

**THE ASSESSMENT OF THE APPLICATION OF PARTICIPATORY
COMMUNICATION IN THE IMPLEMENTATION OF SUSTAINABLE
AGRICULTURAL PROJECTS IN KARAI WARD**

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DECLARATION

I hereby declare that this research project is my original work and has not been presented anywhere to the best of my knowledge. No part of this report may be reproduced without the prior permission of the author.

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DEDICATION

This research project is dedicated to the communities of Karai Ward in Kikuyu, those struggling with the provision of food for their families and as a means of income generation. It is through hard work, determination and God's grace that these vulnerable farmers endeavor to achieve their best in food production despite challenges they face daily.

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LIST OF ACRONYMS AND ABBREVIATIONS

CAK	Communications Authority of Kenya
CBOs	Community Based Organizations
FAO	Food and Agricultural Organization
GDP	Gross Domestic Product
PRCA	Participatory Rural Communication Appraisal
UK	United Kingdom
DFID	Department for International Development
VIPP	Visualization in Participatory Program
PEP	Participatory Evaluation Process
NGO	Non-Governmental Organization
WFP	World Food Program
GOK	Government of Kenya
ASDS	Agricultural Sector Development Strategy
SRA	Strategy for Revitalizing Agriculture
NFSNP	National Food Security and Nutrition Policy
UNDP	United Nations Development Program
PD	Participatory Development
MDG's	Millennium Development Goals
FGD's	Focus Group Discussions
KNBS	Kenya National Bureau of Statistics
CoK	Constitution of Kenya
DFRD	District Focus on Rural Development

ABSTRACT

Improved communication is one of the recommended methods to strengthen rural learning towards addressing the problem of food security. Over the past, research has consistently demonstrated that stakeholder-aligned strategies of communication can be a catalyst in expediting agricultural projects' sustenance. Hence, all stakeholders are able to influence a project either positively or negatively. The purpose of the study was to determine the use of participatory communication in sustainable agricultural projects in Karai Ward. The specific objectives were to: examine the farmers understanding of participatory communication in sustainable agricultural projects; assess how participatory communication is applied in different implementation levels of sustainable agricultural projects and to identify factors influencing the application of participatory communication in sustainable agricultural projects. The study was based on a mixed-methods research approach with farmers in Karai Ward as the target population. A random sample of 100 farmers was drawn. Nine agricultural officers in the area were also selected through purposive sampling to serve as key informants to the study. Data was collected by the researcher using a questionnaire and an interview guide. Both quantitative and qualitative data were collected. Quantitative data gathered from the farmers was analyzed by employing descriptive statistics. On the other hand, qualitative data sourced from the key informants was analyzed using thematic content analysis. The findings revealed the majority of the residents in the area under study comprehended the meaning of participatory communication in the sense that they should be given a chance to express their views on what they think concerning agriculture in the area. It was established that farmers in Karai Ward are usually involved in all the activities of the agricultural projects implemented in the area. The findings also revealed that lack of commitment by the project facilitators, poor leadership of the projects and lack of funds are the key constraints to participatory communication in agricultural projects implemented in the region. Based on these findings it was concluded that agricultural projects in Karai Ward are mostly done through an extensive and unique participatory manner. To this end, the study recommends more awareness on the role of farmers and the farmers in ensuring participatory communication in agricultural projects through establishment of community-based information technological centers.

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CHAPTER ONE: INTRODUCTION

1.0 Overview

Chapter one covers a general outlook of the background of the study and the societal problem that it seeks to study. It also contains the study's objectives and the research questions it seeks to answer.

1.1 Background of the Study

1.1.1 Agriculture in Kenya

The agricultural sector is a pillar of the global economy and serves as a means of revenue generation of about 60% of the population across the globe (Chemutai et al, 2012). In this regard, agriculture is prioritized in the national development blueprint agenda, the Vision 2030 of Kenya and the Big4 agenda of the ruling government, which aims at transforming the nation to a middle-income country by rapidly developing industrialization. The agricultural sector is identified as a key driver of the nation's economy through which it has envisaged 10% annual economic growth (Standard Group, 2014). The agricultural sector accounts for 65% exports, 60% of the total labor force, and provides livelihoods to about 70% of the Kenyan population (Kenya Institute for Public Policy Research and Analysis (KIPPRA), 2018). This clearly shows that agriculture plays a very important function in the growth of any economy in the country.

For maximum productivity, stakeholders' capacity to control the environment results in the need to improve available resources including skills and knowledge. The application of these resources depends on changes in the marketplace, culture, environment as well as information which exists among development stakeholders. In this case, stakeholders interact to shape and enrich their skills and knowledge base (Food

and Agriculture Organization (FAO), 1995) and make choices to maximize the output and minimize the cost of production. Every individual, literate or illiterate needs information to inform their decision making thus every population involved in agricultural growth needs access to information (Davies, 1976). Participatory communication is therefore seen as a process for agricultural development. There have been existing definitions of communication by scholars, though it has been difficult to agree on a single definition. According to Fielding (2006) communication is a state where participants are able to develop meaning by exchanging symbols. He emphasizes on the aspect through which people working together create meaning from symbols and the meaning is understood from different contexts. Raman and Singh (2012) noted that communication involves the exchange of information through the use of symbols and a common system. Communication is a dynamic process of sharing information between individuals (Ewruhjakpor, 1989). Communication is very important for information sharing among stakeholders. The information has to be correct, timely and relevant for the stakeholders to effectively understand.

1.1.2 Communication for Development

With increased cases of food insecurity and climate change, community engagement is highly needed for coping strategies and site-oriented adaptation. To attain full potential, communication for development needs to be considered in the early stages of needs identification and formulation of designs, planning, and the implementation. According to Alfonso (2006) communication is a process of dialogue in strengthening the demonstrations of diversity and drives at different levels of society. In this case, listening to farmers and gathering information on their different perceptions, attitudes, skills and

knowledge is an initial step towards ensuring that an initiative for development is designed to meet the societies' needs most appropriately.

The integration of communication and participation has given stakeholders access to information, knowledge, and skills towards the development process. In the quest for information, stakeholders are shifting to platforms of knowledge and skills access through research. There has been a high output of agricultural research, which has led to a pool of technologies of information sharing to stakeholders. To hasten the pace at which this information is shared among the stakeholders, a variety of approaches have been adopted for a wider reach of stakeholders.

Communication for any development relies on the sustainable development principle and transformation cannot occur without the sensible and dynamic contribution of stake-holders at each phase of the process of development. The participatory approach integrates a variety of techniques and media from radio to visual and technological advancements so as to attain equitable information access, distribution of knowledge and inclusivity in making decisions for agriculturalists and rural residents. In development history, the shortcomings can be attributed to two factors that are intertwined; poor participation and ineffective communication (Ramirez & Quarry, 2004). Communication, therefore, is important in supporting participatory development by bridging the understanding within the human community (Ramirez & Quarry, 2004). Agricultural development projects can be of great value from the integration of development communication to raise the levels of participation, enhance coordination and collaborations and hence lead in improved project outcomes and sustainability.

Communication is an integral part of development, which involves input from all stakeholders. The theoretical and practical underpinnings of community participation ascribe an essential function in communication within the process of development. Participation by community members, as an alternative technique to development, needs other alternative channels, strategies, and types in pursuit, actualization, and sustainability of the development objectives (Kasoma, 1990).

1.1.3 Aspects of Participatory Communication

Participatory communication was developed in a theoretical framework and its conceptualizations are based on the individual's involvement in making decisions in the development programs (Frank & Hernando, 1973). This is meant to highlight the importance of the communities in actively taking part in the development process.

Participatory communication was developed as a strategy of ensuring that the people are involved in development that has a direct or indirect impact on their livelihoods.

Participatory communication is a technique grounded on dialogue allowing sharing of perceptions, information, and views of different stakeholders as was posited by Frank and Hernando, (1973). Communication facilitates empowerment, particularly to individuals who are within the marginalized areas (Thomas & Mefalopulos, 2009).

Traditionally, communication was only taken into account after projects had already begun. This was done by passing information to the people on the existence of projects. Participatory communication requires that the communicator is committed to ensuring that the people involved know the subject and the project. One of the major examples portraying the use of participatory communication in development is the MDGs implementation. Participation of the people is not new in Kenya as it has been

emphasized in the Constitution (2010), as one of the principles of governance. Actors in leadership and political sphere have in the past developed strategies for public participation. Notable experiences in successful community involvement in national public sector programs implementation include the family planning campaign in the 1970s and the anti-HIV/AIDS campaign in the 1990s/ 2000s (Chemutai et al, 2012). Public participation is now mandatory in Kenya for policy and legislative development according to the constitution.

Participatory communication is one of the many ways to enhance community contribution in development projects. Generally, Participatory Communication was rare in development processes and the main aim was to empower marginalized communities to contribute to wider political and social development. This is, therefore, a requirement of the national and county governments to consider public participation in the development agenda. For effective development, stakeholders should get involved in participatory communication thus informing decision making at all levels and stages of development. Such participation ensures that all parties involved have similar and equal chances to influence the outcome of the development project (Thomas & Mefalopulos, 2009).

1.1.4 Concept of Community Participation

The community participation concept is not new with regards to the development of rural regions; since the 1960s, the concept has been written and talked about (Odhiambo, 2010). Community participation discourse has gained prominence in the development agenda in line with human civilization (Ajayi & Otuya, 2006). Shaeffer (1994) provides some specific activities that involve high levels of participation in the

development context including gathering and analyzing of information, setting goals, decision making, designing strategies and implementing programs. Participation has been operationalized in various interventions, an indication of multiple and varying perceptions and opinions to participation. For instance, Pretty *et al.*, espoused that participation is adopted to develop self-reliance and local capacity and to express a justification for the extension of a state's control. Pretty *et al.*, (1995) argued that the term participation has been adopted in the collection of data and for interactive purposes.

The term participation has been adopted to devolve government functions and power. Often, individuals are pushed to take part in operations that may interest them using the term participation. It has also been used for data collection and also for interactive purposes. However, community growth discourse can be traced to the social movement in Chile. The inclusion of citizens in development agendas has been appreciated and become a common phenomenon embraced by a large percentage of organizations and governments globally. The process of community development remains a vibrant tool towards development interventions which influence and support communities from all walks of life towards changing the livelihoods and living standards of each (Shirley, 1979).

For successful project development, the concepts of communication and participation are essential. Most of the projects in developing nations have failed to record success levels due to poor communication and participation mismatching the empowerment process thus failing to overcome poverty (Servaes, 2002). Nevertheless, the application of communication for community development is uncertain, depending on the blocks of time has been discussed by Henderson (2008). Henderson (2008) asserts

that community development began in the 1960s through writings and ideas by scholars such as Murray Ross and Ellen Younghusband. Community development interventions during the time focused on the top-down approach where development was fully implemented by the government. This resulted in the communities accepting that it is primarily the government's efforts that contribute towards sustainable development. The administrative focus, therefore, is created on knowledge and resource exchange to beneficiary societies. The approach focused on maintaining community development amid the economic constraints of the communities.

According to Henderson (2008), the year 2000 is known as the new millennium for community development. Stakeholders were gradually becoming more aware that community development is too dependent on the government and implementation bodies, thus the focus shifted to a community's potential towards development.

Participation in research is the approach for the acquisition of in-depth knowledge and intuition into the cultural spectacles attributed to the people. Participatory techniques show a move towards developing human resources and empowering the societies in agricultural development. These techniques use different tools and methodologies of the participatory concept including offering farmer to farmer extension services, farmer field learning and participatory rural appraisal, Rapid rural appraisal, and the ecosystem analysis. The participants share some essential information with the researcher through their involvement in the project plan, data collection, analysis and action phase. The International Development Communities have embraced the use of Participatory Research Appraisals (PRA) techniques in the promotion of participatory methodologies and goals. Following this logic, the Government Department for International

Development (DFID) in the UK invited the Development Institute to conduct an analysis on the PRA usage in Africa (Age, Obinee & Demenongu, 2012).

Food and Agricultural Organization (FAO, 1990) supported the development of Centre for Communication Development with the application of the Participatory Rural Communication Appraisal (PRCA) as an innovative methodology towards sustainable development. The methodology integrates participatory techniques with methods of communication aiming at highlighting issues in the social settings while establishing capabilities and capacities of people who participate in the development process. The initiatives push for the identification of materials and strategies that help people residing in rural regions to communicate their needs, problems, knowledge and solutions. The enunciation of one's perception is key to genuine participation where stakeholders shape the decision-making process. In Kenya, the use of Participatory Rural Appraisal, Visualization in Participatory Programs (VIPP) and Participatory Evaluation Process (PEP) have been used for community health development in building capacities to control HIV/AIDS spread in Siaya, Busia and Suba Districts. According to the Institute of Development Studies at Sussex University, PEP has been used as a tool to mobilize coffee farmers in Gatheri, Muranga District. Most rural communities still live in desolation and with limited access to development initiatives thus leaving the communities with difficulties in the fulfillment of their basic needs. Despite the strategy being implemented through a few county governments such as Murang' a, and Makueni, the culture of participation has not been properly rooted in other counties. The lifestyle has not yet improved as expected.

1.2 Statement of the Problem

The concept of sustainable agriculture continues to pose a serious challenge not only in Kenya but also in many developing countries. Development partners such as the World Bank, European Union and United States Agency for International Development (USAID) have been expressing concerns on the need to have sustainable agricultural projects (United Nations Development Programme (UNDP), 2012).

Age et al. (2012) in their study portray the imbalance in the distribution of agricultural information. The possibility of harnessing the full capability of the rural population towards achieving high production remains a problem. The effectiveness of communication in interactive information sharing has partially been recognized despite the fact that researchers are still researching ways to improve agriculture through communication. Not surprisingly, the implementation of participatory communication in some programs and projects has received criticisms for not matching its philosophies and it has been debated that it is simply a window- shopping strategy to legalize the already made decisions (Calderon, 2013). Calderon (2013) further argues that to attain efficient participation there is a need to identify and empower stakeholders to sustainable development.

Effective communication improves the involvement of the members of the community in development projects. The essence of knowledge and information sharing for development settings has firmly been established through a variety of approaches including research (Inagaki, 2007). Access to agricultural knowledge and information is identified as being one of the biggest determinants of agricultural production in the world (Masuki, 2010). However, cases of food security have increased greatly in Kenya despite

efforts in improving the communication process and drawing the link to agricultural development. Often, individuals are influenced into taking part in operations of no interest to them in the disguise of participation.

A lot of research has been conducted on communication in the agricultural sector (World Bank, 2015). A study by Shahzad et al. (2011) shows that various public and private institutions use communication channels such as print media and broadcast to catalyze agricultural innovation and diffusion processes. The study also shows that there are emerging challenges of information access to the stakeholders in the agricultural sector. The study by Yakubu, Abubakar, Atala and Muhammed (2013), show that access to information is based on the dissemination in the mass media through radio, and television where most stakeholders only receive information, thus there is limited or no interaction at all which makes participatory communication significant in development projects. The aspects of stakeholders' contribution are a concern in regards to the implementation of agricultural development projects.

Despite the truth that communication is encouraged by relatively all high-ranking decision makers and stakeholders, specialists in communication in this field still debate that it is not consistently and effectively applied (Thomas & Mefalopoulos, 2009). Therefore, this study sought to address this gap by examining farmers' understanding of participatory communication, levels of participatory communication and factors influencing its application in sustainable agricultural projects. This study sought to fill this gap, as it would provide helpful ideas on how to use communication in the new framework of participatory citizenry in sustainable agricultural development.

1.3 Objectives of the study

1.3.1 General Objective

The general objective of this study was to analyze the application of participatory communication in agricultural projects in Karai Ward, Kikuyu Sub-county.

1.3.2 Specific Objectives

- i. To examine farmer's understanding of participatory communication in sustainable agricultural projects in Karai Ward.
- ii. To assess how participatory communication is applied in different implementation levels of sustainable agricultural projects in Karai Ward.
- iii. To study factors influencing the application of participatory communication in sustainable agriculture projects in Karai Ward.

1.4 Research Questions

- i. What are farmers understanding of participatory communication in sustainable agricultural projects in Karai Ward?
- ii. How is participatory communication used by stakeholders in different levels of agricultural project cycles. (Needs analysis, Program design, implementation, monitoring and evaluation)?
- iii. What are the factors influencing participatory communication in sustainable agricultural development?

1.5 Significance of the Study

Despite the availability of information supporting agricultural production, most of the information may not be delivered to the stakeholders in the correct and timely manner especially in rural areas. Issues regarding information access, language barriers, limited

communication tools have made the situation worse. The principle of this study was to contribute to understanding the aims and objectives of communication in the agricultural sector. The findings contribute to information and knowledge that can create an impact agriculture sector through information sharing to improve production. Communication is important in supporting participatory development. Communication bridges the understanding within a specific community through the exchange of messages to add value to meaning and common knowledge, often to embrace change (Quarry, 2004).

Of great interest is the examination of how well the citizens involved in community participation practices are conversant with the development agenda and the kind of participation entailed during the process. With food security being one of the government's Big 4 Agenda priorities, the study seeks to explore aspects of communication in community participation in the agricultural sector. The study could create references to the various stakeholders; the government agencies, Non-governmental organizations, private institutions who plan to share information widely for high production. The understanding could enhance improved approaches towards better performance in the agricultural sector for sustainable development.

The findings of this study could be crucial in informing policy decisions at the national and the Ward level on Agricultural development. The study can inform the Policymakers on the situation of participatory communication in the enhancement of community contribution and this could be fundamental in improving agricultural production.

1.6 Operational definition of terms

Agricultural development refers to creating a sustainable path towards improving the quality of agricultural services thus impacting on high productivity through the adoption of innovations and new ideas and information.

Application refers to the extent to which participatory communication is adopted or used in a project.

Communication refers to the multi-directional or two-way flow of information between parties with feedback as a key component.

Community participation refers to the involvement of community members in projects to address the social issues.

Inclusion refers to the state or action of including or being included within a group or structure of development.

Participatory communication refers to a strategy grounded on dialogue that involves sharing of perceptions, information, and views among various stakeholders facilitating empowerment.

Participatory development refers to an approach to development that actively involves the stakeholders in all stages of the development project.

Stakeholder refers to a person with an interest in the development program.

Sustainable agriculture refers to farming practices that seek to sustain farmers, resources and communities for long term guided by understanding the ecosystem.

CHAPTER TWO: LITERATURE REVIEW

2.0 Overview

This chapter outlines various literature references that address different levels of communication, agricultural information and community inclusion in sustainable agricultural development. The discussions in this chapter are categorized into the concept of communication, agricultural information and community participation as approaches used in agricultural development. The chapter also focuses on the emphasis on participatory communication as the major pillar to uplifting agricultural growth through enhancing community participation in four different stages; economic participation, the evolution of new outset of participation, the view of inclusion in the development of participation policies, and participatory communication. This chapter also explains the theoretical framework relationship and how independent variables affect the dependent variable. The conceptual framework shows a representation of indicators and how the variables are related to the dependent variable in diagram form.

2.1 Status of Agriculture

Universally, the agriculture sector is essential in facilitating development particularly in developing nations where it contributes a large percentage in the GDP growth of a nation. Agriculture contributes a larger percentage of livelihood for about 86% of the rural households (World Bank, 2015). Agriculture provides income, food and jobs, thus able to fuel and accelerate growth entirely in agriculturally based developing countries. It can as well be termed as an effective tool towards the reduction of poverty in most developing countries. The balancing of agricultural development and the inclusion of the stakeholders should work in complementarity to support the development process.

According to the World Bank (2008), the world faces an enormous crisis resulting in high food prices resulting in increased poverty and food insecurity. Ongoing fragility and conflict, large-scale shift in production, climate change, and natural resources degradation continue to intensify food insecurity for millions of people (World Bank, 2007). A key challenge is related to the food crisis and the levels of poverty attributed to the nations' population and its demand. There is indeed a call for change towards the increase of food production through sustainable agriculture in the world and most particularly Sub-Saharan Africa. This can be achieved through the improvement of rural development among African states (KIPPRA, 2018). This indeed requires investing in viable solutions relating to agricultural production through structural functionality, institutional policy-making, land markets research, rural infrastructure and the stabilization of food prices.

The universal food crisis has caused alarm to the international community on the vital role of smallholder farmers in ensuring food security (World Bank, 2017). Rural development and sustainable agriculture in sub-Saharan Africa are a critical force in ensuring food security, yet this has been largely ignored particularly in the inclusion of communities in the designing, implementing, monitoring and evaluating development projects. Sustainable agriculture and grass-roots development entail the administration and preservation of the natural resources base and the alignment of high-tech and organizational change. This certifies the realization and continuous fulfillment of the development agenda. Sustainable development in agriculture entails the production, conservation, processing and marketing of agricultural products towards the provision of solutions to human needs (FAO, 2005).

The scope of development is defined by the broad spectrum of transformations at different levels. This is greatly defined by improvements in the individuals within a society. The process of effective distribution of resources, impacts humans through benefits accrued to the processes (Robinson, 1979). Universal development policies seek to advance the livelihood of rural societies. This is highly appreciated in development and supposed to be a constructive step especially in developing nations where most of the individuals reside in marginalized regions (Kimani & Muia, 2004). According to the UNDP (2012) it is in rural regions where surplus investment and foreign exchange are greatly undertaken.

2.2 Status of Agriculture in Africa

Various African nations have witnessed the adverse impacts of food insecurity at the household level, for example Cameroon, Ethiopia, South Africa and Egypt. The World Food Program (WFP) portrays Cameroon as having the uncertainty of food sustenance and as having been hit by harsh cases of malnourishment in many households (World Bank, 2017). This has resulted in close to 19% of underweight children between the ages of 2-12 years which has resulted in increased death rates. Ethiopia experiences serious food insecurity issues for households in the nation. Close to 7 million people are classified as food insecure out of a total population of 76.9 million and 10 million people are prone to drought and famine. With the rapid growth in population, issues of food insecurity are portrayed in East Africa (World Bank, 2017).

The agricultural sector in Kenya is key in building the economy of a nation by contributing 25% of the GDP directly and 27% indirectly (KIPPRA, 2018). According to KIPPRA (2018), the sector has created close to 60 % employment opportunities of the

total population and over 70% of the communities living in the rural areas benefit directly from agricultural production. The agricultural stakeholders including the government, parastatals, non-governmental organizations, private sectors, and the farmers focus on agricultural revenue generation thus contributing to about 65% of the total export earnings as well as income for Kenyan communities. Agriculture in Kenya faces a lot of challenges and threats such as increased food demand with limited supply, heightened fuel prices, climate change and economic instability (Kenya National Bureau of Statistics (KNBS), 2018).

Until 2013, Kenya was classified as one of the water-deficient countries in the world (World Bank, 2015). A large proportion of the country accounts for more than 80% of the arid and semi-arid areas with an average rainfall of 400mm. Agricultural land is 1.5 million ha translating to 11% arable land. Cultivated land covers about 36% of the land suitable for cultivation hence there are prospects for agricultural expansion. Kenya's population is about 50 million having grown from 8 million in 1960 (Kenya National Bureau of Statistics, 2013). With an annual growth rate of about 2.8 percent, it is projected that it will reach 51 million by the year 2025 (Thaxton, 2007). Kenya strategic plan, Vision 2030 is being implemented to ensure that there is an annual 10% economic growth to accommodate its growing population through food production (Standard Group, 2014). The proportion of citizens living in the urban areas increased from 7.4 % in 1960 and it's projected to hit 33% by 2030, which will result in the imbalance of food demand and supply.

Kenya has agricultural development strategies and plans to help in the improvement of agricultural productivity to solve food security issues (KIPPRA, 2018).

The enactment and consolidation of the agricultural reform bill into the Kenyan policies provides avenues for improving agricultural productivity (Government of Kenya (GoK), 2010). In 2008, Kenya adopted the vision 2030 strategic blueprint for the development of Kenya. The road map to the sustainable development of Kenya is established in the economic and social wellbeing of the Kenyan communities in the next two decades. It aims in achieving the transition of Kenya into a new era of industrialization, in a middle-income nation improving the quality of life for each citizen with a secure and clean environment. Agricultural development is aimed at the improvement and transformation of smallholder agricultural stakeholders from subsistence to commercial and innovative modern agricultural sectors.

Revision of the Strategy for Revitalizing Agriculture, resulted in the establishment of the Agricultural Sector Development Strategy that addresses food security and aims at a paradigm shift from subsistence farming to commercialized production. The role of development partners in the agricultural sector aims at prioritizing on the agricultural sector as a major pillar towards development. However, internal and external support in sustainable agricultural development remains a constant challenge facing the sector. The achievement of food security nationally is currently the key objective of development (GoK, 2010). In recent years the country has been facing severe food security problems. This is depicted by the status of a high proportion of the population having limited access to food in the accurate quality and amounts. Official approximation in 2008 by the Kenya Food Steering Group revealed that more than 10 million people in Kenya experience food insecurity with most of them depending on food aid. Due to increased food prices, households are incurring huge food bills both in urban

and rural Kenya (KIPPRA, 2018). The food security problems are attributed to several factors including lower productivity, development changes, policy formulation and implementation, high cost of agricultural production and political affiliated issues.

The Promulgation of the Constitution of Kenya (CoK) in 2010 enunciated reforms key towards achieving development. The establishment of devolved functions in development provided a platform for the inclusion of Kenyan communities in the policy formulation, design strategy and implementation, monitoring, and evaluation. The government should create a provision to reinforce sustainability by ensuring that county governments work with the people towards achieving development.

The Agricultural Sector Development Strategy (2009-2020) was established to streamline the initiative by the agriculture sector to the vision 2030. In 2011, the National Food Security and Nutrition Policy (NFSNP) was formed aimed at improving nutrition and food security, management of information systems and coordination of different roles by various agencies and ministries to attain food security (KIPPRA, 2018). According to KIPPRA (2018), there are strategic interventions towards the realization of the Big4 agenda on Food security, through the promotion of indigenous food consumption for households within Kenya. Production of indigenous food can improve in diversifying the staple food and improve the overall quantity of food production in a specific nation. Enhancing of food market information systems is another strategy aiming at informing on global, regional and local markets.

The interrelation between the pillars of national development and the incorporation in the Big4 agenda creates a platform for growth and development. Devolution is based on the provision of financial and inclusion support in agricultural

plans to achieve long-term economic goals. The expansion of public spending on extension services, rural infrastructure, and advancing agricultural research will improve agricultural development for domestic and commercial production (KIPPRA, 2018). The potential in agriculture could become the leading factor fueling growth and sustainability following the central government's allocation of national resources (GoK, 2010).

2.3 The Role of Agriculture in Development

The decline of the international community support to agricultural development in the 1960s and 1970s resulted in poor agricultural productivity and food price stability (FAO, 2005). In recent years, transformative development is taking place to provide solutions for sustainable agriculture. The G8 countries promised to grant \$22 billion for agricultural investment across the globe during the Aquila meeting in 2009 in Italy (de Janvry, 2010). Developing nations have ascribed to the use of the traditional model of agriculture instead of integrating modern technologies and ways of practicing agriculture. The Canonical model was propagated by Lewis (1954) and later advanced by Ranis and Fei (1961). The model by Lewis indicated that in the agricultural sector, there exists surplus labor. Thus, higher productivity and growth in the sector can be qualified by human capital investment in design planning, execution, and evaluation. The design hereby entails the identification of needs and associated with the solutions in need to solve the food crisis. Overall agricultural growth can be achieved through the contribution of the community and using the modern aspect of inclusion in the development. Improving the Lewis model, Johnston and Mellor (1961) explicitly explain the active role the economy plays in the development of sustainable agriculture. The

economic participation in this aspect can greatly feature in elevated agricultural productivity through the mass.

The high production in agriculture can result in increased income for the population thus creating high demand for increased domestic output. The supply and demand relationship creates platforms of economic inclusion in the development of sustainable agriculture among communities in sub-Saharan Africa. The importance of this integration is emphasized by Singer (1979) and advanced by Adelman's general equilibrium ideology of industrialization led by the demand in agriculture. In this regard, the assertion portrayed by this ideology is based on the pivot strategy towards development which should be directly or in-directly agricultural-driven rather than export-driven. Sustainable investment in the agricultural sector strengthens agricultural productivity thus a perfect initiator for industrialization and hence reduces levels of poverty (Adelman, 1984).

2.4 The Concept of Participatory Communication

2.4.1 Participation

Definitions of participation have gained differentiations depending on modifications leading in relation to public participation, community participation, people's participation and popular participation. Community participation is the mechanism linking citizenship in the definition and implementation of public policies, as well as its deliberate process, especially in the development realm (Padilla, 2011). According to Brager, Specht, and Torezyner (1987) participation is an approach of educating people and increasing their capability. Involvement of communities has become one of the important aspects of development through implementation of

sustainable programs. It is considered as one of the key concepts towards solving communal issues and creation of solutions suitable for changing the society.

Participation has been in existence in various civilizations and cultures dating back to the history of mankind. Mansuri and Rao (2013) observe that participation was crucial in Athenian democracy in the policy formulation practiced by male citizens. The existence of participatory initiatives as a major element to public life can be traced back to about the 5th century B.C among the Buddhist and Hindu followers in South Asia. In the pre-European era, participation was highly practiced among the Zulu communities in South Africa and the Akan people in West Africa where the power of the local leaders, the Chiefs were limited by the decisions representing the entire communities (Mansuri & Rao, 2013).

Participation is public involvement in a social change process. It ensures that all the stakeholders have a chance to ensure the exchange of ideas and knowledge, analyze their needs and identify the desired course of action towards the creation of solutions that would impact their livelihoods positively (Hancock, 2006). Participation is a strategy for effectively achieving predetermined goals defined by either the members of the community or by stakeholders. Participation ensures that people are empowered to identify the challenges they face, develop a course of action for resolution, frame the desired way forward, implement and evaluate the solutions (Crawford & Langston, 2013).

Participation has currently been a topic of discussion globally, with most political leaders holding promises of greater participation in the conduct of state affairs. The concept of participation is fundamentally a democratic idea (Frank & Hernado, 1973).

The scholars noted that the modern world does not have grassroots participation as a component of human activity. The World Bank learning group conceptualizes participation as a process through which stakeholders share control and influence development initiatives and the decisions will affect them (World Bank, 2008). Therefore, participation is a process for social change involving the people in needs analysis, project designs, implementation of decisions and evaluating the results affecting their lives.

In the context of development, community participation refers to the dynamic process where the recipients influence the design and implementation of growth projects rather than simply accept the portion of the projects' benefits (Paul, 1998). However, community participation ought to be an evolutionary development in which stakeholders are actively involved in development programs at the local, regional and national levels. The need to establish beneficiary involvement is critical to the role participation plays in any development agenda. Paul (1998), in his assertions, he proposes five aims of participatory development including; project cost-sharing, increasing project efficiency, increasing project effectiveness, building recipient capacity and enablement should be considered complementing the development agenda. The need to invest resources in the indigenous local participation is certainly an elevated process towards realizing sustainability of the development projects. The inclusion of beneficiaries actively in the development processes improves the project design through the use of resident acquaintance, project suitability, and a more equitably distributed benefit. The equitable distribution promotes effective resource mobilization and helps ensure sustainability. The call for community inclusion in the development agenda should be understood in

economic, structural, financial as well as decision-making aspects. Therefore, there should be a proper understanding of the levels of participation in the execution of development projects.

Stakeholder Participation has developed community participation approaches towards sustainable growth because the ideas and perceptions of the affected are taken into consideration. Concepts of community participation and popular participation came into the development discourse to enhance the level of participation in sustainable goals.

In the Kenyan context, Participatory development was begun and confined to community development projects by the institutionalization of decentralized planning and implementation of its programs in the 1960s through sessional papers. The elaborate one was the District Focus for Rural Development (DFRD) Strategy, which began operations in 1983. However, the strategy emphasized the contribution of central government workers in the project design and implementation of programs. Chitere and Ileri (2004) note this is contrary to the concept of a participatory approach. The evolution of participatory development was marked by the enactment of the Physical Planning Act in 1996. The statute provided an avenue for community participation in the project design and implementation. Physical planning is also centralized in major towns and the communities residing in remote areas have remained marginalized in participatory planning (Okello, Beevers, Douven & Leentvaar, 2008). The Government formulated the Community Development Fund as a major vehicle to pioneer the participatory approach at the local level. Therefore, participation involves an equitable distribution of political and economic power towards sustainable development.

2.4.1.1 Economic Participation

Rural development recognizes stakeholder participation as the major role in industrialization. It's focused basically on the input accomplishment thus enhancing the realization of development goals. The main aim of economic participation is the need to make sustainable development more efficient and effective. Advancing this assertion through the theoretical approach of Diffusion for innovation, Rogers defines diffusion as the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 2003). Global, national and local development practitioners have applied a diffusion framework in designing and implementing agricultural extension communication campaigns. It was during the late 1960s that participation began to gain eminence: however, there were many carryovers from industrialism (Cornwall, 2006). Agricultural information and knowledge systems are information-based innovations used to apply the posits of diffusion theory to well understand information on agriculture and integrate it to the social and economic situation. Mass media is an effective channel in creating awareness of innovation and thus shapes opinions about the idea.

The first theoretical approach adopted during this time was the economic view of participants drawn from the old ways of involvement in the economic growth of a nation. By 1971, inclusion in development was described as a trend in the mainstream development agenda (UNESCO). This aspect was viewed as traditional development schemes in different nations. In 1972, the international community represented by development agencies and international conferences began to see participation as the core of every development agenda. This was described as the "Rural and agricultural

manpower in development” (Friedrich-Elbert-Stiftung, 1972). Economic participation aimed at reinforcing manpower and making development sustainable. The focus of the approach was thus used as a path to motivate the rural communities to join in development projects. In summary, participation was viewed and implemented as a means to accomplish an end. As failures were experienced in development in the early 1970s, improved planning was seen as key to growth and development. Failure in this instance was blamed on the misappropriation of administration and policy development (Chambers, 1974). Chambers (1974) asserted that there was too much planning and not enough focus on the execution. This presented the differentiation between the practitioner and theoretician, which in the past prevented meaningful participation to be achieved.

2.4.1.2 Policies on Participation

There were distinctions in the late 1960s between the levels of participation regarding sustainable development. This began as a dialogue on the inherent implications of power and policy establishment regarding participation. The participatory theory is founded on Arnstein's work, *Ladder of Citizen participation*, from 1969 (Purdam & Crisp, 2009). Arnstein classified various approaches to citizen participation ranging from the management to citizen control. She emphasized the importance of participation and having the power to affect the outcome and impact of the process. This approach focuses on the redistribution of power through policy establishment and thus power distribution. The establishment of participatory power is leveled in different stages of development which include; Citizen control, delegated power, partnership, placation, consultation, informing, therapy and manipulation.

The ladder highlights the fundamental divisions of powerless and powerful citizens (Arnstein, 1969). Arnstein's theory expounds on participation as it could occur at varying levels and that fundamentally involves the transfer of power.

Wilson and Wilde (2003) expanded the theoretical assertion by highlighting the useful frameworks of this theory towards sustenance. The distinct levels range from power-holders to have-nots and it's the fundamental principle that participation entails the transition of power.

2.5 Beneficiary Participation in Sustainable Agricultural Projects

During the 1970s, the awareness on the inclusion of stakeholders in development projects took an international directive resulting in heightened discussion around sustainable development. Community integrated approach in development paves way for substantial development based on poverty alleviation. International, government and local institutions should, therefore, have the project beneficiaries participate in the development agenda. This awareness resulted in several agencies to promote the participation of the community in development through various projects. The participation of the people involves the basic steps of sensitization and making people participate more in development projects. This inclusion entails the encouragement of local initiatives and self-help. The involvement of the people brings the aspect of active decision making in the process of development. The involvement of a significant number of persons in development situations and actions enhances the well-being and self-sustenance of society (Uphoff, 1987). In this regard, Uphoff stressed the strategies of community participation approaches in development projects;

1. **Induced involvement:** the projects beneficiaries are encouraged to participate in the strategy, design, and work plan activities of any development projects. In various projects, stakeholders are encouraged to make contributions of labor and other active resources which are core to development.
2. **Transitory mobilization for community development:** the community participates in temporary tasks designed during the implementation of development projects. The institutions are hereby advised to incorporate project beneficiaries in the structure of sustainable projects.
3. **Capacity Building:** Participation helps in building capacity and group formation to strengthen the self-formed and self-run groups and organizations through which the grass-root development should be based on.

Participatory development (PD) seeks to engage local population development projects. This is used as an important basic needs approach. The manifestation participation seeks to give the grass-root communities the initiatives and benefits since development projects will be more sustainable. The Top-Down approach model seeks to enhance the capabilities of the people with platforms to exercise participatory responsibilities of needs analysis, project design, implementation, and evaluation.

According to Cornwall (2006), PD can be defined in two aspects:

Social Movement Perspective describes the mobilization of peoples to eliminate unjust and economic distinction. The description of PD sets goals to empower the people and the process for the people to handle the challenges towards the improvement of the communities' livelihood. In this case, the communities should initiate the process which entails the effective decision making of the people towards the design of the development

of sustainable projects. Through the application of dialogue, certain aspects of participation are key to the considerations of sustenance during the exchange of ideas and experiences that leads to solutions.

Institutional Perspective defines PD as the inclusion of inputs of the people in the research, design, implementation, and evaluation of sustainable projects. The peoples' inputs are used as tools for the design of the development agenda.

Participation and other related concepts like sustainability and empowerment are the centers of development discourse (Blackman, 2003). The access to quality services informs the achievement of the Millennium development goals (MDGs) and informs the prevailing human rights discourse. Despite the participation practice, the developing countries still face negative consequences of weak development outcomes (World Bank, 2007). Development interventions in the past have used the top-down approach, where resources and knowledge transfer to the beneficiary communities (FAO, 2007). Having identified the falling short of this approach, the use of the bottom-up approach to development strategy has been appreciated. Since the 1970s, there has been deliberate efforts and approaches towards mobilizing the people for sustainable development. The incorporation of institutional strategies, inclusion of communities and the integrated support of the local authorities constitute the integral parts of concerted efforts geared towards social-economic transformation at the grass-roots. However, in spite of the appeal for the bottom-up approach to rural development the beneficiaries are still deprived of the participatory role in the research, design, implementation, and evaluation of the projects that are meant to improve their welfare and well-being (Blackman, 2003).

2.6 Participatory Communication

The first level to the realization of participatory empowerment in any development is attributed to communication (Chambers, 1995). Chambers uses the concept of rural development tourism to critique how top-down professional and standardization processes that create bias in development. Communication is that which is necessary to overcome the culture of silence (Freire, 1973) and construct a new culture of participation. The incorporation of communication as a gear towards development began after the international community realized the need for this development after the failure of the dominant paradigm pioneered by Rogers. Rogers began the communication model as a very important aspect to include during development.

Freire's conceptualization of dialogue is core to the notion of participatory communication and development. The grassroots people who are majorly oppressed must be engaged in dialogue to free themselves from disempowerment, dehumanization, discrimination, and alienation (Freire, 1973). Freire (1973), asserts that with dialogue, the marginalized can effectively understand their situation and reflect on ways to liberate them from social, cultural and political injustices. Therefore, the notion of participatory communication stresses the importance of cultural identity of local communities, and of democratization and participation at all levels; international, national and local. It points to an approach that members of the community can individually and collectively speak out their opinions (Freire, 1973). The International Commission for the study of communication problems, or MacBride Commission stresses the model of reciprocal collaboration throughout the levels of participation influenced greatly by the communication aspect at all levels. Listening to what others say, respecting the other

members opinions and attitude, and having mutual trust are a few of the strategies embraced by participatory communication as an approach towards sustainable development. Authentic participation directly addresses the power to make informed decisions, and is evenly distributed within the society. Participation may not sit well with those who favor the status quo and thus they may be expected to resist such efforts of reallocation of more power to communities (Lozare, 1994).

A theory that is often overlooked is the diffusion of innovations by Rogers in 1962. The expanded theory majored on the S-M-C-R-E model as an important aspect of sustainable development by Laswell (1948), which primarily describes the top-down model approach. Rogers further explained the importance of communication as a two-way perspective that focuses on the interaction between the receiver and the source of communication. Rogers pioneered the discussion on how communication affects development in 1976. Due to the changes in the paradigm of development, communication created the necessary tandem that categorized development as a participatory approach. After the recognition of this, rogers did not develop a communication model that would capacitate participatory communication gearing towards development. Habermas's theory of communicative action further explains the link between communication and participation. It highlights the potential discourse communication can play for sustainable development (Haberm, 1976).

The United Nation defines participatory communication as a process that allows beneficiaries to speak out, express their aspirations and concerns, and participate in the decisions that relate to development. Following the assertions of Participatory Communication theory, communication facilitates development. The aim is to involve

people particularly the marginal communities and their inclusion towards development. The model is founded for improvements on dialogue, fostering mutuality, and the involvement of the communities in the decision-making processes as well as execution of the projects. The major shift that reinforces this development is fostering the link between communication and development by emphasizing on the two-way communication approach through information sharing. Communication in this instance facilitates development by prioritizing on human rights and empowerment of the grassroots communities. Community media can be used to give a voice to the marginal communities and elicit participation in ideologies, information dissemination, and empowerment. Providing quality and access to information creates a link that merges all aspects of development to the realization of project goals. Communication can help improve on the development effectiveness and efficiency by providing accountability to society through dialogue and giving stakeholders the platform for expressing their views (Inagaki, 2007).

Development occurs when basic needs are met and the economic progress contributes greatly to individual sustenance thus contributing positively to national development. This is the implication of meeting the basic demands of food, housing, infrastructure, adequate education and the will to choose between the options (Thirlwall, 1983; Todaro, 1981). Any change that marks a positive enhancement to improve on the peoples' lives and living standards, is considered development. Development in this context is considered to be a series of positive changes in various factors of health, education, and infrastructure. According to Lele (1975), rural development involves the improvement of living standards of the masses of the low-income generating people

living within the rural areas and enhancing sustainability. In the 1980s, the universal economic recession and external debt forced many countries to withdraw from development programs and instead give priorities to the structural adjustments. This resulted in the rise of rural poor communities (World Bank, 2008).

International communities have been seeking new strategies to initiate rural development through peoples' participation in the development process (UNDP, 2012). This is a translation that development practitioners must aim at the realization of energies within the rural beneficiaries of any development project. Community participation involves an act of sharing what is common to all stakeholders within the development scope. In this case, therefore, participation is shared as a common goal to the community thus shared by all. Popular participation in this instance is, therefore, the active engagement of the development initiators towards the success of transformative development (Tandon 1991). Mass participation, in this case, calls for equitable mobilization and allocation of resources to reach a desirable balance overtime between productivity and sustainability. Therefore, in making development self-sustaining the presence of institutions at the local, regional and national levels must incorporate the implementing capacities to ensure the effective use of resources and effective distribution and mobilization. Development in this instance requires prior planning as the basic framework of any growth agenda. Proper planning ascertains the effective mobilization of resources resulting in improvement of living standards thus enabling the mass to play the full role in national development. Chambers (1983) identifies some biases, which hinder outsiders from appreciating the actual levels of poverty in marginal states.

According to the Citizen's Handbook, community participation in Kenya finds its roots in development projects benefiting local communities (GoK, 2010). The Kenyan Constitution of 2010 provides a strong legal framework outlining the strategies for citizen participation. The exercise of the power invested in the people in these development programs occurs at the national and county level through direct or indirect participation. Article 10 (2) (a) states that Participation of the people is one of our country's values and principled governance. Article 232(1)(d), meanwhile, instructs public servants to include citizens in the process of policymaking (GoK, 2010).

According to Yoon (2004), participatory communication has various elements ensuring that all groups are actively involved with equality as players of development. The major purpose is building collective action in communication. It is fundamental that the participatory communication approach be factored in any development action facilitated by the national, county and local government as well as NGOs development projects, especially in agriculture. In mass communication areas, many development practitioners agree that structural change should occur first in order to establish participatory communication policies (Mowlana & Wilson, 1987).

2.7 Theoretical Framework

The study will be anchored on paradigms and theories of communication that provided relevant and interrelated concepts; Theory of Communicative action and Community participation theory

2.7.1 Theory of Communicative Action

The study will adopt the theory of communicative action pioneered by Jurgen Habermas who aligns his proposition to the Frankfurt school of thought which has its

theories spread throughout many scientific fields. The theory espouses that if all the involved actors are of the opinion that the speech situation structure is convenient and the validity claim is open to suggestions, then social action needs to be aligned towards mutual understanding, then the theory offers a theoretical perspective of participation (Jacobson & Storey, 2004). Habermas communicative action explains that the talking situation is an essential level where the involved members of the community possess consistent and strong arguments by reducing the contradictions in existence within themselves and continuously applying meaning in them (Jacobson & Storey, 2004). According to Habermas, the dialogical process calls for the involved people in discussion with respect to the problematic claim need to implement a hypothetical attitude and perspective that can encourage them to consider the validity of claims irrespective of the immediate situation.

In reference to Habermas theory, the preferred situation for dialogue between an insider and an outsider is attributed to; dialogue grounded on a mutually beneficial understanding of similar opportunities to express feelings, argue, attitude and purpose about the discussion; dialogue that avoids subjectivity of interests and free from influence by others and the correctness, accuracy, honesty and comprehensibility of the statements and data. The assertions of Freire on the praxis of dialogue have similar perspectives. Freire notes that dialogue between agents of change and beneficiaries have similar status for knowledge exchange. The author emphasizes the multidirectional flow of information with specifications to the mutual understanding of communicative action (Freire, 1973).

Other Scholars have devoted their increasing attention to communication processes and effects, among them Klapper (1960), Katz and Lazarsfeld (1955) and

Lasswel (1948). Other scholars such as Schramm (1964), Lerner (1958) and Rogers (2003) had a specific interest to study how communication could be used as an instrument to foster sustainable development. Communication plays an important role in participation and is a key element towards sustainable development. Lerner (1958) states that the desire and need for any social system is to change. The process of change was associated with exposure of communication messages directly or through the media.

The application of this theoretical model portrays a multidirectional approach which does not only apply to economic and political change but also social change. Active communication as an active form of the participatory approach promotes dialogue. Dialogue puts forward equality, empathy and feedback to cover the shortcomings of lack of participation in development projects by improving the platform for farmers to express their perceptions and ideas on the project. Participatory paradigm states that empowerment of the people can be achieved through the use of interaction and information sharing to build the capacity of the people in ideas and knowledge exchange and decision-making processes (Freire, 1973). Thomas and Mefalopulos (2009) note that participatory communication illustrates development as a process of participation for social change and has been ignored and sidelined in the perspective of development. On the grounds of the participatory ideology, development is seen as an ideology that can be developed by the people for the people in the indigenous culture.

According to Rogers (2003), the process of participation must be genuine for local communities and development conceptualization needs to operate in a local setting. Habermas' (2006) notion of communicative action influences development by proposing

how effective dialogue can be used to facilitate equal chances of sharing knowledge and ideas that inform decision making processes.

Freire (1973) espouses that people can be free from oppression once they get an opportunity to handle problems and think from a critical mindset to provide their own solutions. The theory's proponents use this approach as a communicative instrument of participation in the development process. Participatory communication is an open dialogue with continuous interaction to think about the problems of development and the solutions to act on the situations. According to Singhal (2003) participatory communication is a dynamic interaction process where community groups interact to realize their full potential.

The application of participatory communication in sustainable agriculture emphasizes on the dialogue between beneficiaries. Habermas's theory of communicative action states that interaction creates a mutual understanding towards creation of a solution to the problem. The application of participatory communication in agricultural projects aims at encouraging farmers to not only be passive recipients of the program but to accrue greater levels of power and control over the decisions that may influence them. Small scale farmers as defined by Wolf (1985) are individuals who work to earn an income and livelihood using agriculture. The activities entail agribusiness in the field of food-crops, livestock, fisheries and horticultural among others.

Participatory communication seeks to engage farmers in development efforts to address concepts of the issues they face and pose solutions based on their individual perspectives. Communicative action in this development can be understood in four

phases. Tufte and Metalopulos (2009) notes that a participation needs to play an integral part in all of the phases namely;

- 1) Research stage – At this phase, the problem is identified and all of the stakeholders involved in the project identified as well.
- 2) Design stage – The activities of the project are designed with the inclusion of active participation thus improving the interventions relevance.
- 3) Implementation stage – The implementation of the schedule’s activities and involvement of the members improve the relevance and sustainability of the project
- 4) Evaluation stage – the assessment of the outcome and impact. Participation in this case ensures that the problem is illustrated and addressed. At this phase, an identification of meaningful indicators is made.

The application of the theory is to analyze the participatory communication concept, which is referred to as dialogue between an insider and an outsider (Farmer and project facilitator or officer) in all the stages of the agricultural project and to analyze the dialogue quality between the farmer and the outsider.

2.7.2 Community Participation Theory

The study adopted the community participation theory pioneered by (Arnstein, 1969) explaining that varying participation levels and citizen regulator. These are consultations, genuine participation and management of citizens. The inclusion of communities is applied in different situations though not always appropriately. According to Michener (1998) participation is perceived as a panacea. On the other hand, Chamala (1995) is of the opinion that community participation is the core and key consideration

and hallmark of successful development projects globally. Further, Michener (1998) points out the concern of community participation and its use in the project and academic document without respect to the realities of implementation Rural development agencies have witnessed the importance of ensuring participation in development strategies. The levels and stages of participation determine the level of achievement of the agricultural projects. Arnstein (1969) opined that the seven-step ladder of participatory development is essential in development through assessing the achievement of goals and objectives. The first four levels (passive participation; participation on information giving; participation by consultations and participation by material incentives) on the ladder can be viewed as the means for participation by community members while the remaining three (functional participation; interactive participation and self-mobilization) can be viewed as the end of community participation. Macfarlane (1993) conceptualizes these forms of participation and categorizes them as weak and strong participation. In this regard, poor participation involves consultation and informing and strong participation entails regulation and participation based on the successful delivery of the development projects. (Skinner, 1995) argues that the disillusionment among communities' interests is often expressed by information giving and consultation rather than information sharing which create interactive platforms among the development stakeholders. According to Arnstein (1969) the participation level is limited to having been informed of the decisions made by key practitioners of development which means passive participation or non-participation. The application of participatory approaches focuses on the appreciation of diversities and social dynamics cutting across gender, sex, age, disability, power, ethnicity, and social status.

From the assertions of this theory, it is expected that people are held accountable for themselves and therefore, should be involved actively in decision making and projects' implementation by the development facilitators across the globe. The entrusted and independent regulation of resources and ownership are the indicators of sustenance of community projects thus the relevance of this theory in this study. Rationally, the levels of participation are key indicators of a continuum rather than a linear series of phases. The Arnstein's ladder means that more control is better placed in terms of development than less.

Participation is viewed as a path to empowerment of communities. Burns, Hambleton & Hogget (1994) modifies Arnstein's ladder to the ladder of citizen power where choice was seen as a means to power. The approach encourages people to be responsible and be active in development initiatives mostly in decision-making processes. The emphasis of citizen participation major on the fact that local involvement in interaction, consultation and decision-making informs credible choices towards development.

Community participation theory holds the proposition that maximization of stakeholder's responsibility in the development initiative leads to increased performance (Freeman, 1984). So far limited empirical data is showing the interrelation of stakeholder's theory to improved performance. Mwaura and Ngugi (2014) on their study on the aspects influencing performance of community-based organizations projects in Kisii county, Kenya, suggest that since the members of a community are the active stakeholders in the communal projects, thus, it's of the great importance of their inclusion in projects design, implementation, monitoring, and evaluation. Community participation

theory holds the assertion that each legitimate individual involved in the activities of development within the firm either directly or indirectly does this in order to enjoy benefits and the priority of the stakeholders' interests are not self-evident as posited by Donaldson and Preston, (1995).

Community participation theory portrays credibility to both internal and external beneficiaries, managers, employees' financiers, the government, community-based organizations, and non-governmental organizations. The participation of the community enhances cohesion among the social communities as they take part in partnership with each other and organizations. The inclusion promotes chances for empowerment and to improve the wealth of the community thus giving the people opportunities for growth. Mwaura and Ngugi (2014) believe that for sustainable development, community beneficiaries must volunteer and participate actively in projects from the design to the impact assessment. The theory also asserts that there are interrelations between the project's goal and benefits accrued from the development programs. Local institutions and development practitioners must, therefore, ensure that community members participate in decision making, training and execution of the development programs. This theory helps in the providing an understanding of the importance of the involvement of communities to ensure successful implementation of projects within a community. Community participation theory can be used to provide agricultural solutions to communities in a sustainable manner. This will eliminate the challenges food security societies are facing not only in Kenya but also globally.

2.8 Conceptual Framework

The conceptual framework shown in figure 2.1 below indicates the relationship between the dependent variable, which is sustainable agriculture, and the independent variable which is participatory communication. The relationship between the independent and dependent variable is influenced by intervening socio-economic and political factors within the society. When there is full participation of community members in various agricultural projects tailored according to their needs, there is a high chance that such projects will be implemented and delivered in a sustainable manner.

Communication and participation are major pillars of effective development (Thomas & Mefalopulos, 2009). The mismatches of low participation and communication have in the past caused failures of development programs globally (Age et al, 2012). Most agricultural development projects have less impact to farmers in the improvement of livelihoods due to the program not being targeted because information is inaccurate, farmers have poor understanding due to language, communication medium, and language style mismatch. Lack of farmers' communication and interaction in the development of decision making has led to helpless farmers highlighted by high dependency on food imports and relief food (FAO, 1995).

The study used a conceptual framework on the basis of data collection and analysis by assessing the levels of participatory communication and the utilization of the agricultural information by the development stakeholders.

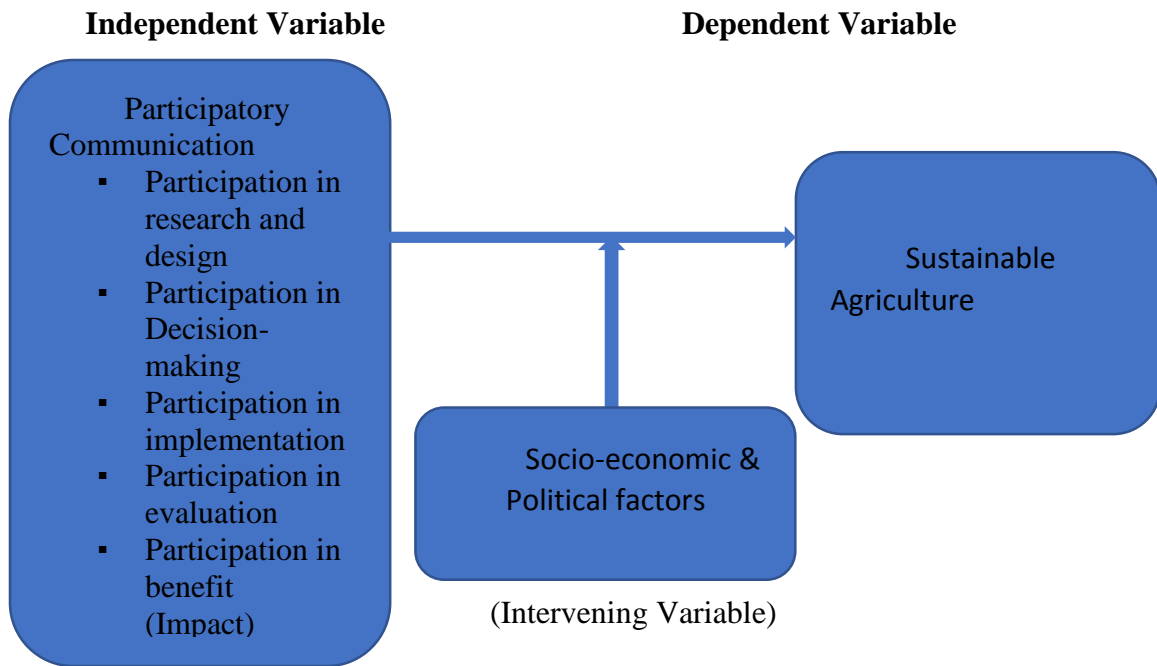


Figure 2. 1 Conceptual Framework

2.9 Summary of Literature

Community participation in the modern world is not a passive activity but an active activity from where agricultural development projects is managed and owned through the involvement of local people in each and every phase of the project. This approach gives farmers a sense of ownership since they witness that their contributions are appreciated throughout the project.

An overview understanding of participatory communication and how it influences sustainable agricultural development have been offered. The literature is basically on the inclusion of stakeholders in development initiatives through a communicative approach. The perspective opens into the main focus on the levels of participatory communication and the benefits accrued to participation in the agricultural sector.

According to Coetzee (2001) assessment of the failures towards the failure of development projects has been traced to the lack of inclusion of the people throughout the planning and the implementation of projects' development. Through the focus on participatory communication, the project will open up the importance of inclusion in agricultural project design, implementation approach, capacity building, and evaluation procedures. To offer the basis of the comprehension of this study, links will have generated between the independent and dependent variables thus revolving around participatory communication that have been conducted in various parts across the world. The chapter has as well highlighted the theoretical framework as a guide for the study and a conceptual framework to elaborate more on the variable's relationship.

2.10 The Research Gap

Most authors view failure of sustainability of agricultural projects ascribed to other factors apart from community inclusion and its influence on participatory communication. Community participation is very crucial in ensuring the success of sustainable projects. Following the empirical evidence, there is underlying motivation as well as underlined factors that enhance participatory communication and community participation in development. However, there is not much knowledge on the aspects, levels, and degree of participation in sustainable agricultural development projects especially in the constituency context in Kenya, a gap that informs the problem statement and necessitated the need for this study. The study was, therefore, designed to outline and examine the aspects degree and levels of community participation and its influence on participatory communication in sustainable agriculture.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Overview

Chapter three covers the methodology of the study. The methodology of a research is the process followed in data collection and analyzing the gathered data using different approaches to answer the questions of the research (Creswell, 2014). Research methodology is the systematic approach employed in addressing the problem of the research. It is the science of studying the scientific knowledge of conducting research. According to Kothari (2004) research methodology is the approach employed in coming up with an outcome to a specific problem that is known as the research problem. Therefore, this chapter also illustrates the research design, method of data collection, tools used in the collecting data and the sampling techniques to be used to obtain a sample for the research. The researcher utilized mixed-methods research design, which is both qualitative and quantitative research.

3.1 Research Design

According to Creswell (2014) opines that research designs are a form of inquiry of quantitative, qualitative or mixed techniques nature each of which category provides specific direction for research. Densin and Lincoln (2011) as cited by Creswell (2014), refer to research design as the strategy researchers use to carry out inquiry. According to Becker, Bryman and Ferguson (2012) a research strategy relates to the criteria that are employed when evaluating social research. The researcher used a mixed-methods research design. The study integrated quantitative and qualitative research methods in order to have a complete utilization of data.

3.2 Research Site

The location of the study was in Karai Ward that covers a total earth area of approximately 27.60 sq.km and has a total population of 20,420 (KNBS, 2018). The determination of the location of the research was purposive, three locations in the Ward namely; Karai, Gikambura and Gitiba. Karai Ward spreads across zones that suffer perennial food shortages, poverty and degradation due to shifting agriculture mostly during the dry spells. The impact of these challenges is felt by the residents the majority of whom are farmers. These farmers practice agriculture as the main activity for food provision to their families, and commercial purposes as the main economic activity. There have been agricultural projects implemented in these locations facilitated by different agricultural agencies such as the National Irrigation Board and Kikuyu Constituency CDF, which contributes to the major reason for selection of this area of study. Some of the projects designed and implemented are; Poultry farming designed and implemented by Community Driven Development Committee (CDDC), Potato and Milk farming designed and implemented by the National Agriculture Rural Inclusive Growth Project (NARIGP). Collection of data was limited to farmers of the three locations.



Figure 3. 1 Map of Karai Ward

Source: Google Maps (2020)

3.3 Research Approach

The study employed the use of a convergent parallel mixed research approach. This approach involves that the researcher concurrently uses qualitative and quantitative elements while conducting the research, weighing both techniques equally, analyzing the two elements independently and interpreting the findings together as was espoused by Kothari (2004).

This approach according Becker et al. (2012) provides logic and practical alternatives. Thus, the researcher by using mixed methods was able to give a logic assessment on participatory communication in sustainable agricultural projects. According to Creswell (2014) the researcher merges qualitative and quantitative data to offer a comprehensive assessment of the problem of the research. Data was gathered at a

relative similar time and combined in the interpretation of the general results with any inconsistencies being either explained or further probed.

3.4 Population, Sampling procedure and Data collection

3.4.1 Target Population

According to Mugenda (2003) a population is a set of objects, cases or individuals with common observable attributes. A target population is all the items in a field of inquiry that share certain similar features (Kothari 2004). The total population is 20,420. The researcher obtained a list of farmers in the three locations from agricultural offices in Kikuyu constituency.

3.4.2 Sampling Technique and Sample Size

The study adopted probability sampling in the selection of the study sample. This ensured that all members of the population had equal chances of being selected. Karai Ward is divided into three locations; Karai, Gikambura, and Gitiba. These locations were placed in three clusters from which a simple random sampling technique was employed in the identification of participants from the three locations from the list of farmers provided by the Agricultural offices in Kikuyu Constituency. The 100 respondents came from three main clusters. The researcher used purposive sampling to select key informants proportionally distributed across the three locations. The key informants were agricultural officers in the area. The 9 research participants came from the three locations.

The researcher adopted the statistical formula by Yamane (1967) in choosing the respondents. The formula was employed in obtaining a representative sample from the

population that was more than 1000. The study settled on a sample size of 100 with a 95% confidence level and a 5% plus or minus margin of error.

The selection formula is;

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

Where n = the required sample size

N = Total population

E= accuracy level required Standard error= 10%

N = 15,602

$1+20,420(0.1)^2$

= 20,420

1+204.20

=20,420

205.20

= 100

Table 3. 1 Sample Size

Location	Population	Proportion	Sample
Gikambura	7,739	0.379	38
Karai	7,657	0.375	38
Gitiba	5,024	0.246	24
Total	20,420		100

3.5 Data Collection

Primary sources were employed in the collection of data. The data was obtained using a questionnaire (Appendix 1) for the farmer-participants and interview guide (Appendix 2) for the key informants. The study employed the use of a semi-structured

questionnaire which contained both open ended and close ended questions. This implied that the research respondents were not limited in providing their responses of the research instrument. The questionnaire was organized into different sections focusing on the respondents' background information and other questions in line with the research questions. The researcher administered the questionnaire. The interview guide helped in collection of information from the key informants. The researcher also conducted the interviews. The proceedings of the interviews were audiotaped and recorded exactly. To protect the participants' privacy, the researcher assigned pseudonyms for each participant during the interview transcription but retained the name for research reference.

3.6 Pilot Testing

The questionnaires were validated using a pilot study with an appropriate sample of respondents from Karai Ward. Before the actual data collection, the questionnaires were pre-tested with ten randomly picked farmers. This exercise was used to ascertain accuracy and also test the meaningfulness of the questions. This also served to confirm structure and sequence reliability and the question's meaning. The pilot study also helped to ensure uniformity and clarity of instruments to all respondents of the study.

3.7 Reliability

Reliability according to Mugenda (2003) refers to the consistency of measure. A test is considered reliable if the results are achieved repeatedly. The Cronbach alpha test was used to test the reliability of the questionnaire

3.8 Validity

Gay (1987) described validity as the degree to which research instruments measure the intended. Further, Bond, (2003) espoused validity as the essence of any type

of assessment that is accurate and trustworthy. Validity is the foundation on which inferences and conclusions are drawn; it is the extent to which the obtained results from the data analysis represent the phenomenon understanding. In addition, Becker *et al.*, (2012) is of the opinion that validity measures whether a research instrument measures what it is intended to measure. Therefore, validity is the meaningfulness and accuracy of inferences grounded on the study results. To measure internal validity, the study variables were effectively analyzed to ensure appropriate indicators were related with each of the study variables and that the necessary data was gathered. With regards to external validity, representative and appropriate samples were chosen for the research, providing assurance that the study findings could be generalized. The questionnaires were subjected to review by the supervisor.

3.9 Data Analysis Techniques and Presentation

Data processing refers to steps taken to ensure it is possible to analyze data and these include editing, coding, classification, and tabulation. On the other hand, data analysis is calculating specific measures while looking out for relationship patterns among data-groups (Kothari, 2004).

To facilitate easy analysis, the questionnaire items were coded with regards to each study variable to minimize the margin of error and improve accuracy. For this study, quantitative data was analyzed using descriptive statistics. These statistics included percentages and frequencies. The analysis was done using the Statistical Package for Social Science (SPSS) program. Content analysis was used to analyze qualitative data, which entailed grouping the data into emerging themes based on the variables of the study. The findings were presented in prose form.

3.10 Ethical considerations

According to Silverman (2000) researchers need to be mindful while conducting research, they are involving themselves in the private space of the respondents. Hence, a number of ethical issues emerge that must be addressed during and after the research is carried out. Hammersley and Atkinson (1995) discuss ethical issues under five categories which are: “privacy, informed consent, exploitation, harm and future research consequences.” Having considered these ethical issues, names of all the farmer-participants for purposes of this research were not disclosed. Individuals were not coerced by anyone to participate in the research; the researcher worked only with those who were willing.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Overview

Chapter four covered the study results. These results seek to address the overall objective of the research, which was to determine the application of participatory communication in agricultural projects in Karai Ward, Kikuyu Sub-County. This chapter comprises three sections. Section one covers the questionnaire and interview guide response rate. The second section discusses the reliability and validity of the questionnaire. Next, the sample population is categorized by a summary of descriptive statistics so as to be familiar with the final respondents' survey. Once the background information of the respondents has been established, both quantitative and qualitative results are reported in response to the research objectives. This is in turn followed by a discussion of the relation between the findings and existing literature.

4.2 Response Rate

To assess whether the data obtained was representative of the sample of the study, the researcher collected the response rate of the study. According to Kothari (2004) a response rate implies the rate of participants to offer their responses to the research instruments in comparison to the number of respondents that are eligible. Table 4.1 illustrates the response rate of the study.

Table 4. 1 Response Rate

Research Instrument	Eligible Participants	No. of Participants who Completed	Response Rate (%)
Questionnaire	100	94	94.00
Interview Guide	9	9	100.00
Overall	109	103	94.50

Of the 100 questionnaires, 94 were completed giving a response rate of 94%. All the 9 key informants targeted in the study were also interviewed, thus giving a 100% response rate to the interview guide. Overall, the survey exercise produced a response rate of 94.5% to the two research instruments. According to Becker et al. (2012) satisfactory statistical results are reflected by a response rate above 50%; while a good enough result is reflected by a 60% rate and a 70% rate reflects excellent response. Thus, the study concluded that the response of the study was more than adequate.

4.3 Reliability Test Results

Prior to embarking on the meaningful analysis of the data collected, it was important to ensure that the scales used in measuring the study variables were highly reliable. This was accomplished by computing the internal consistency reliabilities (Cronbach alpha) of the scales. The scales adopted in the study sought to measure knowledge of participatory communication, application of participatory communication, factors influencing participatory communication in sustainable agricultural development and sustainable agriculture. The results of the reliability tests for the scales are reported in Table 4.2.

Table 4. 2 Reliability Statistics

Variable	Cronbach's Alpha	No. of Items
Knowledge of Participatory Communication	0.731	6
Application of Participatory Communication	0.743	26
Factors Influencing Participatory Communication	0.719	6
Sustainable Agriculture	0.775	6

From Table 4.2, the Cronbach's alpha of the study ranged 0.719 to 0.775.

Creswell (2014) espoused that reliability is reflected if the alpha values are greater than

0.6. Thus, the scales for knowledge of participatory communication, application of participatory communication, factors influencing participatory communication and sustainable agriculture signify an overall reliable research instrument.

4.4. Validity Test Results

In assessing the questionnaire correctness, content validity was adopted. The researcher consulted three supervisors from the University of Nairobi on the appropriateness of the questionnaire. The experts evaluated the questionnaire items relevance and responded to the objectives of the study. The feedback offered by the experts held the opinion that the research items were valid.

4.5 Background Information

This section covers the demographic profiles of the study respondents. The background information solicited from the respondents included gender, age, occupation and length of residency in the study area. The findings were summarized using percentages and frequencies.

4.5.1 Gender

The study sought to investigate the composition of the sample by gender. Accordingly, the study respondents were requested to reveal their gender. The participants' responses are exhibited in Table 4.3.

Table 4. 3 Distribution of Respondents by Gender

Gender	Frequency	Percent (%)
Male	48	51.06
Female	46	48.94
Total	94	100.00

Forty-eight men and 46 women comprised the sample, or 51.06% men and 48.94% women. This shows that there were no striking gender differences among participants to introduce gender bias in the findings generated in this study.

4.5.2 Age

The study further sought to investigate the composition of the sample by age. Accordingly, the study respondents were requested to reveal the age-bracket in which they belonged. The participants' responses are exhibited in Table 4.4.

Table 4. 4 Distribution of Respondents by Age

Age (Years)	Frequency	Percent (%)
18-30	24	25.53
31-40	35	37.23
41-50	17	18.09
51-60	11	11.70
Above 60	7	7.45
Total	94	100.00

Table 4.4 shows that a majority of the study respondents were aged between 31 and 40 years (37.23%). This category of respondents was followed by those aged between 18 and 30 years who formed 25.53% of the sample. It is also apparent that respondents aged above 60 years formed the least proportion of the sample (7.45%). Overall, these results demonstrate that the sample consisted of age-diverse respondents allowing a better mix of perspectives to the study.

4.5.3 Level of Education

The respondents were asked to reveal their highest education level achieved with regards to formal education. The responses were summarized using frequencies and percentages. The responses of the respondents are illustrated in Table 4.5.

Table 4. 5 Distribution of Respondents by Level of Education

Age (Years)	Frequency	Percent (%)
Primary Certificate	16	17.02
High School Certificate	44	46.81
Diploma	17	18.09
Bachelor’s Degree	11	11.70
Master’s Degree	4	4.26
PhD	2	2.13
Total	94	100.00

Table 4.5 reveals that the level of education of the majority of the respondents was high. In particular, 46.81% of the respondents revealed that they had acquired a high school certificate while only 17.02% reported to have acquired a primary level of education. The remaining group of 36.18% had attained a post-secondary qualification. Hence, from the findings, it was clear that all of the respondents had acquired a reasonable level of education to participate in the study and offer informed responses.

4.5.4 Occupation

The study sought to determine the nature of occupation of the respondents. In this regard, four categories were considered; unemployment, self-employment, formal employment, and both formal and self-employment. Table 4.6 shows the distribution of the respondents by occupation.

Table 4. 6 Distribution of Respondents by Occupation

Occupation	Frequency	Percent (%)
Unemployed	27	28.72
Self-employed	35	37.23
Formally Employed	21	22.34
Both Formally and Self-employed	11	11.70
Total	94	100.00

Table 4.6 indicates that 28.72% of the respondents were unemployed. This compares to 71.28% of participants who were in some form of employment. For those in employment, the majority was self-employed (37.23%), followed by formally employed individuals (22.34%) and those who were both (11.7%).

4.5.5 Length of Residency

Further, the study respondents were requested to offer information on the years they had stayed in the study area. Frequency counts were used to summarize the responses to this question. The actual responses of the respondents were displayed on Table 4.7

Table 4. 7 Distribution of Respondents by Length of Residency

Years of Residence	Frequency	Percent (%)
Less than 1 year	11	11.70
1 to 5 years	24	25.53
Over 5 years	59	62.77
Total	94	100.00

From Table 4.7, it was clear that the majority of the research respondents had lived in the study area for more than 5 years (62.77%). Closely following this group were individuals who had resided in the region for 1 to 5 years (25.53%). Only a few of the respondents had resided in the area for less than a year (11.7%). This indicates that the majority of the study respondents had resided in the region under study for a long period, sufficient to offer valid responses to the research questions concerning the subject of this study.

4.6 Farmers’ Knowledge of Participatory Communication in Sustainable Agricultural Projects

The first study objective sought to investigate the farmers’ understanding of participatory communication in sustainable projects in Karai Ward, Kikuyu Sub-County. To this end, the respondents were first asked: “Are you aware of any agricultural projects currently being implemented in Karai Ward?” All the respondents reported that they were knowledgeable of an agricultural project being implemented in the area. The participants were requested to give their opinion to a series of statements descriptive of their understanding of participatory communication in projects. The participants’ responses were weighed upon a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The responses were analyzed using frequencies and percentages as shown in Table 4.8.

Table 4. 8 Farmers’ Knowledge of Participatory Communication

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am a stakeholder in the agricultural projects because the projects affect me	7 (7.45%)	4 (4.26%)	0 (0.00%)	47 (50.00%)	36 (38.30%)
As a farmer in the ward, I should be given a chance to express my views on what I think concerning agriculture in the area	2 (2.13%)	3 (3.19%)	0 (0.00%)	58 (61.70%)	31 (32.98%)
Farmers in the ward should be involved in the decision-making processes of the agricultural projects	2 (2.13%)	0 (0.00%)	7 (7.45%)	49 (52.13%)	36 (38.30%)
Farmers should contribute their resources (capital, labor and land) to the execution of the projects	4 (4.26%)	5 (5.32%)	4 (4.26%)	46 (48.94%)	35 (37.23%)
Farmers in the ward should be informed about how the agricultural projects are performing	3 (3.19%)	3 (3.19%)	3 (3.19%)	49 (52.13%)	36 (38.30%)

The results show that a majority of respondents expressed agreement with the statement, “As a farmer in the ward, I should be given a chance to express my views on what I think concerning agriculture in the area.” In particular, 61.70% of the respondents agreed with the statement while 32.98% strongly agreed with it. The respondents also expressed a similar level of agreement with the statements, “Farmers in the ward should be involved in the decision-making processes of the agricultural projects” and “Farmers in the ward should be informed about how the agricultural projects are performing.” For each of these statements, 52.13% said they agreed with them, with 38.3% saying they did so strongly. This shows that farmers understand that participatory communication requires collective decision-making by all the stakeholders of agricultural projects in the region. This also has the implication that the farmers understand that transparency in all the activities involving the agricultural projects is a key element of participatory communication.

4.7 Application of Participatory Communication

The study sought to establish how participatory communication is applied in regards to sustainable agricultural projects in Karai Ward, Kikuyu Sub-county. Participatory communication was operationalized into four facets including; research and design, decision-making, implementation, evaluation and impact. This section discusses how each of these facets was manifested.

4.7.1 Research

The study endeavored to examine how farmers are involved in the research and design of agricultural projects that are implemented in the study area. To this end, five descriptive statements on research and design activities were asked on a 5-point Likert

scale ranging from 1 (strongly disagree) to 5 (strongly agree). The respondents were asked to indicate the extent to which the research and design activities were exemplified in the agricultural projects. The participants' responses were summarized using frequencies and percentages as shown in Table 4.9.

Table 4. 9 Research and Design of Agricultural Projects

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The agricultural projects' facilitators meet with our local and informal leaders to inform them of the proposed work, listen to their ideas and secure their support	6 (6.38%)	3 (3.19%)	5 (5.32%)	44 (46.81%)	36 (38.30%)
Farmers are usually called for meetings of various stakeholders where they are requested to describe what they see as desirable goal for agriculture in the ward	5 (5.32%)	0 (0.00%)	0 (0.0%)	51 (54.26%)	38 (40.43%)
The agricultural projects' facilitators usually carry out interviews with the farmers in the region to obtain their opinion on what they want for themselves and the area in terms of agricultural development	24 (25.53%)	5 (5.32%)	0 (0.00%)	38 (40.43%)	27 (28.72%)
The agricultural projects' facilitators normally conduct surveys to collect information on what the farmers need	27 (28.72%)	4 (4.26%)	0 (0.00%)	36 (38.30%)	27 (28.72%)
The agricultural projects' facilitators hold a series of group meetings with farmers where the farmers are given an opportunity to brainstorm ideas of how to solve agricultural problems in the ward	2 (2.13%)	4 (4.26%)	3 (3.19%)	49 (52.13%)	36 (38.30%)

As to the nature of the research and design activities, a majority of respondents expressed agreement with the statement, “Farmers are usually called for meetings of various stakeholders where they are required to describe what they see as a desirable goal for agriculture in the ward.” It is apparent that 54.26 % of the respondents said they agreed with the statement while 40.43% said they strongly agreed.

The second most approved statement was, “The agricultural projects facilitators hold a series of group meetings with farmers where the farmers are given an opportunity to brainstorm ideas of how to solve agricultural problems in the ward” with a majority of respondents (90.43%) either agreeing or strongly agreeing with it. The third most approved statement was, “The agricultural projects’ facilitators meet with our local and informal leaders to inform them of the proposed work, listen to their views and secure their support” of which 85.11% of the respondents either agreed or strongly agreed with.

The use of surveys and interviews to collect the views of the farmers were found to be the least popular. Specifically, the use of surveys as represented by the statement, “The agricultural projects’ facilitators normally conduct surveys to collect information on what the farmers need” of which only 67.02% of the respondents either agreed or strongly agreed with. Closely following this statement in ranking was the statement related to the use of interviews, “The agricultural projects’ facilitators carry out interviews with the farmers in the region to obtain their opinion on what they want for themselves and the areas in terms of agricultural development.” In particular, 40.43% of the respondents indicated they agreed that interviews were used while 28.27% strongly agreed.

These results are consistent with the findings from the interviews conducted with the key informants of the study. The interviewees gave responses that indicated that there is usually a process conducted to understand the needs of the farmers prior to implementing new projects. The following excerpts obtained from interviews with the key informants show how project identification is normally carried out:

Before rolling out any agricultural project, we have to consult with the local community first. We ask them what agricultural projects they would want to see implemented in their area. Normally, we hold public meetings where we get to listen to them. We also provide suggestions to them and hear what they have to say. Once we know what they want, we proceed on to the next stages of implementing the projects. KI04.

We have to approach the local community before starting on the project itself. We do this through public meetings with the locals where we communicate the aims of the project and assess their opinion on the selected projects. K108

There is always some form of consultation with the local communities before introducing any project. We use different methods to seek and solicit their information such as public meetings and surveys. Of course, the choice of the method depends on practical considerations such as remoteness and the size of the community involved. However, holding public meetings is the most common method due to its cost-effectiveness. K017

Overall, both the quantitative and qualitative findings indicate that participatory communication in the research stage of the projects is implemented to a large extent.

4.7.2 Project Decision-making

As part of participatory communication, the study sought to investigate how farmers in Karai Ward participate in the processes of decision making of agricultural projects in the region. Accordingly, the respondents were requested to reveal the extent of agreement and disagreement with a set of statements assessing decision-making on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Frequencies and percentages were used to analyze the responses by the respondents as shown in Table 4.10.

The results reveal that the statement, “There is presence of farmer representation in all the meetings of the project facilitators” was the most approved. A vast majority (92.55%) of the respondents either agreed or expressed strong agreement with the statement. It is also evident that the next most approved statement related to the statement “For all the agricultural projects in this ward, there exists a formal set of rules that strongly establish farmers rights in participating in project processes” of which 54.26% of the respondents generally agreed with while 34.04% expressed strong agreement. An example of the rule would be that farmers’ representatives’ organizations need to be represented effectively and involved in all consultations, meetings, expert panels, working groups or any other equivalent bodies. The third most approved item related to the selection of farmer representatives by the farmers themselves rather than the project leaders. In sum, 87.3% of the respondents either agreed or strongly agreed with this element of farmers’ participation in decision-making. The statement, “The farmers are permitted to take part in the selection of the projects’ officials” was the least approved with only 84.04% of the respondents expressing agreement with it.

Generally, these findings are in agreement with those obtained from the interviews with the key informants of the study. The interviews with the agricultural officers revealed that all the processes of agricultural projects take a participatory approach where the farmers’ views are taken into account. It emerged that during that planning juncture, objectives of the agricultural projects are set, analysis of stakeholders, constraints and opportunities conducted, and the strategies for monitoring and evaluation laid out.

Table 4. 10 Project Decision-making

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is presence of farmer representation in all the meetings of the project facilitators	2 (2.13%)	1 (1.06%)	4 (4.26%)	53 (56.38%)	34 (36.17%)
For all the agricultural projects in this ward, there exists a formal set of rules that strongly establish farmers rights in participating in project processes	4 (4.26%)	3 (3.19%)	4 (4.26%)	51 (54.26%)	32 (34.04%)
Farmers in this ward have a say in how distribution of funds is done in the agricultural projects	3 (3.19%)	4 (4.26%)	7 (7.45%)	48 (51.06%)	32 (34.04%)
In the case of specific events such as regional level events, farmer representatives are chosen by the farmers instead of other projects' facilitators	1 (1.06%)	4 (4.26%)	6 (6.38%)	49 (51.13%)	34 (36.17%)
The facilitators of the projects ensure there are translation facilities to enable effective farmers' participation in the processes of making decisions.	7 (7.45%)	5 (5.32%)	2 (2.13%)	45 (47.87%)	35 (37.23%)
The farmers are permitted to take part in the selection of the projects' officials	3 (3.19%)	5 (5.32%)	7 (7.45%)	48 (51.06%)	31 (32.98%)

The formulation of these proposals involves engagement of all the relevant stakeholders including farmers' representatives and village heads. One of the key informants noted that;

The farmers are treated as the key stakeholders in our projects. We have to listen to their views in every step of the way either through their representatives or the village heads. For instance, when we are designing our projects, the first step is to conduct a stakeholder analysis where we identify who the key stakeholders of the projects are. Here is where we acknowledge the farmers as the key stakeholders. Even during other initial stages of the

project such as coming up with the objectives, opportunities, weaknesses and threats we have to consider the farmers' opinions. KI08

Both the quantitative and qualitative findings indicate that participatory communication in the decision-making processes of the projects is implemented to a large extent.

4.7.3 Project Implementation

The study sought to examine how execution of agricultural projects is undertaken in Karai Ward. The participants were asked to offer responses on their extent of agreement and disagreement using a series of statements evaluating the aspect of project implementation. The responses were captured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The results generated from the analysis of these responses are presented in Table 4.11.

Table 4. 11 Project Implementation

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Farmers contribute their share of capital required in the implementation of the projects	6 (6.38%)	2 (2.13%)	2 (2.13%)	40 (42.55%)	44 (46.81%)
Farmers raise awareness in the community about the importance of the agricultural projects being undertaken	3 (3.19%)	5 (5.32%)	8 (8.51%)	38 (40.43%)	40 (42.55%)
Farmers are selected to assist to facilitate the smooth implementation of the agricultural projects	3 (3.19%)	6 (6.38%)	6 (6.38%)	48 (51.06%)	31 (32.98%)
Farmers are informed of significant changes in the agricultural projects	2 (2.13%)	8 (8.51%)	11 (11.7%)	40 (42.55%)	33 (35.11%)
The farmers are aware of how the suppliers and contractors for the agricultural projects are selected	0 (0.00%)	9 (9.57%)	9 (9.57%)	39 (41.49%)	37 (39.36%)

Table 4.11 shows the participation of the farmers during the project implementation phase is characterized by three key attributes. First, there is a high tendency for farmers to contribute their share of capital such as labour, facilities, funding or equipment as indicated by the high approval of the statement by a majority of respondents (89.36%). Secondly, farmers are typically selected to facilitate the smooth implementation of the agricultural projects as reflected by the approval of the statement by 85.04% of the respondents. Thirdly, in the course of implementation, farmers participate in raising awareness about the importance of the agricultural projects being undertaken as highlighted by the approval of the statement by 82.98% of the respondents.

From the interviews with the agricultural officers, it transpired that the agricultural projects are designed and implemented with the farmers being the key target. This is exemplified in the following comment by one of the interviewees:

The farmers are the primary target of these projects. As such, we have to make contributions in the design and execution of the projects. Otherwise, we would simply have projects that do not meet the needs of the people. KI05

Generally, the quantitative and qualitative findings indicate that participatory communication in execution of the projects is implemented to a large extent.

4.7.4 Project Evaluation

Using a series of statements, the participants were asked to rate their extent of agreement or disagreement assessing participation in project evaluation. The responses were based on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The findings obtained were presented in Table 4.12.

Table 4. 12 Project Evaluation

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Farmers in the ward are involved in setting monitoring systems for the agricultural projects.	27 (28.72%)	1 (1.06%)	1 (1.06%)	36 (38.30%)	29 (30.85%)
Farmers in the ward are involved in assessing the quality of project inputs, services and the timeliness of service delivery of the agricultural projects	25 (26.60%)	3 (3.19%)	7 (7.45%)	34 (36.17%)	25 (26.60%)
Farmers in the region often participate in surveys probing the progress of the agricultural projects	23 (24.47%)	8 (8.51%)	9 (9.57%)	34 (36.17%)	20 (21.28%)
Farmers in the ward are consulted to identify operational constraints of the agricultural projects	1 (1.06%)	9 (9.57%)	9 (9.57%)	43 (45.74%)	32 (34.04%)
Farmers in the ward are sought to assess the acceptability of the agricultural projects	3 (3.19%)	4 (4.27%)	1 (1.06%)	48 (51.06%)	38 (40.43%)

As seen in Table 4.12, farmers in Karai Ward are mainly involved in assessing the acceptability of the projects to the community as reflected by the high approval of the statement by an overwhelming majority of the respondents (91.49%). The results also show that the farmers are often consulted in order to identify operational constraints of the objects as indicated by the high level of agreement and strong agreement with the statement by 79.78% of the respondents. It is also apparent from the results that during the evaluation phase, farmers are allowed to participate in setting the monitoring systems of the projects (approval and strong disapproval by 69.15% and 28.72% of respondents, respectively); assessment of the quality of the project input, services and timeliness of the service delivery (approval and strong disapproval by 62.77% and 26.60% of respondents, respectively) and participation in surveys probing the progress of the projects (approval

and strong disapproval by 57.45% and 24.47% of respondents, respectively). The low ranking of this item indicates that surveys are rarely in evaluation of projects probably due to the large number of resources that need to be devoted to the exercise.

The key informants were asked about the role of the agricultural teams in overseeing participatory communication throughout the project cycle. All the interviewees agreed that it is the duty of the project teams to establish rules that provide for inclusion of all stakeholders during the course of the entire project life cycle. One of the key informants noted that:

The project's teams have a role to play. They control the direction of all the project activities. Therefore, they should be put in place measures or rules that guarantee that all stakeholders of the projects are engaged in all the processes.
K102

Overall, the quantitative and qualitative findings indicate that participatory communication in the project evaluation stage is implemented to a large extent.

4.7.5 Project Impact (Benefits)

The researcher also sought to obtain the opinions of the participants in connection to the impact of the agricultural projects implemented in Karai Ward. The respondents were asked to rate a set of statements on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Table 4.13 presents the results derived from the analysis of the participants' responses.

Table 4. 13 Project Impact

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The agricultural projects help to meet the needs of the poorest people in the community	0 (0.00%)	9 (9.57%)	12 (12.77%)	45 (47.87%)	28 (29.79%)
The agricultural projects promote resource development	0 (0.00%)	3 (3.19%)	4 (4.26%)	40 (42.55%)	47 (50.00%)

for the benefit of the people in the ward					
The agricultural projects reduce the dependence of the community on outside resources	3 (3.19%)	2 (2.13%)	11 (11.70%)	46 (48.94%)	32 (34.04%)
The agricultural projects implemented in the ward empower women equally with men in the ward	10 (10.64%)	5 (5.32%)	7 (7.45%)	40 (42.55%)	32 (34.04%)
The agricultural projects implemented in the ward result in human development of skills and knowledge	8 (8.51%)	3 (3.19%)	0 (0.00%)	44 (46.81%)	35 (41.49%)

The results show that the top benefits of these agricultural projects involve; promotion of resource development for the benefit of the people in the ward (approved by 92.55% of the respondents); human development of skills and development (approved by 88.3% of the respondents) and reduction of community dependence on outside resources (approved by 82.98% of the respondents). It is also apparent that the projects are least effective in empowerment of women in the ward as reflected by a 76.59% approval by the respondents. This shows that agricultural projects are not the most effective channel to promote women empowerment.

A number of benefits were also cited by the key informants of the study including; resource maximization, meeting of farmers' needs, reduced reliance on government for aid and improved agricultural productivity. The following comments highlight the benefits of the agricultural projects.

The projects are tailored to provide solutions to the gravest problems experienced by the farmers in the region. The projects also help to cut down too much dependence by farmers on the government's aid. KI03

We have seen improvement in the overall agricultural productivity in the area. The farmers are more satisfied now as they can easily access water and other resources. KI10

Overall, the quantitative and qualitative findings indicate that the application of participatory communication is reflected prominently in the positive benefits of the agricultural projects.

4.8 Factors Influencing Participatory Communication in Sustainable Agricultural Development

The third objective of this study endeavored to identify the key factors that affect participatory communication in sustainable agricultural development in Karai Ward. To this effect, the participants were requested to give their opinions using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The responses by the participants were exhibited in Table 4.14.

Table 4. 14 Factors Influencing Participatory Communication

Factor	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Lack of funds	3 (3.19%)	2 (2.03%)	12 (12.77%)	38 (40.43%)	39 (41.49%)
Lack of commitment by the project facilitators	6 (6.38%)	1 (1.06%)	2 (2.13%)	42 (44.68%)	43 (45.74%)
Poor leadership of the projects	0 (0.00%)	5 (5.32%)	9 (9.57%)	43 (45.74%)	37 (39.36%)
Lack of awareness of existing agricultural projects	21 (22.34%)	6 (6.38%)	8 (8.51%)	30 (31.91%)	29 (30.85%)
Poor outcomes of the agricultural projects	7 (7.45%)	4 (4.26%)	0 (0.00%)	44 (46.81%)	39 (41.49%)
Personal reasons	15 (15.96%)	5 (5.32%)	3 (3.19%)	36 (38.30%)	35 (37.23%)

Table 4.14 indicates that the main factor affecting participatory communication in sustainable agricultural development is the lack of commitment by the project facilitators. A vast majority of the respondents (90.42%) either agreed or strongly agreed that this factor was influential in participatory communication. The next important factor relates to poor leadership of the projects as reflected by an 85.1% approval rating by the respondents. The third most crucial factor is lack of funds, which was approved by 81.83% of the respondents. Personal reasons were cited as the least critical factor (approved by 75.53% of the respondents). For the agricultural projects to realize better partnership with the local community, these factors should be examined to improve farmers' involvement and engagement in the projects' processes and initiatives.

These results are also consistent with the set of factors identified by the key informants of the study. The following excerpts obtained from interviews with the key informants illustrate the barriers;

Some of the farmers and farmer representatives may not have enough money for travelling in order to attend all stakeholders' meetings. In such a case, you find that efforts to include everyone in decision making are compromised. K1 07
Allegations of corruption in some projects lead to some individuals losing interest in attending the project meetings. K106

Sometimes the farmers become aware of ongoing projects when it is too late to Consider their opinion. K101

4.9 Sustainable Agriculture

The study further sought to investigate the sustainability of agriculture in Karai Ward. The researcher presented the participants with a set of statements based on the participants were asked to give their response to a series of statements on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The results derived from analysis of these responses are shown in Table 4.15.

Table 4. 15 Sustainable Agriculture

Factor	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The local farmers utilize their farming land with diverse crop rotations	6 (6.38%)	2 (2.13%)	12 (12.77%)	35 (37.23%)	39 (41.49%)
Farmers do not have to supplement their income because the profits from farming are sustainable	17 (18.09%)	4 (4.26%)	0 (0.00%)	30 (31.91%)	43 (45.74%)
The local farmers have skills on value addition technologies	6 (6.38%)	8 (8.51%)	4 (4.26%)	37 (39.36%)	39 (41.49%)
Waste generated in farms is used as compost manure	9 (9.57%)	3 (3.19%)	2 (2.13%)	39 (41.49%)	41 (43.62%)
The local farmers prefer to use organic fertilizers and pesticides	21 (22.34%)	7 (7.45%)	6 (6.38%)	30 (31.91%)	30 (31.91%)
The local farmers practice rain-fed agriculture and do not depend on underground or surface water extraction	0 (0.00%)	6 (6.38%)	3 (3.19%)	40 (42.55%)	45 (47.87%)

Table 4.15 shows that sustainability of agriculture in the region is highly pronounced in terms of; reliance on rain-fed agriculture (approved by 90.42% of the respondents); utilization of compost manure (approved by 85.11% of the respondents) and diversity of crop rotations (approved by 78.72% of the respondents). The results reveal that sustainability was least pronounced in connection to the use of organic fertilizers and pesticides (approved by 63.82% of the respondents. This shows that Karai Ward needs more agricultural projects devoted to promoting the use of organic fertilizers and pesticides and as such participatory communication should be strengthened in such projects.

4.10 Discussion

This study examined the application of participatory communication in agricultural projects in Karai Ward, Kikuyu Sub-county. In particular, the study shed light on the farmers' understanding of participatory communication in sustainable agricultural projects in the region; the different ways in which participatory communication is applied in different cycles of sustainable agricultural programs and projects in the region and factors that affect the application of the participatory communication methods. In addressing these objectives, this research drew from the view of various stakeholders including farmers and agricultural officers in the study area.

With respect to the first research objective, it was found that farmers are aware of participatory communication in sustainability of agricultural projects in the area. The findings also revealed that the sustainable agricultural project teams should allow them to; express their interests in matters pertaining to agriculture; take part in decision-making processes of the projects and be informed about the performance of the projects. This finding is in line with Mwaura et al. (2014) who noted that for sustainable development, community beneficiaries must voluntarily and actively participate in the projects from the design to impact assessment.

In regards to the second objective, it was found that the agricultural projects are not designed to be self-contained programs of any agency but depend upon the contributions and cooperation of the community members. The quantitative findings revealed that during the research and design stage, farmers are usually called for meetings of various stakeholders where they are asked to describe goals for agriculture in the ward. Similar findings were obtained from the interview data where it was established that

project officials usually engage the beneficiaries through public meetings that are intended to serve as a forum for discussing problems, identifying needs and considering proposals for meeting them.

Farmer's active participation was also found to exist in the projects' decision-making processes. The quantitative findings showed that the projects are characterized by presence of farmer representation in all the meetings. Similar findings emerged from interviews with the agricultural officers where it was noted that farmers are treated as key stakeholders of the projects and thus are involved in the setting of objectives, identification of constraints and opportunities of the projects. The findings revealed that farmers in the ward also take part in the project implementation phase. The quantitative findings showed that this form of participation is usually manifested through contribution of their share of capital such as labor, facilities, funding or equipment. From the interviews with agricultural firms, it was observed that by the virtue of the farmers being the target of the projects meant they participated during the implementation process.

Another stage that was considered was the project evaluation. The quantitative findings confirmed that farmers in Karai Ward participate in this phase by getting feedback on the acceptability of the projects to the community. The interviewees also emphasized that the projects are based on guidelines that provide for participation of the farmers in the entire life cycle of the projects. The study also sought to examine how the agricultural projects benefit the farmers. The quantitative findings revealed that the projects promote resource development to a large extent for the benefit of all the people in the ward. The qualitative findings showed that the projects are important in resource

maximization, fulfilling the farmers' needs, reducing overdependence on government aid and improved agricultural productivity.

It is apparent that participatory communication is practiced in agricultural projects implemented in Karai Ward and has positive impacts to the farmers such as resource development and improved agricultural productivity. Therefore, the finding supports the theory of communicative action that claims participatory communication should be implemented at the research, design, implementation and evaluation stages of a project. This finding supports the community participation theory, which predicts that communication participation helps to improve the performance of communal projects. These findings also reflect the views of Reid (2002) and Yang et al. (2011) who reiterated the importance of public participation in project design, implementation and monitoring.

As for the third objective, both the quantitative and qualitative findings revealed that the three critical constraints to participatory communication in agricultural projects in Karai Ward revolve around lack of commitment by the project facilitators, poor leadership of the projects and lack of funds. Similar sentiments emerged from the interviews with the agricultural officers. Collectively, these findings tie well with Atiti (2006) who acknowledged effective leadership as a key barrier in community participation and Wanayama (2001) who identified lack of sufficient resources and corrupt leadership.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Overview

This chapter covers a summary of the key findings of the study and the conclusions drawn. Further, the study's implications and limitations are discussed. Lastly, the study suggests the need for further research.

5.2 Summary of Findings

The purpose of the study was to analyze the application of participatory communication in agricultural projects in Karai Ward, Kikuyu Sub-county. The purpose of the research was used to develop three specific objectives. The first study objective sought to examine farmers' understanding of participatory communication in sustainable agricultural projects in the region. Assessing how participatory communication is applied in different phases of the agricultural projects formed the second objective. Finally, the third objective endeavored to identify factors influencing the application of participatory communication in the agricultural projects.

In regards to the first objective, the findings revealed that participatory communication is not an elusive concept to farmers in Karai Ward. Based on the different obtained responses, it was revealed that majority of the members of the community comprehend the meaning of participatory communication is, in the sense that they should be given a chance to express their views on what they think concerning agriculture in the area. The findings further revealed that the farmers were knowledgeable about agricultural projects being implemented in the area and that there should be transparency in all the projects' activities.

As pertains to the second objective, it was established that farmers in Karai Ward are usually involved in all the activities of the agricultural projects implemented in the area. The farmers are involved in the research and design phase where their interests and views are sought. The quantitative findings revealed that during the research and design stage, farmers are usually called for meetings where they are asked to describe goals for agriculture in the ward. Similarly, the interview findings showed that project officials usually engage the beneficiaries through public meetings.

It was also found that the farmers are also allowed to participate in decision-making processes of the projects by being allowed to participate in all the projects' meetings. The quantitative findings revealed that the farmers are allowed to participate in all the meetings convened by the project officials. In the same light, findings from the interviews showed that farmers are viewed as key stakeholders of the projects and hence take part in goal setting and identification of strengths, weaknesses and opportunities of the projects.

During project execution, the farmers participate by contributing their share of capital. The qualitative findings revealed that the virtue of the farmers being the target of the projects meant they participated during the implementation process. Both the quantitative and qualitative findings also revealed that the farmers are also allowed to play an oversight role by providing feedback on whether the projects are acceptable to the community members. In terms of benefits, the projects are useful in the promotion of resource development for the greater good of the people in the ward including the farmers.

With respect to the third objective, both the quantitative and qualitative findings revealed a number of factors were identified that affect participatory communication in agricultural projects in Karai Ward. The most notable included; lack of commitment by the project facilitators, poor leadership of the projects and lack of funds. Personal reasons were cited as the least critical factor.

5.3 Conclusion

- i. It was established that farmers in Karai Ward have a considerable understanding of the principles of participatory communication. This influences their aptitude to participate in agricultural projects. Therefore, rather than making agricultural projects spontaneous activities, the opinions, perceptions, feelings and views of the community need to be heard and implemented by structures of development in order to ensure sustainability of the projects.
- ii. On the basis of the study findings, it was concluded that the projects are mostly done through an extensive and unique participatory manner, which integrates principles that promote participation and inculcate project ownership. As such, the aspects of participation are included from project identification, preparation and design stages, in order to foster ownership among the beneficiaries. In other words, the projects' management structures are designed to maximize the involvement of farmers and other stakeholders at every project level through adequate representation and regular consultations.
- iii. It can also be concluded that participatory communication in agricultural projects in Karai Ward follows a 'bottom-up' approach reflected in the regular consultative forums organized by the project implementation team. Poor

governance of the team, however, stands as a primary constraint on the effectiveness of participatory communication in the region. Without commitment among the projects' team leaders, application of participatory communication will always be limited. For any significant metamorphosis to take place, support for participatory communication needs to come from the top, at least at the outset, to be enshrined in the directives of the top-down system.

5.4 Recommendations

From the above research findings, this study drew the following recommendations:

- i. For a long time, communities have been barred from acquiring information on their role in development processes. With this regard, there is a strong awareness needed on the farmers' role in ensuring participatory communication in agricultural projects. Hence, there is a necessity for the development of community-based information technological centers to exhibit, store and distribute knowledge on community participatory grounds. Development partners, NGOs, and County governments ought to strengthen awareness in the community on the local people's roles in facilitating sustainable development.
- ii. In addition, the study recommends that the project manager needs to be empowered to give the farmers an opportunity to take part in project development. Also, participatory budgeting ought to be introduced in projects with the aim of involving community members in the cycle of project development. In this essence, representatives from various social gatherings need

to receive training so that they can air out their demands and effectively contribute to the planning phase of local development.

- iii. For smooth implementation of agricultural projects in Karai Ward, it is necessary for the projects to have a sound reliable financial base. The funding should be able to cater for fostering participatory practices such as launching training programs or workshops to educate the farmers. This may aid in institutionalizing the participatory practices in the different phases of the project life cycle.
- iv. There is a need to review the structure and content of the current capacity building strategies, with a view to incorporating those appropriate strategies which are community- centered. Such strategies should separate expectations for short-term benefits as propellants for participation by local communities and instead, be geared towards inculcating ownership and responsibility as core motivating factors. So as to improve internal processes and governance of agricultural projects, it is essential to put in place a proper policy guide on competent local management tools, internal operations checks and professionalism maintenance. The policy guide needs to lead to maintaining quality standards of accounting. In addition, the policy guide ought to offer specific knowledge areas to direct continuous improvement within an organization and offer a methodology that is result oriented used in the planning, measuring, implementation and continuous improvements of the project's activities.

5.5 Suggestions for Future Research

More research focusing on the application of participatory communication in the implementation of sustainable agricultural projects needs to be carried out. Future studies could target other counties in Kenya. Such studies would provide a comprehensive picture of the application of participatory communication in agricultural projects in the country.

How much does participation in agricultural projects' activities influence individuals' attitudes, beliefs, or behaviors, and how much do personal characteristics explain decisions to participate in the projects' activities such as planning or implementation? These are difficult questions that could not be answered by the findings of this study, especially because individuals' psyches or identities may play a strong role in motivating participation in a project's activities. As such, future research should focus on this aspect. Such studies would be of immense value in informing the understanding of the cognitive and psychological underpinnings of participatory communication in projects.

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APPENDICES

Appendix I: Questionnaire

Dear Respondent,

This questionnaire seeks to collect data for assessing the application of participatory communication in the implementation of sustainable agricultural development projects in Karai Ward. You have been selected as one of the respondents as your contribution is highly valuable in this study. Kindly provide the correct information as honestly as possible. Your contribution will be highly appreciated and the information obtained will be treated with utmost confidentiality.

SECTION A: DEMOGRAPHIC INFORMATION

(Please TICK (✓) where appropriate).

1. Please indicate your gender.

- a) Male
- b) Female

2. Age

- a) 18 - 30 years
- b) 31- 40 years
- c) 41-50 years
- d) 51-60 years
- e) Above 60 years

3. Kindly indicate your highest educational qualification

- a) No qualification
- b) Primary certificate
- c) High school certificate
- d) Diploma
- e) Bachelor's degree
- f) Master's degree
- g) Post-graduate diploma
- h) PhD

4. Occupation

- a) Unemployed
- b) Self-employed
- c) Formally employed
- d) Both formally and self-employed

5. Length of Residency in Karai Ward

- a) Less than 1 year
- b) 1 to 5 years
- c) Over 5 years

6. PART B: KNOWLEDGE OF PARTICIPATORY COMMUNICATION

1. Are you aware of any agricultural projects currently being implemented in Karai Ward?

- a) Yes
- b) No

2. To what extent do these statements reflect your view in regard to the agricultural projects?

Kindly indicate your level of agreement or disagreement with each of the following statements by ticking where appropriate. The scale used runs from 1 to 5 where 1= Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree and 5=Strongly agree.

	Statement	1	2	3	4	5
a)	I am a stakeholder in the agricultural projects because the projects affect me					
b)	As a farmer in the Ward, I should be given a chance to express my views on what I think concerning agriculture in the area					
c)	Farmers in the Ward should be involved in the decision-making processes of the agricultural projects					
d)	Farmers should contribute their resources (capital, labor and land) to the execution of the projects					
e)	Farmers in the Ward should be informed about how the agricultural projects are performing					
f)	Farmers in the Ward should be able to benefit from the agricultural projects					

7. PART C: APPLICATION OF PARTICIPATORY COMMUNICATION

Kindly indicate you level of agreement or disagreement with each of the following statements by ticking where appropriate. The scale used runs from 1 to 5 where 1= Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree and 5=Strongly agree.

I. RESEARCH AND DESIGN

	Statement	1	2	3	4	5
a)	The agricultural projects' facilitators meet with our local and informal leaders to inform them of the proposed work, listen to their ideas and secure their support					
b)	Farmers are usually called for meetings of various stakeholders where they are					

	requested to describe what they see as desirable goal for agriculture in the Ward					
c)	The agricultural projects' facilitators usually carry out interviews with the farmers in the region to obtain their opinion on what they want for themselves and the area in terms of agricultural development					
d)	The agricultural projects' facilitators normally conduct surveys to collect information on what the farmers need					
e)	The agricultural projects' facilitators hold a series of group meetings with farmers where the farmers are given an opportunity to brainstorm ideas of how to solve agricultural problems in the Ward					

II. DECISION-MAKING

	Statement	1	2	3	4	5
a)	There is presence of farmer representation in all the meetings of the project facilitators					
b)	For all the agricultural projects in this Ward, there are formal rules firmly establishing the right of farmers to participate in the processes of the projects					
c)	Farmers in this Ward have a say in how distribution of funds is done in the agricultural projects					
d)	In the case of specific events such as events at the regional level, the farmer representative is selected by the farmers themselves					

	rather than the projects' facilitators					
e)	The facilitators of the projects ensure there are translation facilities to enable effective participation of farmers in all the decision-making processes					
f)	The farmers are allowed to participate in the selection of the projects' officials					

III. IMPLEMENTATION

	Statement	1	2	3	4	5
a)	Farmers contribute their share of capital required in the implementation of the projects					
b)	Farmers are selected to assist to facilitate the smooth implementation of the agricultural projects					
c)	Farmers raise awareness in the community about the importance of the agricultural projects being undertaken					
d)	Farmers are informed of significant changes in the agricultural projects					
e)	The farmers are aware of how the suppliers and contractors for the agricultural projects are selected					

IV. EVALUATION

	Statement	1	2	3	4	5
a)	Farmers in the Ward are involved in setting monitoring systems for the agricultural projects.					
b)	Farmers in the Ward are involved in assessing the quality of project inputs,					

	services and the timeliness of service delivery of the agricultural projects					
c)	Farmers in the region often participate in surveys probing the progress of the agricultural projects					
d)	Farmers in the Ward are consulted to identify operational constraints of the agricultural projects					
e)	Farmers in the Ward are sought to assess the acceptability of the agricultural projects					

V. IMPACT (BENEFITS)

	Impact (Benefits)	1	2	3	4	5
a)	The agricultural projects help to meet the needs of the poorest people in the community					
b)	The agricultural projects promote resource development for the benefit of the people in the Ward					
c)	The agricultural projects reduce the dependence of the community on outside resources					
d)	The agricultural projects implemented in the Ward empower women equally with men in the Ward					
e)	The agricultural projects implemented in the Ward result in human development of skills and knowledge					

**PART D: FACTORS INFLUENCE PARTICIPATORY COMMUNICATION
IN SUSTAINABLE AGRICULTURAL DEVELOPMENT**

To what extent do these factors listed below influence your choice to participate in the design, decision-making, implementation and monitoring of agricultural projects in Karai Ward? The scale used runs from 1 to 5 where 1=Very Small extent, 2 = Small extent, 3=Undecided, 4=Average extent and 5=Very great extent.

	Statement	1	2	3	4	5
a)	Lack of funds					
b)	Lack of commitment by the project facilitators					
c)	Poor leadership of the projects					
d)	Lack of awareness of existing agricultural projects					
e)	Poor outcomes of the agricultural projects					
f)	Personal reasons					

Others (Please specify)

.....

PART E: SUSTAINABLE AGRICULTURE

Kindly indicate your level of agreement or disagreement with each of the following statements by ticking where appropriate. The scale used runs from 1 to 5 where 1= Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree and 5=Strongly agree.

	Statement	1	2	3	4	5
a)	The local farmers utilize their farming land with diverse crop rotations					
b)	Farmers do not have to supplement their income because the profits from farming are sustainable					
c)	The local farmers have skills on value addition technologies					
d)	Waste generated in farms is used as compost manure					
e)	The local farmers prefer to use organic fertilizers and pesticides					
f)	The local farmers practice rain-fed agriculture and do not rely on the extraction of surface or underground water					

THANK YOU!

Appendix II: Interview Guide

This questionnaire seeks to gather data about the application of participatory communication and its contribution towards sustainable agricultural development. The information will be used exclusively for academic purposes.

1. How do you decide on the project that you design and implement?
2. Which procedure do you follow when designing agricultural projects?
3. What do you consider when choosing project beneficiaries?
4. Whom do you target in your agricultural projects?
5. What role do farmers play in your projects?
6. What is the level of participation of farmers in your projects?
7. Do the farmers contribute in deciding the project to be designed and implemented?
8. What channels do you use in reaching farmers?
9. Do the farmers reach you?
10. If yes, which channels do the farmers reach you through?
11. What are some of the achievements the projects have made to farmers?
12. What are the sources of agricultural information accessible to the farmers?
13. What are some of the communication barriers that you face in project processes?
14. What is the role of organizations in overseeing participatory communication throughout the project cycle?