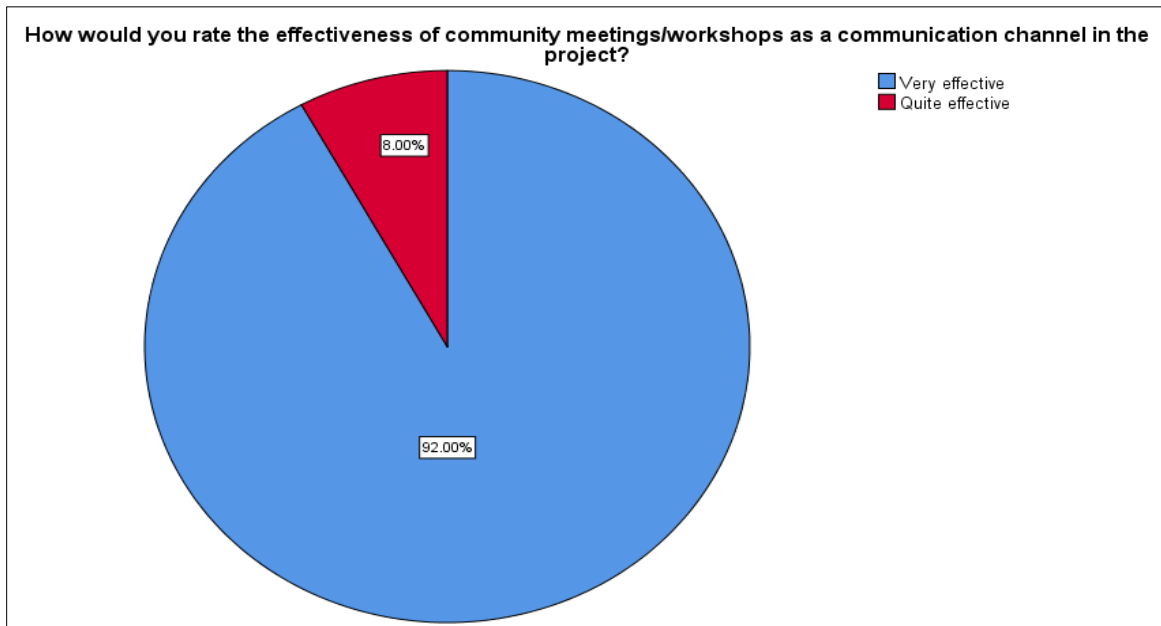
Figure 28: Effectiveness of community meetings/ workshops

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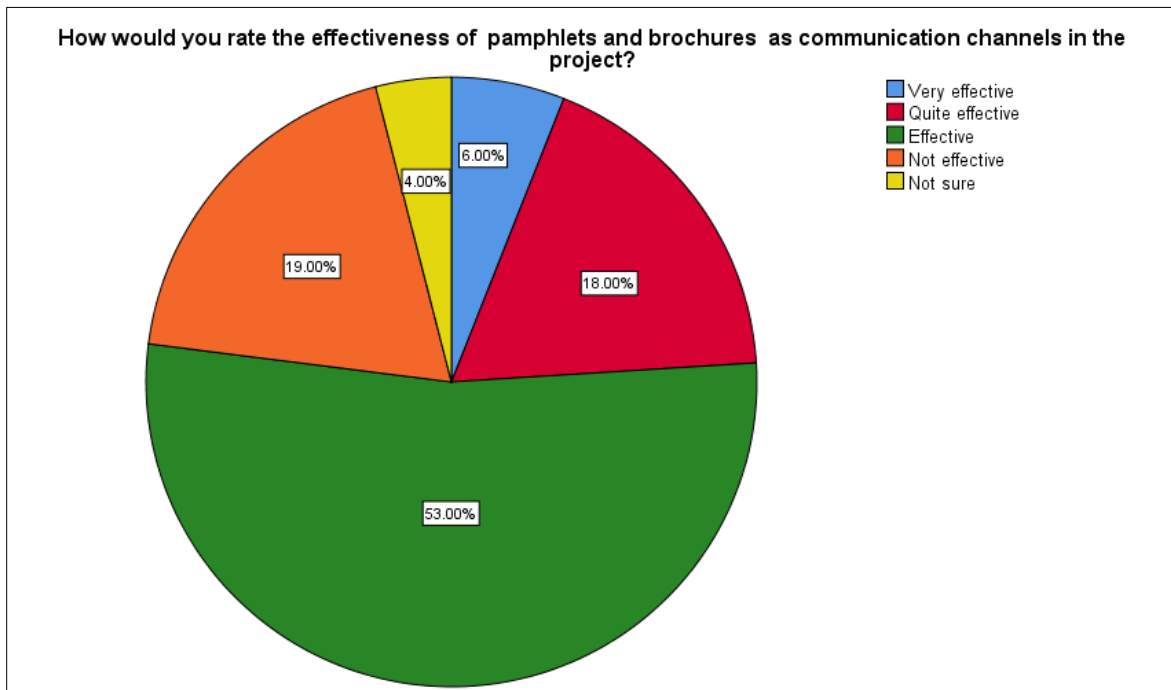
Figure 29: Effectiveness of pamphlets /brochures

The results shown in figure 29 above show that the majority of the respondents(53%) stated that pamphlets and brochures as a communication channel were effective followed by (19%) of

the respondents who believed this channel of communication was not effective. Besides, (18%) of the respondents believed it was effective while a minority of the respondents (6%)stated it was very effective. On the other hand, (4%)of the respondents were not sure about this channel of communication.
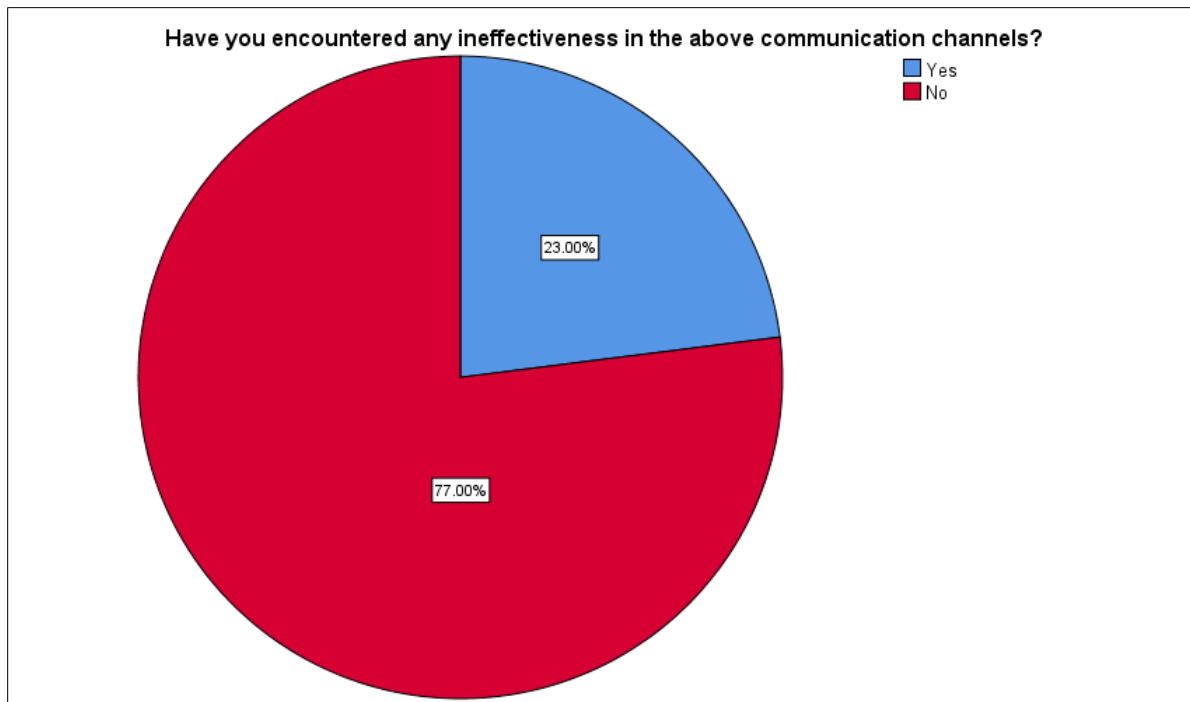
Figure 30: Ineffectiveness of communication channels

The majority of the respondents (77%) stated that they encounter ineffectiveness in the communication channels used by the project while the minority of the respondents (23%) said they don't encounter any ineffectiveness in the communication channels(Figure 30).
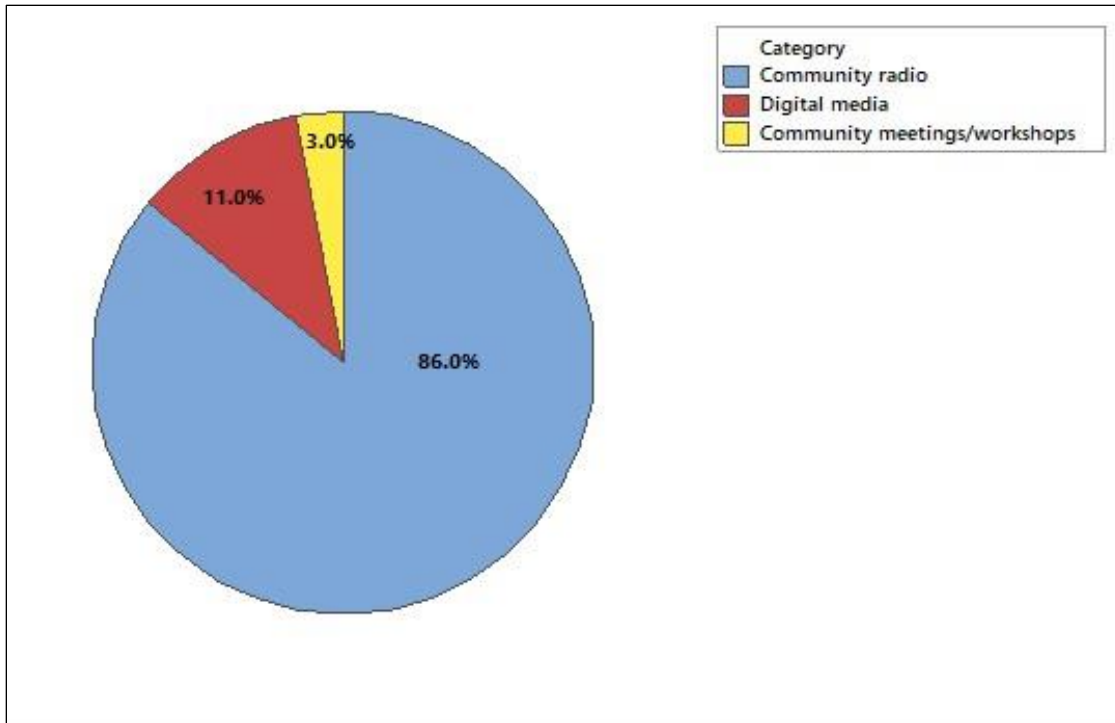
Figure 31: Preferred communication channel

Furthermore, the study sought to identify the preferred method of communication among stakeholders when it came to communicating project activities and providing updates. The results per figure 31 above indicated that the majority of the respondents (86%) stated that community radio is their most preferred communication channel followed by digital media (11%). Only (3%) of the respondents believed that community meetings and workshops were the preferred communication channel. These results clearly show that the project stakeholders prefer the project to use different communication channels in mobilizing communities to participate in REDD+ however, community radio was highly preferred. One of the respondents had this to say: *'Community radio can help to reach out to people who cannot reach formal channels, hizi za kusoma. We can do outreaches but even if we do outreaches, we cannot reach everyone in the community.'*

These findings are consistent with a study conducted in Malawi to investigate how community radio as a communication tool has facilitated community participation in fighting climate change among local communities. According to the study's findings, community radio enabled communities to share knowledge and information about climate change. Furthermore, the

communities used this medium to identify some mitigation measures that would strengthen their resilience to climate change. (Khonje, 2011).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the findings from chapter four. It also provides conclusions and recommendations for the study per the objectives of the study.

5.1 Summary of Findings

5.1.1 Communication activities conducted by the Chyulu Hills REDD+ Project in climate change mitigation

The study established that the majority of the community members understood what REDD+ is and they learnt through community meetings and workshops. The findings of the study showed that community engagement was one of the most effective and popular communication approaches used by the project to communicate and provide updates to communities about the project activities. There exists evidence that the project focused on the involvement of the local community in implementing the project activities. Given that communities have a crucial role to play compared to other stakeholders in formulating and implementing REDD+ activities, their traditional knowledge and connection to the forest give them priority in REDD+ implementation. Thus, REDD+ activities must be undertaken with their full and effective participation. The study also established that knowledge management and stakeholder engagement are the most used communication approaches in providing updates on the project to the project partners.

The study showed that the respondents actively participated in the REDD+ activities with community engagement being the main activity as opposed to other activities such as livestock and rangeland management, forest and wildlife protection and reforestation and improved agriculture. In addition, results from the study clearly showed that there was enough proof to suggest that participation in the Chyulu Hills REDD+ project varied across the 4 wards- Mbirikani, Kuku, Kuku A and Rombo.

5.1.2 Assessment of the effectiveness of the communication approaches carried out by the Chyulu Hills REDD+ project in climate change mitigation

The study established that community meetings and workshops as a communication channel were highly effective compared to other communication approaches. Through these meetings, communities are encouraged to own the REDD+ Project.

The key informants also stated that the project has taken a step as far as communicating its project activities and is moving in the right direction. However, they also recognized that there were still some gaps that needed to be worked on. They said that awareness of REDD+ and the project's activities are still going on at the community level even though the concept of REDD+ is still complex.

5.1.3 Communication Barriers to Effective Adoption of REDD+ Project as a Climate Change Mitigation Mechanism

It was established that despite the effectiveness of the various communication approaches used by the project in communicating, there were communication barriers that affected the adoption of the REDD+ Project as a climate change mitigation mechanism. The respondents admitted that they were experiencing communication barriers. There was enough evidence to suggest that experience with communication barriers differed significantly among the 4 wards.

Besides, what came out clearly from the study findings is that irrelevant information/knowledge share, distrusting information sources, complexity nature of REDD+ information and lack of enabling communication infrastructure were the main communication barriers that affected the adoption of the REDD+ project as a climate change mitigation mechanism. The respondents strongly agreed that these communication barriers had affected the implementation of the project activities and even presented suggestions on how to resolve these barriers. The respondents' suggestions were as follows-project should embrace the use of a language that is conversant to all, use a local mode of communication, employ experienced and qualified staff, develop a systematic communication structure to pass information across the group ranches, use technology-based communication approaches, pre-test the communication channels before using them and create personalized news feeds based on the audience's preferences.

5.1.4 Methods of Communication Preferred by the Stakeholders of the Chyulu Hills REDD+ project

Evidence from the study showed that community meetings and workshops were the most common communication channel used by the project to communicate with the stakeholders, mainly the community members. Further, it was established that there was a very high likelihood that this channel of communication was used by the project to create awareness, unlike behavior change which also seemed to be high. The likelihood of these channels fostering knowledge, influence, attitude, and entertainment purposes was moderate. This demonstrated that the main motivating factor in communicating to communities about REDD+ was awareness creation.

On the other hand, the key informants indicated that the communication channels used by the project included social media (Facebook, Instagram, LinkedIn), community outreaches such as barazas, information boards, reports, telephone communication, Emails, in-person communication and partners' websites. The respondents mentioned that these channels of communication used by the project were relevant in motivating the communities to participate in climate change mitigation through REDD+ despite the concept being new to them. In addition, the evidence clearly showed that the key informants believed that these channels of communication were mainly used to change behavior and influence attitude.

The study further established that community meetings/workshops and community radio were very effective communication channels compared to other channels of communication such as pamphlets and brochures, billboards/signboards, and digital media. The findings of the study also showed that when it came to the stakeholders choosing a preferred channel of communication, most preferred the project to use community radio as the channel of communication. The respondents provided varied reasons as to why the channel they chose was their preferred mode of communication. Evidence showed that the channels were preferred because of varied reasons including information reaching the receiver on time, they drive two-way communication and encouraging community share of voice, providing clear, consistent, and frequent information, they build trust among the users, the channel is commonly used, affordability, cost-effective, reaches a larger number of people within the communities, accessibility and provide authentic, engaging, and fun content.

5.2 Conclusion

The study concluded that though there are many aspects in which a project can communicate to its stakeholders and communities, the efficacy of communication is crucial. This can only be achieved if the project employs the right channels of communication as well as communication approaches in implementing the project activities.

The study concluded that despite the complex nature of climate change information, specifically on REDD+ information, community engagement was a communication approach that the project used to communicate its activities. The complexity and sensitivity of REDD+ information requires the project to have constant and careful interaction with different stakeholders, particularly community members considering feedback from these stakeholders. The study further concluded that knowledge management and stakeholder engagement were the most used communication approaches in providing updates on the project to the project partners.

Further, the study concluded that community meetings/workshops are crucial and highly effective means of communication and can be used to encourage communities to own the REDD+ Project. Further, these meetings allow interactive dialogue and provide a platform for feedback which will help the project achieve its objectives.

In conclusion, having a robust community engagement within the project area is crucial. The local communities have a task to perform in implementing REDD+ activities. Because of their knowledge and the connection with forests, gives them priority in REDD+ implementation. Active involvement of community members in the project implementation also enhances the project's performance.

Further, the study concluded that there exist various communication barriers such as irrelevant information/knowledge sharing, distrusting information sources, complexity nature of REDD+ information, and lack of enabling communication infrastructure that has affected the adoption of REDD+ project as a climate change mitigation mechanism. However, various recommendations were suggested on how these could be avoided in the future. These include the project embracing the use of a local language that is conversant to all, employment of experienced and qualified staff, developing a systematic communication structure to pass

information across the group ranches and use of technology-based communication approaches, among others.

In addition, the study concluded that community radio is the communication channel preferred by the stakeholders in communicating project activities. Community radio is crucial in that it provides two-way communication and encourages community share of voices. It also serves geographic communities and communities' interests which may often be overlooked by other forms of media.

Finally, this study has increased our understanding of the efficacy of communication in climate change mitigation on the REDD+ Project. Evidence from the study suggests that we need to go beyond expectations in acknowledging the importance of REDD+ communication. Thereby, knowing the audience will assist in distinguishing the most suitable communication approaches and tools that will help improve the competitiveness of the project.

5.3 Recommendations

The recommendations resulting from the study findings are as follows:

1) The study recognized that community radio has been of minimal use. Consequently, this mode of communication should be considered as an avenue to allow interactive discussions and feedback from communities on the REDD+ Project.
2) Strengthen the communication structure of the project by employing qualified and trained communication personnel who are conversant with environmental and science communication. They can explain and crack the complex information on REDD+ to communities.
3) Enhance the implementation of the communication strategy established by the project. This will guarantee that relevant information is disseminated to the right people, both internally and externally.
4) There is a need to improve the stakeholder's capacity so that they can analyze and comprehend the REDD+ activities and develop policies for acquiring more benefits from the REDD+ project.
5) There is a need to embrace the use of technology-based communication approaches in communicating REDD+ such as having an animation on REDD+ in Maa language.
6) Having permanent signage and branding of project items.

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APPENDICES
Appendix 1: Questionnaire

Dear Participants:

This questionnaire aims to gather relevant data to understand the Efficacy of Communication in Climate Change Mitigation in REDD+ Project in Chyulu Hills, Kenya. I am requesting you to share your genuine experiences and concerns to enhance the success and validity of this research. Please take note that your personal details will not be revealed, and the responses provided will only be used for academic purposes.

Section A: Demographic Information

1. **Gender:**

   Male   [   ]

   Female   [   ]

2. **Age**

   18-30 Years   [   ]   31-40 Years   [   ]

   41-50 Years   [   ]   Above 50 Years   [   ]

3. **Occupation**

   - Farmer   [   ]
   - Herder   [   ]
   - Casual Laborer   [   ]
   - Other, Specify ……………………………………

4. **Indicate the highest level of education. Kindly indicate one**

   Primary Education   [   ]

   Secondary Education   [   ]

   Tertiary level   [   ]

   Not Applicable   [   ]

Section B: The communication activities carried out by the Chyulu Hills REDD+ Project

1. **Do you understand what REDD+ is?**

    Yes   [   ]   No   [   ]

2. **If yes, how did you get to know about REDD+?**

    a.   Community radio

    b.   Digital Media

    c.   Billboards/Signboards

    d.   Community meetings/workshops

    e.   Pamphlets and Brochures

    f.   Other (Specify)…………………………………………………………

3. **Are you participating in the Chyulu Hills REDD+ Project?**

    Yes   [   ]   No   [   ]

4. **If yes, which REDD+ activities are you involved in?**

    a.   Forest and Wildlife Protection   [   ]

    b.   Livestock and Range Management   [   ]

    c.   Community Engagement and Support   [   ]

    d.   Reforestation and Improved Agriculture   [   ]

5. **Which of the following communication approaches do you get updates about the**
    project ?

a) Information sharing and Knowledge Management (Websites, Facebook)   [   ]

b) Capacity Building (training, workshops)   [   ]

c) Community engagement(Barazas)   [   ]

d) Stakeholder engagement (Partners meeting)   [   ]

Section C: The effectiveness of the communication activities carried out by the Chyulu
Hills REDD+ project.

1. **How effective are these communication activities for the project? Tick where**
    appropriate.

Communication Activities	Very Effective	Quite Effective	Effective	Not Effective	Not Sure

Information sharing and Knowledge Management					
Capacity building					
Community engagement					
Stakeholder engagement					

2. **Have you encountered any ineffectiveness in communication activities?**

   Yes   [   ]   No   [   ]

3. **If yes to 2 above, do you have any suggestions on how to improve?**

   a. —---
   b. —---
   c. —--

4. Do you have any preferred communication approach? You can tick more than one

   d. Information sharing and Knowledge Management(Websites, Facebook)

   [   ]

   e. Capacity Building (training, workshops)   [   ]

   f. Community engagement(Baraza)   [   ]

   g. Stakeholder engagement(Partner/ stakeholder meeting)   [   ]

5. Why do you prefer the selected communication approaches?

   h. --
   i. --
   j. --

Section D: The communication barriers to effective adoption of Chyulu REDD+ project activities.

1. **Are you experiencing any communication barriers to the effective adoption of Chyulu REDD+ project activities?**

Yes   [   ]   No   [   ]

2. **If yes, kindly state which among the following you have encountered. You can tick more than one.**

    a. Irrelevant information/ knowledge shared   [   ]

    b. Information overload   [   ]

    c. Distrusting information source   [   ]

    d. Complexity nature of REDD+ information   [   ]

    e. Social norms (beliefs, values)   [   ]

    f. Organizational culture (goals, rules and regulations)   [   ]

    g. Lack of enabling communication infrastructure

    h. Physical barriers (i.e., distance)   [   ]

    i. Language barriers   [   ]

    j. Others (Specify)……………………………………………………………………

3. **In your opinion, do you think the communication barriers above have affected the implementation of the project activities ?**

   Yes   [   ]   No [   ]

If yes above, kindly specify how …………………………………………………………………….

4. **Do you have any suggestions on how to resolve the above communication barriers, if any?**

    a. --

    b. ---

    c. --

Section E: The methods of communication preferred by the stakeholders of the Chyulu Hills REDD+ Project.

1. **Which is the following method of communication the project uses?**

a) Community radio

b) Digital Media

c) Billboards/Signboards

d) Community meetings/workshops

e) Pamphlets and Brochures

f) Other (Specify)…………………………………………………………………

2.   What is the likelihood that the above communication channels will be used for the following reasons?

Communication Reason	Very High	High	Moderate	Low	Very Low
Creating Awareness					
Behavior change					
Influence attitude					
Foster knowledge					
For entertainment					

For any other reason, Specify …………………………………………………………………

3.   How do you rate the effectiveness of the above communication channels used by the project? Tick where appropriate

Communication Methods	Very Effective	Quite Effective	Effective	Not Effective	Not sure
Community radio					
Digital Media					
Billboards/Signboards					

Community meetings/workshops					
Pamphlets and Brochures					

4.   **Have you encountered any ineffectiveness in the above communication channels?**

        Yes   [   ]   No   [   ]

5.   **If yes to 2 above, do you have any suggestions on how to improve?**

        a.   ---

        b.   ---

        c.   ---

6.   **Do you have any preferred communication channel? You can tick more than one**

        a.   Community radio   [   ]

        b.   Digital Media   [   ]

        c.   Billboards/Signboards   [   ]

        d.   Community meetings/workshops   [   ]

        e.   Pamphlets and Brochures   [   ]

        f.   Other (Specify)……………………………………………………………

7.   **Why do you prefer the selected communication channels?**

        a.   ---

        b.   ---

        c.   ---

Thank you

Appendix 2: Interview Guide for the Study

Dear Participants:

The purpose of this questionnaire is to gather relevant data in order to understand the Efficacy of Communication in Climate Change Mitigation in REDD+ Project in Chyulu Hills, Kenya. I am requesting you to share your genuine experiences and concerns to enhance the success and validity of this research. Please take note that your personal details will not be revealed, and the responses provided will only be used for academic purposes.

Part 1: Demographic Information

Gender

Age

Educational Background

Part 2: Questions about REDD+

1. What's your understanding of REDD+?

2. What is your role in this REDD+ Project?

3. What is your take on the efficacy of communication in the Project implementation?

4. What communication channels do you have in place?

5. How relevant are the channels/ messages in motivating the community members of Chyulu Hills to participate in climate change mitigation through REDD+?

6. How effective are the channels/ messages in motivating local people to participate in decision making about REDD+?

7. What communication challenges have you noted in the implementation of the REDD+ Project in Chyulu Hills?

8. How would you like these challenges to be improved upon?