

**NON GOVERNMENTAL ORGANIZATIONS' INTERVENTIONS  
INFLUENCING PERFORMANCE OF AGRICULTURAL  
PROJECTS IN KENYA : A CASE OF WEBUYE WEST SUB-  
COUNTY, BUNGOMA COUNTY.**

**BY**

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**AUGUST 2023**

## DECLARATION

This research proposal is my original work and has not been presented for a degree award in any other university.



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This research proposal is submitted for examination with my approval as university supervisor.



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## **DEDICATION**

I dedicate this work to the people who encouraged me whilst I pursued this study. They encouraged and reminded me that nothing worthwhile comes easy and patience is a virtue. Their positive encouragement ensured that I diligently worked and accomplished this work. I love them very much and I appreciate everything that they did.

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## **ABBREVIATIONS**

AFSG	African Smallholder Farmers Group
ASDS	Agricultural Sector Development Strategy
ASTGS	Agricultural Sector Transformation and Growth Strategy
CSA	Community Supported Agriculture
CSOs	Civil Society Organizations
EU	European Union
FAO	Food and Agriculture Organization
IFC	International Finance Corporation
IIRD	Institute of Integrated Rural Development
KNBS	Kenya National Bureau of Statistics
LWR	Lutheran World Relief
MCHN	Mother Child Health and Nutrition
NGOs	Non-Governmental Organizations
PRA	Participatory Rural Appraisal
SSA	Sub-Saharan Africa
WASH	Water Sanitation and Hygiene
WFP	World Food Program

## ABSTRACT

The purpose of this study was to examine the influence of NGO intervention approaches on the performance of agricultural projects in Bungoma county. The specific objectives of the study was to establish the influence of the various NGO interventions of funding, capacity building, market orientation and social campaigns and how these influenced the performance of agricultural projects in Bungoma county. This study was guided by the poverty caused by economic, political, and social distortions or discrimination theory and the culture of poverty theory that argues that poverty is either attributed to the individuals culture and set of belief or the social structure and distortions that hinder and prevent the poor from escaping poverty causing them to sink further into poverty. A descriptive survey research design was applied to establish and describe the association, link, and relationship between NGO's interventions and the performance of agricultural projects. This study targeted 310 small-scale farmers from Webuye West subcounty of Bungoma county and 15 project officers managers affiliated with NGO initiatives and projects. 175 respondents were drawn from the target population of small scale farmers using random sampling techniques and all were interviewed. Survey questionnaires and KIIs were the main data collection tools given that they were easier to administer. Data was cleaned and formatted, and analysis conducted using SPSS version 25 software. The results show that NGO funding interventions negatively influences the performance of agricultural project even though the influence is not significant ( $\alpha = -0.075$ , p-value  $> 0.05$ ). Capacity building initiatives by the NGOs have a positive influence ( $\alpha = 0.496$ , p-value  $< 0.05$ ), NGO market orientation interventions also shows a positive influence on the performance of agricultural projects ( $\alpha = 0.578$ , p-value  $< 0.05$ ), and NGO social campaigns has a significant positive effect on the performance of agricultural projects ( $\alpha = 0.809$ , p-value  $< 0.05$ ) with all positive effects being significant. The study concludes that NGO interventions in agricultural projects influences the performance of these projects. For all interventions, with the exception of funding interventions, the magnitude of the effects are relatively big and significant indicating that in agricultural projects, capacity building, market orientation and social campaigns play a crucial role in the projects based on their cumulative effect on the project outcomes. The study recommends that agricultural project targeting small-scale farmers in rural areas should focus on providing market based interventions, campaigns, and orientations for the farmers with emphasis on skills development and capacity building as these have a positive influence on the outcome of agricultural projects. Policies and guidelines need to be redesigned and aimed at effectively utilizing funding interventions for the benefit of the project by eliminating the negative effects. The focus of the revised policies need to be on the form of funding, the amount of funding, and the frequency of funding when designing financing interventions given their high levels of importance to the farmer within a project setting.

# CHAPTER ONE : INTRODUCTION

## 1.1. Background of the study

Non – Governmental Organizations (NGOs) interventions are designed to address varied humanitarian gaps through their numerous programmatic involvements. The NGOs, have a critical role and complement the government efforts as well as other NGOs in the rural areas with the various interventions resulting in growth in agricultural productivity, income growth, coupled with improved sustainability of livelihoods, and rural development (Matsvai, 2018). In various parts of the world, NGOs have functioned to support both local and national governments in sector-specific areas intervening in varied areas including food and emergency relief, Water, Sanitation and Hygiene (WASH) initiatives, technical initiatives, or engaging in projects that directly align with the overall government development strategies covering the most important economic, political, and social dimensions (Cook, Wright & Anderson, 2017). Without NGOs interventions, most developing world government's would be struggling to support livelihoods and development given the pre-existing fiscal deficits. In this respect, multiple interventions by NGOs across various sectors are beneficial compared to selective participation as this maximizes the complementarity of NGOs interventions and the resulting spill-over effects (Matsvai, 2018).

In most of the developing world, NGOs usually view themselves as social enterprises that are motivated towards community development based on their involvement in non-profit development work, where they play significant roles by providing market-based solutions to development problems (Lewis, Kanji & Themudo, 2020). In most parts of rural Africa and Asia, they are forced to play broad interlinked roles of implementors, catalysts, and

partners in their pursuit to carry out diversified interventions aimed at solving development problems (Lewis, 2013). In this regard, most NGO interventions offers innovative alternative approaches in the unpredictable circumstances that usually characterize where they mostly operate. In Kenya, Myanmar, Uganda, and Zambia Living Goods, an international NGO, has been characterized as using innovative context based initiatives where they move scarce health workers from the clinics encouraging them to move door to door, to provide medical check-ups for families and children offering treatment for diarrhea and malaria including offering other services. Consequently, this has resulted in reduced child mortality and reduced hospital visits among the project beneficiaries where they operate (BOND, 2015). This ability to offer alternative innovative approaches during project implementation, rely on their ability to be flexible and cost effectiveness when undertaking their activities thereby offering meaningful altruistic change in complex and varied contexts (Swidler and Watkins, 2017).

With the high proliferation of NGOs, the majority of interventions are undertaken with the aim of community development targeted at the neediest within society. The focus is enshrined in the importance of NGOs as observed from both hypothetical and pragmatic insights of development in Africa, Asia, Europe, and elsewhere where NGOs are considered central to overall development both in theory and practice (Lewis, Kanji & Themudo, 2020). In the world over, the vulnerable and neediest groups are mostly found in rural regions and compose small-scale farmers. Globally there are 570 million farms out of which ninety percent are family-owned; 83% are less than 2ha in size and are operated by small family household members who constitute about 475 million households in Asia and Africa (IFC, 2019). These farmers operate small portions of land and are only able to

generate low levels of income, and are unable to effectively use the land, use proper farm inputs, and lack access to financial resources leading to persistent low productivity, reducing incomes, and subsequent increasing levels of poverty for these farmers (Sabahelkheir and Hassan, 2015). Their farms are inefficient mostly because of the relatively high cost of operation compared with little to no profits obtained, majority of these farmers face constraints and difficulties in accessing farming knowledge, labour, markets, credit, as well as farming technology (IFC, 2019).

### **1.1.1 Performance of agricultural projects**

There are many problems that face small-scale farmers in rural areas of Sub-Saharan Africa (SSA), most of which directly distress their productivity and sustainability. For any progressive change to occur, government agencies, donors, and the scientific organizations need to come together to ensure change at the ordinary farmers and other farm workers level, who if empowered appropriately should promote agricultural transformation as the only way of improving agricultural productivity which is a key driver for development and reduction of poverty (Arora, (2017) and (Dercon & Gollin, 2014). In order to adequately reshape agriculture, livelihoods, and rural landscapes as a means of encouraging development, agricultural programmes and interventions need to be expertly designed and implemented by the relevant technical agencies in the form of short-term projects and programmes to stimulate agricultural transformation in selected areas (Atela, Tonui & Glover, 2018).

In Kenya agriculture has largely remained small-scale, rain-fed, and a poorly mechanized endeavor with little or no institutional and infrastructural support framework. Stimulating growth and development within the sector will help uplift the lives small-scale farmers in

rural regions who rely heavily on subsistence farming. The Agricultural Sector Growth and Transformation Strategy (ASGTS) 2019 – 2029 of the government of Kenya wants to transform agriculture in the country by increasing both income and agricultural output of small-scale farmers as outlined in the Kenya Vision 2030 (Government of Kenya, 2020). This builds upon the Agricultural Sector Development Strategy (ASDS) 2010–2020 that had acknowledged the need for all policies, regulatory policy reforms as well as additional strategies to be designed and implemented in specialized government agricultural projects (Republic of Kenya, 2010). However, only a small group of well-to-do and connected small-scale farmers can benefit from the opportunities that are created in this way since it is difficult for governmental organizations to become flexible enough in their programs to safeguard the interests of small-scale farmers indicating a need to involve NGOs as an essential feature for the effective implementation of the desired development strategy (Government of Kenya, 2020).

### **1.1.2 Agricultural projects in Bungoma county**

In Bungoma, agricultural farming is dominated by food crop farming involving the cultivation of maize, millet, Irish potatoes, soybean, mushrooms, bananas, assorted vegetables, tea, sweet potatoes, and sugarcane with growing interests in fish farming. Despite having large amounts of fertile land, with healthy rainfall levels and patterns, and other ecological features, agricultural productivity in the county is still hampered by subsistence farming in the region rooted in low levels of education among the farmers, lack of use of irrigation, and modernized farming methods, cultural practices of general subdivision of land resulting on agricultural activities taking place on small farming units

that limit overall yields including the collapse of agricultural extension services (Delloite, 2016).

Production, economic, and social challenges have influenced agriculture in the county: most farmers are over-reliant on rainfall that is erratic and unreliable; due to resource constraints most farmers in the county cannot adopt modern farming technologies; low levels of modern technology application and innovation also contribute to low productivity; poor farming methods and continuous cultivations have led to declining soil fertility; most parts of the county have inadequate storage and improper handling of farm produce contributing to increased losses during pre-and post-harvest stages; inadequate extension services due to a high farmer-to-staff ratio, has contributed to weakened support systems for smallholder farmers; market access and marketing infrastructure are poorly organized disadvantaging the agricultural sector in the county; and poor infrastructure and distribution networks have also reduced access to farm inputs and increase costs (MoALFC, 2021). That's why, most NGOs and other stakeholders are working in Bungoma county implementing agricultural projects whose outcomes are aimed at offering direct or indirect assistance as required to improve livelihoods.

## **1.2. Research problem**

The majority of the population in Bungoma are living below the poverty line with the county contributing 3.8% to the national poverty with a poverty rate of 4.7% and there is persistent food insecurity and malnutrition (KNBS, 2019a). In the county, 78% of the households engage in crop and livestock farming, 50% of the people living in the county earn their income directly from the agricultural sector, compared to 44% of the national population with an additional 48% of the employed labor force actively engaged in small-



scale agriculture and the county's economy is over reliant on small agricultural farming as the main source of income (KNBS, 2019b; Mwendia & Notenbaert, 2018). However, production, economic, and social challenges have influenced small-scale agriculture in the county resulting in poor yields and considerable rise in food insecurity resulting in implementation of targeted agricultural projects to help alleviate the situation to combat the increased levels of poverty and poor economic standing of the farmers, and rising food insecurity (Delloite, (2016) ; MoALFC, (2021).

The majority of the agricultural projects and programmes in the county have either been implemented by the government under the guidance of or in conjunction with donor international agencies, research institutions, and NGOs (Atela, Tonui & Glover, 2018). However, the desired results are yet to be achieved as majority of the projects experience leakages to non-targeted farmers thereby nullifying the benefits to the intended farmers leading to poor project performance based on expected outcomes (Government of Kenya, 2020). For this reason, understanding the role of NGOs as the necessary conduits for the much-needed interventions through the implementation of agricultural projects to attain the requisite agricultural transformation and consequent improvements of livelihoods in Bungoma becomes relevant due to its link to the overall government development policy (Lewis, Kanji & Themudo, 2020). Studies such as Tuchitechi and Lee (2018), Avea *et al.*(2016), Irungu and Moronge (2016), Omorede (2014), Bolarinwa and Fakoya (2011), and Basantia (2011) have focused on how NGOs influenced the performance of various agricultural projects but have overlooked how the various intervention approaches influence the performance of these projects. To this end, this study will examine how

various NGO intervention approaches influence the performance of agricultural projects in Bungoma county.

### **1.3. Objectives of the study**

The study was guided by the following objectives:

1. To establish the influence of NGO funding intervention approaches on the performance of agricultural projects for small-scale farmers in Bungoma County.
2. To assess the influence of NGO capacity building intervention approaches on performance of agricultural projects for small-scale farmers in Bungoma County.
3. To investigate the influence of NGO market orientation intervention approaches on the performance of agricultural projects for small-scale farmers in Bungoma County.
4. To examine the influence of NGO social campaign intervention approaches on the performance of agricultural projects for small-scale farmers in Bungoma County.

### **1.4. Value of the study**

This study adds to the project management body of literature by focusing on the role that NGOs intervention approaches play on the performance of agricultural projects and consequently on the socioeconomic status of small-scale farmers. This is relevant to academics, researchers, government officials, agricultural experts, donors, and various bodies as it provides new and additional information.

The study insights are important to program managers, agricultural agencies, the Kenya national NGO council, and donor agencies involved in agriculture development and programming with regards to its contribution to agricultural development policy. This

study sheds light on programming issues when it comes to agricultural projects targeting small-scale farmers as their main beneficiaries by highlighting how NGO interventions can be linked to the improved socioeconomic status of the farmers in rural regions and in so doing provide adequate insights when designing such programs.

The findings is relevant to the refining, review, and policy development of agricultural programs intended to improve rural livelihoods by providing information that will facilitate the formulation and designing of appropriate implementation measures that may result in tailor-made programs for rural small-scale farmers in Kenya.

This study paves way for further research on project intervention approaches on the performance of projects and the impact they have on their beneficiaries. The findings also provide ways and means of further examining the impacts of NGOs activities in different settings and contexts aimed at improving socioeconomic status through project activities and initiatives.

## **CHAPTER TWO : LITERATURE REVIEW**

### **2.1. Introduction**

The chapter presents a review of the literature. The review summarizes both the theoretical and empirical literature relevant to the study. This section also presents the theoretical and conceptual framework that guided and informed the study.

### **2.2. Theoretical Review**

This section presents the two main theories that guide this study. This theoretical review focusses on the poverty due to economic, political, and social distortions or discrimination theory and the culture of poverty theory and the culture of poverty theory. These two theories provide the necessary basis for examining the study variables and understanding the results of the study.

#### **2.2.1. Poverty due to economic, political, and social distortions or discrimination theory**

This theory is attributed to the works of structuralist theorists Prebisch, Celso Furtado, and Aníbal Pinto who state the poor within the society are faced with circumstances that prevent them from accessing the best opportunities available within a given social structure (Abdulai and Shirmshiry, 2004). The theory argues that poverty cannot be attributed to an individual, but to the larger societal order that limits their ability to achieve income and economic wellbeing and that the larger economic and social structures are the cause of poverty (Bradshaw, 2006).

Economic systems are aligned in a manner that the poor continue to be poor independent of how hard they might be working (Jencks, 1996). The poor are disadvantaged and with

limited access to opportunities as well as poor facilities existing among the poor that are in most cases underdeveloped or inadequate or lack the essentials resulting in low skills development by the poor (Chubb and Moe, 1996). Lack of skills by the poor therefore continues into other aspects of their lives preventing those from extremely poor backgrounds from accessing opportunities that depend on the structural alignment that keep them from accessing opportunities that require remarkably high skills development that the poor do not have access to (Tobin, 1994).

According to the theory, these distortions limit the ability of the poor to escape poverty. Further suggesting that the establishment of institutions focused on empowering the poor through various initiatives that encourage, openness, access, and innovation with the willingness to help individuals from poor backgrounds, is the best strategy to help the poor and move them from poverty making it possible for the poor to raise their wages, incomes, and standards of living (Page and Simmons, 2000). The key concepts underlined in this theory identifies concepts of poverty, underdevelopment, lack of opportunities and low skill development among the people as the major causes of poverty and under development. The theory presents arguments that poverty is a problem of society at large and entirely depends on how the society distributes the available opportunities and resources with those with access to fewer resources unable to claw their way out of poverty.

This study focused on independent variables of NGO interventions with respect to accessible funding, capacity building, market orientation, and social campaigns with respect to agricultural projects. The underlying basis of this rests on the need to redistribute resources, enhance skills development, and also increase access to markets, and other opportunities for the farmers. In so doing the various intervention approaches provide an

enabling environment in which farmers are able overcome the social distortions and overcome poverty. This theory in its elemental nature provides a good basis for comprehensively examining how the interventions of NGOs influences the performance of agricultural projects. This study presents the position that NGO interventions redistributes and reorganizes both resources and opportunities within the existing societal order and as seeks to determine if the theory holds true in the context of small scale farmers.

### **2.2.2. The culture of poverty theory**

The culture of poverty theory is attributed to the works of Oscar Lewis and argues that poverty is transmitted from one generation to another and that certain conditions of poverty will lead to the development and establishment of cultures and subcultures adapted to those conditions (Lewis, 1959). The theory argues that values held by respective communities govern how they interact within their communities and the more an individual is exposed to the community specific challenges, the more they become resistant to change their circumstances and conditions and are unlikely to take advantage of opportunities aimed at developing their lives (Ryan, 1976). This theory argues that poverty is specific and depends entirely on a person's ability and motivation for improvement. The theory stipulates that poverty perpetuated over generations can explicitly be attributed to a dysfunctional system of beliefs and set of knowledge that should be replaced by a new culture that supports and promote productivity of the poor people (Zigler and Styfco, 1996).

According to the theory, poverty in a population has a structural cause that becomes self-sufficient and self-reinforcing since behaviours and attitudes associated with poverty are developed within a culture and are then passed down through various socialization processes (Lewis, 1959). The theory suggest that even though past factors may be a cause

of poverty, individuals adapt to these new conditions and then pass them on to their subsequent generations. Therefore, adequate socialism and implementation of programs and projects that inculcate positive values and socialism functions as a means of escaping poverty by stopping advancement of retrogressive cultures (Zigler and Styfco, 1996).

This theory argues that by establishing developmental programs or any other established development models that can work within the set culture is essential in redefining beliefs and values in the community and is important towards the improvement of the groups living standards (Goldstein,2001). The theory, however, fails to acknowledge the dynamism of human beings and the possibility of change in behavior and assumes that all cultures are static and human beings are incapable of change and there is no likelihood for change or adoption of any new behaviours. From the theory the underlying assumption is that it is impossible for poor people to change their conditions and regardless of the number of interventions, poor people are less likely to change their cultural behaviours and mindsets. The key concepts in the theory identify fixed attitudes, opinions, and beliefs as the major contributors to poverty and these will forever remain static in the context of poverty alleviation interventions and projects.

This study contemplates that various NGO interventions through project implementation activities and initiatives improve the lives of the project beneficiaries. The dependent variable of this study examines the performance of agricultural projects as an outcome of the various interventions and underscores the notion that projects are only successful depending on the extent that they impact the lives of the beneficiaries and the degree to which the project meets the desired objectives. From this perspective and within the context of agricultural projects intervention approaches, this requires changes in attitudes,

behaviours, and opinions regarding overall farming practice. This stands in opposition to the fundamental tenets of the theory given that the project proponents expect and assume that project beneficiaries are not dynamic and open to change. This study, by comprehensively examining the role of NGO interventions in the performance of agricultural projects, seeks to test if the theory holds in the context of small scale farmers.

### **2.3. Performance of agricultural projects**

Agricultural projects have been known to provide employment, ensuring food security, creating wealth for farmers as well as contributing to overall development and innovation in the overall economy. However, this is characterized and diminished at the national level due to the challenges that these type of project faces and the projects are unable to achieve the expected results and fail (Irungu & Moronge, 2016). The projects are structured to provide agricultural financing in order for agricultural projects be transformative and become a catalyst for economic growth in rural areas, increasing the households incomes, poverty reduction, and have assured food security (Nin Pratt & Yu, 2014). In other cases, these projects provide and assist women to raise finance based on their ability to supply into agricultural projects given that in normal traditional sense, they are unable to access finances through their inability to own land and have collateral in which banks rely on (Rutten, 2014). They also offer advisory services to rural farmers to enable them to use their productive resources, as well as creating awareness on existing agricultural projects and increasing the demand for agricultural inputs all of which are mutually reinforcing to assist in the achievement of project objectives (Chepkurui, 2012)

In developing countries like Ghana, agricultural projects have a vital role in the lives of the beneficiaries since they provide the necessary avenues through which food security is



enhanced, foreign exchange is generated, raw materials are supplied, and employment is created contributing to poverty reduction and even supporting environmental sustainability (Landau, 2010). In Uganda, agricultural projects are aimed at poverty reduction as the government policy strictly focus on modernization of agriculture as a goal of addressing widespread poverty by ensuring use of improved agricultural technologies, improving ways and means of acquiring credit, farm inputs and increasing access to market leading to increased agricultural productivity (Ssekandi & Chen , 2010). In Kenya, small-scale farmers have also benefited from agricultural projects under the various ministries from designed project approaches in farmers are able to receive extension models and styles, farm management, and integrated agricultural rural development approaches in which enable farmers to increase their farm productivity, learn about marketing options, value addition and sources for diversified income opportunities (Irungu & Moronge, 2016).

These projects provide the vital information, regarding the changes in crop prices, the varieties in new seedlings, crop management as well as marketing, and the consequent exposure increases the ability of the farmer to optimally use their resources and work only if the projects are designed properly, implemented as required then they are most agricultural projects are likely to result in improved productivity (Hope 2011). Turchitechi and Lee (2018) in their study of the reasons why agricultural projects for small-scale farmers within Karonga and Phalombe districts of northern and southern Malawi fail to correctly deal with poverty. They rely upon data from interviews conducted with eighty two agricultural extension officers. They find that the projects fail in situations where the identified farmers are much less educated, have excessive of pre-existing poverty rates, do not participate effectively within the project, or have developed dependency syndrome and

completely depend on the project due to long term provision of aid by various projects. In addition, troubles with cashflow compromise the overall performance of the project. In their view, it is better to empower the farmers with self-help capabilities and ensure that the projects resolves all issues of funding and disbursement.

This is similar to the findings of Irungu and Moronge (2016) who while using 75 agricultural projects in Nyeri county try to understand what influences the performance of agricultural projects in Kenya. They find that stakeholder involvement in agricultural projects is positively correlated to the performance of agricultural projects. They argue that there is a higher chances of performance in projects where the managers are able to manage their costs, execute their project in time, intervene in project risks matters, and ensure that the project is within the prescribed quality. This points out that there are other intervening variables and moderating variables that influence the performance of agricultural projects.

## **2.4. Empirical studies review**

This section presents a review of the empirical studies that have been previously undertaken on the major study variables. This empirical review focused on the context of these studies, the variables, methodology and findings in order to understand the relationships between and assumptions between the independent variables.

### **2.4.1 NGO funding interventions and performance of agricultural projects**

Consistently low levels of income among small-scale farmers as well as continuously under-investment in their farms is the main reason most of them are stuck in poverty as well as the persistent gaps between their actual income and the income levels required for living sufficiently (Wegner and Zwart, 2011). To help farmers, improve their production

capabilities, attain sufficient scale, attract new trading partners, become effective enterprises as well as make them effectively cope with risks they need to have access to funding and financing (Gneiting, 2018). Nevertheless, most of the rural farmers are unable to meet the conditions outlined by financial institutions making them ineligible for loans and financing as they are mostly evaluated as high risk and lack proper guarantees to reassure their ability to repay loans (Wegner and Zwart, 2011).

Smallholder farmers have been considered by a majority of financial institutions as unappealing clients given their insufficient collateral, absence of written records, the smaller size of loans requested, and the higher transaction costs (IFC, 2019; Bronkhorst *et al.*, 2017). Formal banking and financial institutions rarely lend to small-scale farmers and most of their products are in most cases not designed for the farmers neither have they been developed, and thus small-scale farmers rarely make use of formal credit forcing them to look for alternative informal sources of funds and as such, they are faced with very high-interest rates (IFC, 2019). These farmers are faced with prolonged failure to access financing, the loans they receive have high servicing costs attached to them, they have less sustainable collateral, and with the insufficient data available on these farmers there are fewer warranted credit decisions made in their favor by most lenders (IFC, 2019; Bronkhorst *et al.*, 2017).

Lack of adequate capital is the major cause of deteriorating agricultural productivity. Bolarinwa and Fakoya, using information from 250 farmers in Ogun State, they find that non-credit beneficiaries recorded 4 times less cocoa production output compared to their credit beneficiaries with 28% of the credit beneficiaries recording mean higher incomes compared to only 10.4% of non-beneficiaries. They conclude that by accessing credit,

farmers were able to record higher socio-economic status given that accessibility of credit enabled the beneficiaries to purchase socioeconomic status items unaffordable to the non-beneficiaries. Due to receiving higher levels of income as a result of access to credit, 54.1% of the beneficiaries attained higher status compared to 10.4% of non-beneficiaries experiencing determined changes in farmer's crop production, and income levels Bolarinwa and Fakoya, (2011).

In most cases, the relationship between farmers and financial institutions is that of mistrust between the two parties (Avea *et. al.*, 2016). There is a need to rely on the involvement of the private sector and diversification of sources of funding with increased attention to non-profit organizations as sources of funding or financing of farming resources (Dave-Sen and McPake, 1993). In this sense, NGOs and development agencies would support farmers either by providing support to farmers directly or giving them support in accessing production resources that include seeds, agrochemicals, fertilizers, and machinery services which they either supply or link farmers to institutions of finance through Farmer Based Organizations (FBOs) set up by the assistance of the NGOs (Asante, Afari-Sefa and Sarpong, 2011).

All over the world, NGOs have come out as champions for social development by linking farmers to financing and credit facilities (Hassan, 2015). In Northern Ghana, NGOs operating there were either supplying seeds and fertilizers to farmers on credit requiring them to repay at a later date or post-harvest while at the same time linking other beneficiaries to financial institutions where they could access funding (Avea *et al*, 2016). In Bangladesh, for instance, NGOs have been trying to help farmers access credit at lower interest and in some cases even without collateral security (Holloway, 1998). However, the

provision of access to credit and financing is not enough without appropriate coaching and monitoring of farmers who receive these funds.

#### **2.4.2 NGO capacity building interventions and performance of agricultural projects**

The education level of the farmer and overall agricultural productivity are positively related. Farmers do need the training to enhance their performance as well as improve their competency around farming activities (Halim and Ali, 1997). At the same time, formal and informal education helps farmers become better: formal education despite lower coverage among small-scale farmers opens up the mind of the farmer to knowledge ; Informal education on the other hand gives the farmer direct training on farming methods keeping them up to date with changes in farming innovations and emerging ideas as farmers share their experience (Oduoro-Ofori *et al.*, 2014). Pudasaini, (1983) points out that education of the farmers is important as it improves how the farmer makes decisions regarding the selection of inputs and the necessary combination of inputs for better agricultural outputs.

Rural farmers have limited access to education and knowledge regarding existing alternatives in terms of technology and farming practices (Baudi, Anaman & Kwarteng, 2013). Loiruck, (2013) argues that it is essential to enhance the farmer's education on farming activities to maximize their agricultural output. Relying on fifty respondents, and using Participatory Rural Appraisal (PRA) methods, he finds that farmers in Arumeru district are faced with various problems with the biggest being lack of information regarding adequate agricultural output production, lack of quality seeds, and inability to access credit. In his conclusion, he argues that farmers need to be provided with financial and technical support and skills from the government and other development partners to reinforce their ability to increase their agricultural productivity.

In most cases, small-scale farmers are usually of little or no formal education, this makes them unable to keep written records or be able to teach themselves about improved agricultural practices, and because of this illiteracy, they tend to have imprecise ways of measuring the sizes of their farms, knowing their total crop yield or the actual cost associated with their farms among others (IFC, 2019). Interventions in capacity building enable farmers to learn how to conduct their farm activities on time consequently increasing productivity without having to increase costs. These opportunities are responsible for the improvement in the planting, weeding, application of fertilizers, harvesting, and other improved farming practices that ensure that same number of inputs produce higher quantities of output (Bronkhorst *et al.*, (2017). These capacity-building interventions also ensure enhancement of sustainable resource allocation, access, well-timed use of inputs and not only focus on the farm production side but also, delve into the coaching and mentoring of farmers to help them become better farmers and help them manage their farms to higher levels of output production as well as improving their capability to effectively use available resources and how to improve productivity (Avea *et al.*, (2016).

Mandirahwe (2016) examines how NGO intervention on capacity development influences the lives of small-scale farmers in the Mutasa district in Zimbabwe. Applying a mixed research method approach, relying heavily on qualitative data, he collects data from a sample of 38 farmers, NGO officials, traditional leaders, extension officers, and districts using structured questionnaires, KII's, observations, and FGDs. He concludes that NGOs intervention in capacity development has made an impact on the livelihoods of small-scale farmers improving their food security, improving their health standards, enabling them to

take children to school, improving the family savings, increasing their income, improving their housing building new shelters, and repairing shelters, and buying medicine (Mandirahwe, 2016).

Educating farmers helps improve the farmers' skills, enhances the farmers' ability to obtain, understand and utilize new inputs as well as upgrade their overall farm managerial ability (Oduoro-Ofori *et al.*, 2014). In Bangladesh, the Institute of IIRD (Integrated Rural Development) trained female beneficiaries by giving them basic training in broiler rearing then providing and allocating each beneficiary an initial investment loan of 10,000 Taka (Tk). To ensure quality control they chose and distributed the basic equipment, the day-old chicks and provided chick feed, giving technical support and vaccinations collecting and shipping them to Dhaka for sale upon maturity (Makita, 2009). In Ghana, capacity building within the farmers' groups provided the farmers with the skills in management training, the ability to reduce transactions costs when farmers are purchasing inputs as well as equipping the farmers with stronger bargaining power within the market and instances where these groups have thus been able to provide collateral for credit among the farmers among the soybean farmers (Avea *et. al.*, 2016).

However, NGOs do not educate farmers using capacity building alone, extension services are also used as a means of educating where they receive marketing orientation or where they are linked to markets as part of the education process. Most small-scale farmers sell their produce directly from their farms or from the roadsides near their farms given they lack physical and economic access for their crops (IFC, 2019). Their access to the markets is mostly attributed to lack of reliable information about the market, long distances between the farm and the market, as well as high transportation costs of the farm, produce to the

market (Ahmed, *et al.*, 2016). Poor infrastructure and lack of means to timely transport their produce to the market further increase their isolation from markets (IFC, 2019). Thus, better infrastructure for easy market access helps reduce transportation costs and food prices for these farmers (Minten, 1999). Based on their smaller quantities available for sale, the need for immediate payment, limited safe crop storage capacity, and the poor knowledge of quantities and prices required beyond their farms they are unable to negotiate with buyers for better prices (IFC, 2019). However, given that most rural farmers produce what they consume they tend to access the market selectively to either buy inputs, sell a selection of farm produce as well as buy other food or non-food items to sustain a desired standard of living (IFAD, 2013).

#### **2.4.3 NGO market orientation interventions and performance of agricultural projects**

Most NGOs conduct interventions aimed at ensuring the establishment of relevant mechanisms through which farmers can sell their products in some form of extension services or by scouting for markets (Avea *et. al.*, 2016). Mainly because the available no-cost extension services provided by the government extension services are normally faced with a lot of challenges. Problems of having a single extension worker assigned to a large area and having to transverse a large area to meet up with farmers, having no reliable transport to provide high-quality service to all, lack of adequate skills and capacity to meet current market demands leading to the provision of unreliable information to farmers, lacking business and group management skills and are thus unable to manage farmer groups accordingly (Nayambo, 2009).



By linking farmers from 18 poor villages in Southwest China to urban markets and consumers, the Community Supported Agriculture (CSA) project resulted in tripled farm incomes for farmers participating in the project with a considerable increase in incomes from crop production and sale due to increased market demand in Guanxi (Song, Zhang, Song and Krystyna, 2016). In Western Kenya, small scale maize farmers organized in farmers' organization groups that are collaborating with the local NGOs in a Purchase for Progress program in which World Food Program (WFP) buys produce directly from the farmers, consequently creating structures where the farmers get better prices and access to markets as well as providing secure markets thus helping farmers overcome limitations in the maize market (Skjöldevald, 2012).

Basantia, (2011) examines how NGO intervention brings about socioeconomic development of tribal farmers in the Koraput region. Collecting data from 80 NGO beneficiaries and 20 NGO employees using interview schedules and using ex-post-facto survey design, including the use of frequency counts, percentages, and rank order they conclude that NGO interventions influence the socioeconomic development of the tribal farmers. They add that after getting advice and advisory services and adopting entrepreneurship some farmers were able to increase their income and within one and a half years after participating in the NGO program, they did not have to look for work anymore and had constructed new housing changing their straw houses into asbestos (Basantia, 2011).

In the case of farmers in northern Ghana the NGOs established an aggregation company to buy soybeans directly from the farmers before negotiating and selling to processing companies, in other instances, the NGOs established a marketing company to buy soybean

from the farmers directly in the three soy farmers in the region with the support from the EU (Avea *et. al.*, 2016). In Bangladesh, an IIRD project for broiler and silk production and silk worm rearing provided market differentiation for poor and wealthier producers to avoid competition between them. The silk production beneficiaries were linked to the growing markets for silk products while among the poor poultry farmers within the same vicinity, they deliberately avoided competition from the beneficiaries with private poultry farms linking these poorer beneficiaries' production with the large Dhaka market (Makita, 2009).

In Ethiopia, it is argued that the outstanding economic growth experienced in the last decade has been mainly because of the growth in the agricultural sector. This among other reasons has been through the sustained growth in agricultural productivity and modernization as well as the large public extension structures that have extended all levels from federal to regions to kebeles majorly through the improvement of the extension agent-farmer ratio (Tamru *et al.*, 2017). One-Ace fund has been trying to increase the levels of extension agent-farmer ratio in its activities in Kenya, Uganda, and Rwanda where they operate. Evidence shows that despite focusing on the facilitation of the distribution of modern inputs than being knowledge-based, increase access to the extension systems significantly increases acceptability and use of modern inputs and new high-quality seeds by farmers of all levels (Berhane *et al.*, 2018).

#### **2.4.4 NGO social campaigns interventions and performance of agricultural projects**

Small subsistence farmers experience low yield and cannot sustain their own families and also have enough money for healthcare (Griffin-EL, *et al.*, 2014). Lack of health knowledge among farmers negatively influences their labor efficiencies as it contributes to poor health

status (Akangbe, 2015). Even though they contribute to food production, smallholder farmers are unduly at risk of under-nutrition and micronutrient deficiencies, among other health issues (OECD,2010).

In an attempt to understand how the health of the farmers influences the technical efficiency of agricultural production of maize farmers in Nigeria, Ojo *et al.*, (2018) collect data using structured interview schedules from 220 maize farmers in Osun state identified through multistage sampling procedures. Applying a stochastic frontier analysis combined with a cost of illness procedure they conclude that most farmers are prone to diverse illness episodes during the production year, attributed to stress embedded in farm operations, use of crude farm implements, poor financing, inadequate medical facilities, poor feeding, malnutrition, and lack of medical facilities. In addition, the economic cost of the illnesses is high with the highest burden on farmers with illnesses posing a major setback to their attainment of technical efficiency of the maize farmers. They recommend that extension agents and health workers as part of their core mandate should focus also on health education and illness prevention as unhealthy farmers become inefficient (Ojo *et al.*, 2018).

From this perspective, health literacy has become essential to small-scale farmers. Akangbe *et al.*, (2015) argue that farmers need to get involved in health literacy programs while examining how the health practices of small-scale farmers in Kwara state Nigeria influence their agricultural production output. Collecting data from 120 small-scale farmers, they find that poor health among the farmers or farmers who have little knowledge on health practices negatively influences agricultural productivity. They point out that small-scale farmers are likely to benefit from professional advice concerning their general health

practice and farm safety (Akangbe *et al.*, 2015). As such NGO interventions through extension workers are beneficial to the overall wellbeing of the farmer.

In various countries, NGOs have implemented projects targeting small-scale farmers, women, and children to improve their health status and increase their dietary options. In Bangladesh, for instance, the Hellen Keller International designed a program in which farmers were introduced to home gardens where they were able to produce and consume fruits and leafy vegetables rich in micronutrients to supplement their diets. In doing so they were able to improve their nutrition, reducing anemia and risk of childhood night-blindness (Helen Keller International, 2010).

The SHOUHARDO project in Bangladesh under the implementation of CARE international established complementary measures for 400,000 farming households introducing direct nutrition interventions through the introduction of home gardens and mother and child health and nutrition (MCHN) consequently reducing the prevalence of stunting by 16% among children aged 6-24 months (Smith *et al.*, 2011). Among the poor women farmers in Mali, Action Against Hunger introduced a program combining education and awareness-raising on improving food and nutrition practices including introducing composting, pedal pumps, and drip irrigation for the local farmers. In so doing, child malnutrition fell and access to vitamin-rich foods increased (ODI, 2012). In Ethiopia, Malawi, Ghana, and Tanzania, World Vision Canada implemented the MICAH (Micronutrient and Health) project that led to the reduction of children's malnutrition through diversification of food, vegetable cultivation, and raising livestock (Berti *et al.*, 2010).

Women farmers also learn from the various NGO interventions. In many rural areas, women-only groups and organizations have been identified to allow women to pull their resources together to assist the needy among them (Eshiet, 2006). In most cases, they are brought together by an NGO initiative and are taught various life skills regarding health, nutrition, entrepreneurial skills, farming methods, and other means through which they can improve their economic status (Oakley (1991). With influence from non-governmental institutions, these groups are organized into cooperatives and associations such as the case in Cameroon, Burkina Faso, and Mozambique where these women have access to resources (Munah,2008). In Edo State Nigeria, Omorede, (2014) observes that different NGOs have helped women maintain cohesion among themselves through the different initiatives they are engaged in becoming more susceptible to new income ideas.

## **2.5. Conceptual framework**

For this study, the conceptual framework that functioned as the main guide is presented in figure 1 below.

The key variable studied is the performance of agricultural project projects measured by changes in socio-economic status of the farmer-beneficiaries as the dependent variable. Small-scale farmers are usually hampered by low levels of education among the farmers, lack of modern farming methods, traditional and cultural practices of general subdivision of land resulting in poor farming practices on continuously decreasing farming units with ever-decreasing lower yields. These farmers are further influenced by challenges that hinder their participation in agricultural farming and overall illiteracy among the farmers and disenfranchised women farmers, not forgetting the additional political and cultural barriers that prevent women farmers from accessing opportunities for economic

advancements in areas of education, health, income, and employment where women are most marginalized.

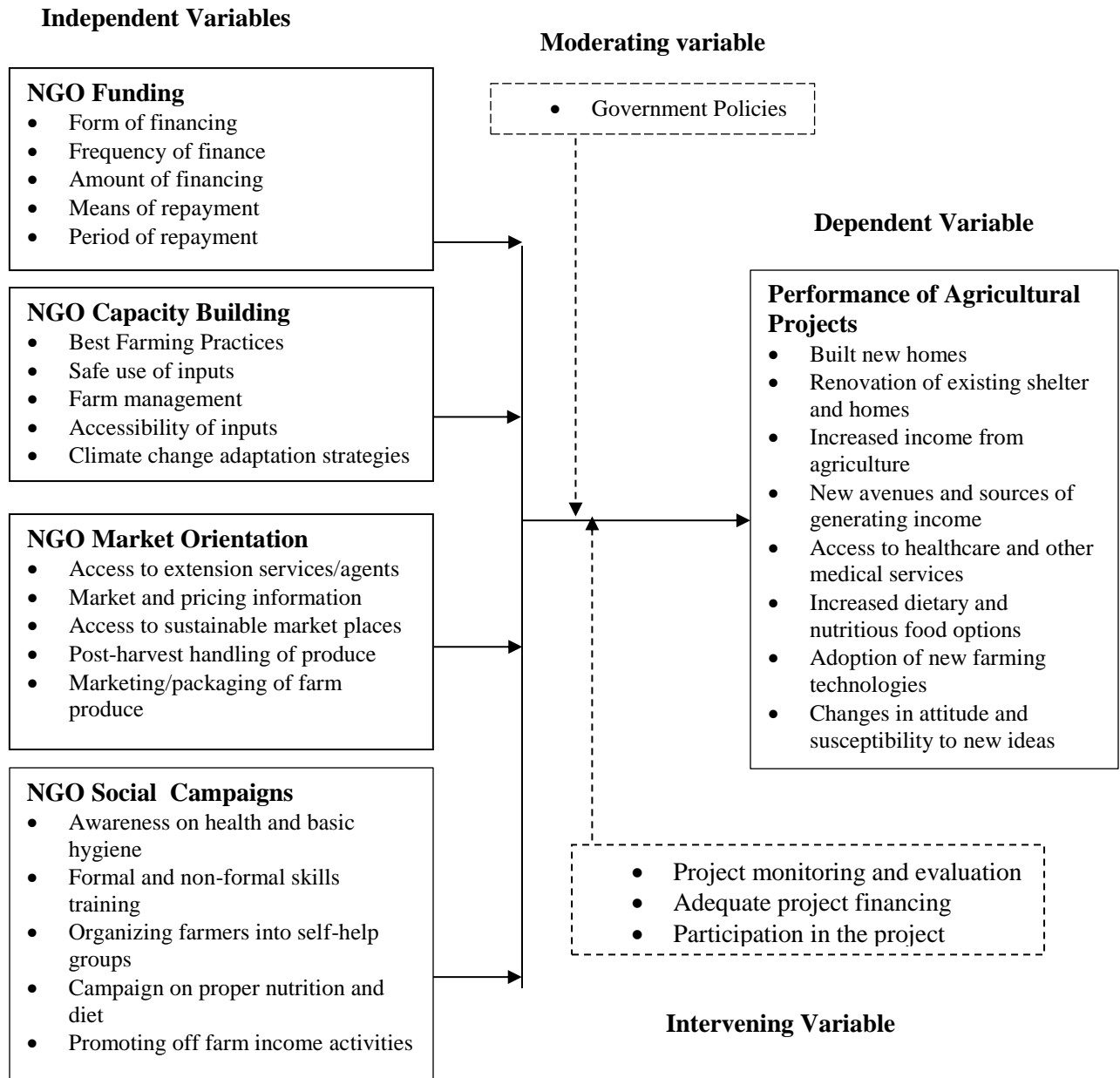


Figure 1 : Conceptual Framework

The various independent variables are represented by the cumulative NGO interventions: providing funding in the forms of loans and inputs to these farmers; conducting capacity building in farming practices, safe use of inputs and better farm management; providing market orientations by advising farmers on appropriate marketing strategy, providing

market access and educating the farmers on how to maximize profits from existing market value chains; and conducting social campaigns such as creating awareness on health and nutrition, providing basic literacy and numeracy skills as well as organizing farmers into self-help groups. All of which put farmers on the path of prosperity by empowering farmers with enough knowledge and skills, giving them access to funding opportunities, and enabling them to actively participate in non-farm-based opportunities where they can earn higher incomes making them more self-reliant and economically independent.

By examining these variables then it becomes possible to understand if the newfound economic independence of small-scale farmers is significant to their socioeconomic development thereby achieving the desired changes regarding their health, housing, education for their families, and incomes. In addition, active participation in the project by the farmers, availability of project funds to pay for the various project activities and comprehensive monitoring and evaluation play an intervening roles between project outcomes and project interventions. The existing government policies acts as the moderating variable given that they govern how NGOs operate and conduct interventions within the project context.

## **2.6. Summary of Literature Review and Knowledge gaps**

Literature has shown that NGOs have and are making advances in improving the socioeconomic status of their project beneficiaries in rural regions in Africa, Asia, and Latin America as they implement their project objectives and conduct their activities to promote rural development. It is in this process that people living in rural areas have and can acquire additional skills, capacities, funding, and financing through which they can

improve their socio-economic status and provide means of obtaining alternative livelihood sources.

The majority of the small-scale farmers mostly produce food crops and rely on livestock production for their livelihoods. The food crops are consumed by the family members with very few farmers able to sell in the local markets. Small scale agriculture is characterized by rain-fed farming, free-range livestock keeping, and agricultural productivity in these areas is hampered by low levels of education, lack of modern farming methods, traditional and cultural practices of general subdivision of land resulting in farming continuously decreasing farming units with ever-decreasing lower yields. At the same time, women in the rural areas and women farmers face various problems that prevent them from accessing loans, credit, farm land, farm inputs, extension services, agricultural training, and markets. There are also political and cultural barriers that prevent women from accessing opportunities for economic advancements and opportunities available in areas of education, income, and employment where women are most marginalized.

The government alone is not equipped to effectively deal with these issues that are faced by the small-scale farmers as well as ensuring an improvement in their livelihood and socioeconomic status. For this reason, private bodies, international agencies, and NGOs have stepped in to bridge this gap where the government fails and is not capable of providing adequate support to rural farmers.



**Table 2.1: Summary of knowledge gaps**

<b>Author</b>	<b>Focus of the Study</b>	<b>Methodology used</b>	<b>Findings</b>	<b>Knowledge gaps</b>	<b>Focus of current study</b>
Tuchitechi and Lee (2018)	Factors influencing the Performance of Agricultural Project from the Perspective of Agricultural Extension Workers.	A cross-sectional study design including multiple regression analysis	Projects fail in cases where targeted farmers are less educated, have excessive poverty and fail to effectively participate within the project.	The study examined why projects fail from the perspective of extension officers who are external to the project and may not be able to decide what project intervention approaches need to be applied thereby creating a conceptual gap with regards to performance of agricultural projects.	This study focused on how various project intervention approaches influence the performance of agricultural projects and not the specific factors that influence project performance.
Avea <i>et al.</i> (2016)	Do NGOs and Development Agencies Contribute to Sustainability of Smallholder Soybean Farmers	Applied a stochastic frontier analysis.	Farmer group membership in conjunction with NGO interventions and facilitation helps farmers become more efficient increasing their overall output production.	The study focused on how NGO intervention impacted the technical efficiency and sustainability of small-scale soy bean farmers in Ghana but did not examine how the intervention approaches	This study examined how NGO interventions influence performance of agricultural projects and not how they impact on farmers or project efficiency.

	in Northern Ghana?			influence the performance of agricultural projects.	
Omoredede (2014)	Assess the role and impact of organizations and NGOs on rural women in Nigeria in Edo-State	Applied a participatory development framework	Women organizations set up by NGOs as part of project initiatives help contribute to increased income and development as they help promote skills development in health, agriculture, health, and child care.	The study focused on creation of women organizations in rural areas as part of project interventions but failed to examine the complementarity of other aspects of NGO project interventions and its effects on overall project performance.	This study focused on how NGO project intervention approaches that will include funding, capacity building, and market orientation interventions in addition to social campaigns interventions where creation of women organizations also falls and influence performance of projects.
Bolarinwa and Fakoya (2011)	Impact of Farm Credit on Farmer's Socioeconomic Status in Ogun State, Nigeria	Computed adoption scores from the weighted score for rural communities items to estimate the farmer's	Securing loans positively influences the performance of farmers' production operations thereby improving socioeconomic status.	The study only focuses on how the provision of credit and financial funding influences the socioeconomic status of farmers leaving out the role of capacity training and	This study bridged this gap by examining how various NGO interventions of funding, capacity building, market orientation, social campaigns influence the performance of agricultural projects.

		socioeconomic Status		market orientation and other NGO interventions.	
Basantia (2011)	Impact of NGOs In Bringing Socio-Economic Development of Tribal Farmers Through Agricultural Activities in Koraput District International assisted projects.	Applied an ex-post-facto survey design, including use of frequency counts, percentages, and rank order.	NGOs make a significant contribution to the socioeconomic development of tribal farmers through their agricultural activities.	The study focusses on overall contribution of NGOs to overall socioeconomic development through agricultural activities but does not say anything on how the interventions undertaken through the NGO initiatives influence the overall agricultural projects and activities.	This study bridged this gap by looking at how various NGO intervention initiatives and approaches influence the performance of agricultural projects.

## **CHAPTER THREE : RESEARCH METHODOLOGY**

### **3.1. Introduction**

This chapter presents the methodology used in the study. This covers how the data was collected, what tools were used to collect the data, the research method that guided the study, and how the data was analyzed.

### **3.2. Research design**

This study used descriptive survey research design. This research design is useful in gaining in-depth concrete information allowing for exploration of key characteristics, meanings, and implications on a subject and thus useful in probing deeply and analyzing interactions between the factors that explain the present status that influence the study variables (Bent, 2011). The choice for using a case study is to ensure that it is possible to conduct an in-depth examination and provide insights on the subject under study (Yin, 2003). This research design will allow for assessing and examining the study phenomena without interference (Kombo and Tromp, 2006).

### **3.3. Target population**

The target population were the small-scale farmers from Bungoma County who have been supported by the various NGOs in the county. These farmers were of interest as they have benefited both directly and indirectly from the NGO interventions in agricultural projects and represent the target population corresponding to the study variables. This target population are 310 small-scale farmers from Webuye West subcounty of Bungoma county (Ochola, 2020). The study also considered 15 project managers as part of the target population. Their distribution in the various wards is outlined in Table 3.1.

**Table 3.1 : Target population**

<b>Webuye west subcounty wards</b>	<b>Population (N)</b>	<b>Percentage</b>	<b>Project Managers</b>
Bokoli Ward	110	35.5%	5
Matulo Ward	120	38.7%	5
Sitikho Ward	80	25.8%	5
<b>Total</b>	<b>310</b>	<b>100%</b>	<b>15</b>

### **3.4. Sample Size and Sampling Technique**

An appropriate sample from the target population was determined to answer the study objectives. The process of achieving the representative sample from the target population is known as sampling (Orodho, 2005). For this study, this process is detailed below and relied on Yamane’s formula for sample size determination.

#### **3.4.1. Sample size determination.**

A total of 310 small-scale farmers have benefited from agricultural projects in Webuye West sub-county implemented by NGOs in Bungoma county. To determine the representative sample, this study selected the required n units out of the total target population using the Yamane (1967) formula for sample size determination computed as follows :

$$n_0 = \frac{N}{1 + Ne^2} = \frac{310}{1 + 310(0.05)^2} = 174.6 \approx 175$$

Where:

**N:** is the population size.

**n:** is the sample size.

$e$ : the acceptable sampling error = 0.05

The sample size used for this study was 175 small-scale farmers as the sample units. This was selected from the target population of small-scale farmers who have benefited from various NGO programs administered in Webuye West Sub county. In addition, 15 project managers from various NGOs involved in various agricultural projects were also considered as part of the target group for the study. These were project managers from One acre Fund, V.I Agro forestry, Lutheran World Relief, Apollo, Kenya Climate and Innovation center (Agri-biz), GIZ and NARGP who have various agricultural projects in the three wards of Webuye West subcounty (Ochola, 2020).

### **3.4. 2. Sampling procedure.**

The study interviewed all the project officers and managers using a census approach. Even though the target population consisted of a homogeneous group, they were distributed in different wards according to project location and operation areas. To this effect random stratified sampling using the different subcounty-wards as strata was used to determine the number of farmers to interview from the various wards as shown in Table 3.2.

**Table 3.2 : Sample size distribution**

<b>Webuye West subcounty wards</b>	<b>Population (N)</b>	<b>Sample (n)</b>	<b>Project Managers</b>
Bokoli Ward	110	62	5
Matulo Ward	120	68	5
Sitikho Ward	80	45	5
<b>Total</b>	<b>310</b>	<b>175</b>	<b>15</b>

### **3.5. Data Collection Instruments**

Key informant interview guides and survey questionnaires were used as the main research instruments for the study. This included the use of semi-structured survey questionnaires aimed at collecting primary qualitative and quantitative data from the respondents. The study objectives will determine the design of the questionnaire that is included in appendix II. The questionnaire is semi-structured and has both closed and open-ended questions and also utilized Likert scales with scale values represented as follows ; “1: Unimportant”, “2: Low Importance”, “3: Moderately Important”, “4:Very Important” and “5: Extremely Important”. It also had an additional Likert scale where the scale values were represented as follows “1: Strongly disagree”, “2:Disagree”, “3; Undecided”, “4:Agree” and “5: Strongly Agree”

An introductory letter accompanied the questionnaire to introduce the researcher and explained the purpose of the study. The key informant interview guides collected qualitative data from the project managers. They were designed to elicit a response and produce deeper insights for the questions under study. The choice to use KIIs was because they can collect rich information as the informant can clarify and respond to the questions in a detailed manner (Ali, David, and Ching, 2013).

#### **3.5.1. Pilot testing**

The main purpose of using questionnaires was to make sure that the data obtained is applicable, appropriate, dependable, and valid, therefore it is essential to determine how accurate and clear the survey tool is (Taherdoost, 2016).

A pilot study using 17 respondents was conducted in Kimilili sub county of Bungoma county. This was done to determine if the questions as presented have meaning to both the researcher and respondent, or if there is a need to modify the intent of the questions to ensure that questions asked by the researcher measure what is intended to be measured (Mugenda and Mugenda, 2003). The choice of 17 respondents was based on the recommendation by Baker (1994) that emphasized the use of at most 20% and at least 10% of the study respondents during pilot testing. These were selected at random and used to check for errors and design problems in the data collection tool. Those who took part in the pilot study were excluded from the study.

### **3.5.2 Methods of data collection**

Both survey questionnaires and KIIs (key informant interview guides) were used to collect data collection. The surveys were administered through direct personal interviews of the small farmer respondents using enumerators. This method of data collection was chosen because it made the respondents to willingly give information as they were approached personally, and thus provided accurate information as any doubts and the resulting cross examination ensured only the correct information was collected (Gupta 2004). Key informant interview guides were sent electronically to the project managers since it was a faster means of transmission and had the quickest turnaround given that these managers were not able to have time for face-to-face interaction with the researcher (Kent and Brandal, 2003).

### **3.5.3. Validity of research instruments**

To check if the data tools are relevant and representative of the objectives a validation process was conducted. This was done to ensure that the interpretations of the results of



the research instrument were actionable and useful and answered the research questions adequately based on the design to the functions performed (Taherdoost, 2016). Content validation assessment was done, and the research instrument was reviewed and verified by the project supervisor, the lecturers from the University of Nairobi, and selected experts from the NGO world. The assessments was based on subjective opinions from the experts or judges who ensured that the research instrument had all the essential items, and all undesirable items were eliminated or modified (Wiersma (1995) and Taherdoost, (2016)).

### **3.5.4 Reliability of research instruments**

In order to ensure that the data tool was adequate and provided consistent measurement, a reliability test was conducted. This ensured that the study tool produced the same results under repeated measurement under similar conditions (Taherdoost, 2016). Reliability testing checked how consistent various parts of the measurement instrument were and their corresponding repeatability (Huck, 2007).

This study used the Cronbach Alpha coefficient to assess the reliability of the data instrument. This was measured against a scale of points where, a score of more than 0.9 meant excellent reliability, between 0.70-0.90 highly reliable, with a score between 0.50-0.70 implying moderate reliability and anything below 0.50 indicating low reliability (Hinton *et al.*, 2004). The results of the test are indicated in chapter four.

### **3.6. Analytical Model**

The questionnaire produced both qualitative and quantitative data. This information was coded and entered as data files in SPSS version 25. To ensure data is entered correctly, summaries and descriptive statistics was conducted to highlight any inaccuracies in data

entry as well as the identification of any unexpected outliers in the data (Pallant, 2011). Statistical measures of center or variation between the study variables were conducted to produce information useful for the interpretation of the study findings.

To show the influence of NGOs on the socioeconomic status of small-scale farmers, the study used a multivariate regression model. This model helped to examine how the dependent variable changed and by how much as result of variations on the independent variables of the study (Kumar, Singh, and Mirsha, 2013).

The regression model is defined as follows.

$$y = \alpha_0 + \alpha_1x_1 + \alpha_2x_2 + \alpha_3x_3 + \varepsilon$$

Where:

$y$  = Performance of agricultural projects

$\alpha_{0...4}$  = estimated coefficients

$x_1$  = NGO Funding

$x_2$  = NGO Capacity Building

$x_3$  = NGO Market Orientation

$x_4$  = NGO Social Campaigns

$\varepsilon$  = Error term

### **3.7. Ethical considerations**

Respondents were granted an opportunity to provide consent before administration of the questionnaire and the purpose and importance of the study was comprehensively explained before consent was sought. No compensation in any form was given to the respondents for their participation in the study. All information was treated in line with survey research

guidelines. This is because breach of confidentiality and loss of privacy have significant effects and pose serious harm to the respondents, something that is limited not only to the loss of employment, reputation, but also criminal or civil suit to the researcher (Singer 2003).

### 3.8. Operationalization of variables

**Table 3.3 : Operationalization of variables**

<b>Objectives of the Study</b>	<b>Variables</b>	<b>Indicators</b>	<b>Measurement Scales</b>	<b>Data Analysis</b>
To establish the influence of NGO funding intervention approaches on the performance of agricultural projects for small-scale farmers in Bungoma County.	NGO Funding (Independent Variable)	<ul style="list-style-type: none"> <li>● Form of Financing</li> <li>● Frequency of Finance</li> <li>● Amount of Financing</li> <li>● Means of repayment</li> <li>● Period of repayment</li> </ul>	Ordinal and Nominal	Descriptive and Inferential
To assess the influence of NGO capacity building intervention approaches on performance of agricultural projects for small-scale farmers in Bungoma County.	NGO Capacity Building (Independent Variable)	<ul style="list-style-type: none"> <li>● Best Farming Practices</li> <li>● Safe use of Inputs</li> <li>● Farm Management</li> <li>● Accessibility of inputs</li> <li>● Climate change adaptation strategies</li> </ul>	Ordinal	Descriptive and Inferential
To investigate the influence of NGO market orientation intervention approaches on the performance of agricultural projects for small-scale farmers in Bungoma County.	NGO Market Orientation (Independent Variable)	<ul style="list-style-type: none"> <li>● Availability of extension services/agents</li> <li>● Product marketing &amp; pricing information</li> <li>● Access to sustainable marketplaces</li> <li>● Post-harvest handling of produce</li> <li>● Marketing/packaging of farm produce</li> </ul>	Ordinal	Descriptive and Inferential

<p>To examine the influence of NGO social campaign intervention approaches on the performance of agricultural projects for small-scale farmers in Bungoma County.</p>	<p>NGO Social Campaigns (Independent Variable)</p>	<ul style="list-style-type: none"> <li>● Awareness of health and basic hygiene</li> <li>● Formal and non-formal skills training</li> <li>● Organizing farmers into self-help groups</li> <li>● Campaign on proper nutrition and diet</li> <li>● Promoting off-farm employment activities</li> </ul>	<p>Ordinal</p>	<p>Descriptive and Inferential</p>
<p>To determine the influence of NGO project intervention approaches on the performance of agricultural projects for small-scale farmers in Bungoma County.</p>	<p>Performance of Agricultural projects; (Dependent Variable)</p>	<ul style="list-style-type: none"> <li>● Built new homes</li> <li>● Renovation of existing shelter and homes</li> <li>● Increased income from agriculture</li> <li>● New avenues and sources of generating income</li> <li>● Access to healthcare and other medical services</li> <li>● Increased dietary and nutritious food options</li> <li>● Adoption of new farming technologies</li> <li>● Changes in attitude and susceptibility to innovative ideas</li> </ul>	<p>Ordinal</p>	<p>Descriptive, inferential, and regression analysis</p>

## **CHAPTER FOUR : DATA ANALYSIS , PRESENTATION, INTERPRETATION, AND DISCUSSION**

### **4.1. Introduction**

This chapter presents the data analysis, presentation of findings, interpretation, and discussions of the findings of the study. The findings are presented in tables in the chapter.

### **4.2. Reliability testing**

To check if the data tool was reliable enough to produce consistent measurements, a reliability test was conducted using the Cronbach Alpha coefficient. The research instrument attained a Cronbach Alpha coefficient value of 0.788 which indicates a high level of reliability of the research instrument (Hinton *et al.*, 2004). This indicates that the research tool used to collect the data for the study is consistent and produced highly reliable information that can be relied on as basis of making conclusions regarding the study objectives (Taherdoost, 2016).

### **4.3. Response rate**

During the data collection exercise, four enumerators were trained and assisted with the data collection exercise. The targeted small-scale farmers beneficiaries of agricultural projects were identified and interviewed until the required sample was achieved. All the 175 questionnaires that were submitted to the respondents were returned indicating a 100% response rate. The breakdown of the response rate is presented in Table 4.1.

**Table 4.1 : Response rate**

<b>Webuye West subcounty wards</b>	<b>Sample (n)</b>	<b>Response (n)</b>	<b>Percentage Rate (%)</b>
Bokoli Ward	62	62	100%
Matulo Ward	68	68	100%
Sitikho Ward	45	45	100%
<b>Total</b>	<b>175</b>	<b>175</b>	<b>100%</b>

#### **4.4. Background characteristics**

The study considered various background information with regards to the specific farmer in order to understand the small scale farmer. This included information regarding the gender, age, household size, head of household status, type of farmer and the farmers source of livelihood status.

##### **4.4.1. Gender of the respondents**

The study sought to determine the gender of the farmers in order to understand the gender profiles of the farmers. The results are indicated in Table 4.2.

**Table 4.2 : Gender of Respondent**

<b>Gender of respondents</b>	<b>Frequency</b>	<b>Percent</b>
Male	82	46.9%
Female	93	53.1%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results show that majority (53.1%) of those interviewed were women compared to 46.9% men. This shows that most of those engaged in small-scale farming were largely women.

#### 4.4.2. Age of the respondents

The study sought to understand the age distribution of the farmers in order to understand the various ages of the farmers. The results are indicated in Table 4.3.

**Table 4.3 : Age of respondent**

<b>Age bracket</b>	<b>Frequency</b>	<b>Percentage</b>
Less than 25 years	15	8.6%
Between 25 and 34 years	36	20.6%
Between 35 and 44 years	58	33.1%
45 years or older	66	37.7%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results show that those aged between 25 and 44 years accounted for the largest proportion of farmers interviewed as indicated by 53.7% of those interviewed. This was followed by those older than 44 years who accounted for 37.7%. The least proportion was those younger than 25 years who accounted for 8.6% of those interviewed. This shows that the majority of the farmers were youthful and energetic and in their active ages engaged in farming activities when compared to the younger or the older population.

#### 4.4.3. Household size

The study sought to determine the household sizes of the farmers interviewed. This was in order to establish the number of people per household where the farmers reside. The results are indicated in Table 4.4.



**Table 4.4 : Household size**

<b>Household size</b>	<b>Frequency</b>	<b>Percentage</b>
Less than 5	59	33.7%
5 to 9 people	106	60.6%
10 or more people	10	5.7%
<b>Total</b>	<b>175</b>	<b>100%</b>

The majority of the households in the county had between 5 to 9 people indicating that 60.9% of the farmers lived in households with at least 4 to 8 other members. Smaller households with less than 5 members in total accounted for one third of all households as 33.7% stated that they did not have more than 4 other members living with them. Large households with ten or more members accounted for 5.7% of all households. The results indicates that most small-scale farmers come from households with bigger and larger families.

#### **4.4.4. Number of children in the household**

The study sought to determine the number of children a farmer has in their respective households in order to determine the levels of dependency for the farmer. The results are shown in Table 4.5

**Table 4.5 : Number of children in the household**

<b>No. of Children</b>	<b>Frequency</b>	<b>Percentage</b>
None	15	8.6%
1-3 children	62	35.4%
4-6 children	62	35.4%
More than 6 children	36	20.6%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results shows that 91.4% of households had children as 8.6% of the farmers declared that they did not have a child living in their house. 35.4% of these households had at most 3 children. A similar proportion of 35.4% of the households had not less than 4 and not more than 6 children. The remaining 20.6% had more than 6 children. This indicates that the majority (70.8%) of the farmers have children who need to be fed and taken care of, implying existing levels of burdens for most of the farmers.

#### **4.4.5. Head of household status**

The study sought to establish the head of household status of the various farmer households. This was in order to know the proportion of farmers who were in charge of their respective houses. The results are indicated in Table 4.6.

**Table 4.6 : Head of household status**

<b>Household head status</b>	<b>Frequency</b>	<b>Percentage</b>
No	76	43.4%
Yes	99	56.6%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results show that slightly more than half (56.6%) of the farmers were heads of their respective households. This accounted for the majority of the households where these small-scale farmers resided, indicating that most farmers were in charge of their households and were the main providers for their respective households.

#### **4.4.6. Education status**

The study sought to determine the highest level of education completed by the various farmers. This was in order to understand the literacy levels among the farmers interviewed.

The results are indicated in Table 4.7.

**Table 4.7 : Education status of the respondents**

<b>Education Status</b>	<b>Frequency</b>	<b>Percentage</b>
Never been to school	3	1.7%
Primary School	53	30.3%
Secondary School	81	46.3%
College/Tertiary	26	14.9%
University or higher	12	6.9%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results shows that nearly all (98.3%) of the farmers had attended school as 1.7% said they had never been to school. 46.3% had completed secondary education, 30.3% had only completed primary education with 14.9% saying they had been to college or tertiary institutions. The remaining 6.9% said they had at least completed university education. This shows that most of the small-scale farmers are literate as the majority had attained some level of schooling.

#### **4.4.7. Type of farmer**

The study sought to determine the type of farmer those interviewed were. This was done in order to establish the level of commitment to farming activities that most of the interviewed farmers had dedicated themselves to. The results are indicated in Table 4.8.

**Table 4.8 : Type of farmer of the respondent**

<b>Type of farmer</b>	<b>Frequency</b>	<b>Percentage</b>
A full-time farmer	123	70.3%
A part-time farmer	50	28.6%
A leisure farmer	2	1.1%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results shows that 70.3% of the farmers indicated that they were full-time farmers. 28.6% said they were part-time farmers with 1.1% indicating that they only engaged in

farming activities as a form of leisure. This shows that most of the farmers interviewed dedicated most of their time to farming activities.

#### **4.4.8. Farming as a source of livelihood**

The study sought to determine if farming was a source of livelihood for the farmers interviewed. This was done to know if farmers derived their livelihoods from the farm. The results are indicated in Table 4.9.

**Table 4.9 : Farming as a main source of livelihood**

<b>Farming as main source of livelihood</b>	<b>Frequency</b>	<b>Percentage</b>
No	32	18.3%
Yes	143	81.7%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results shows that 81.7% of the farmers had indicated that they depended on farming as the main source of their livelihood. This shows that most small-scale farmers do not have alternative economic activities and have to rely on farming as their main source of income as well as employment hence their high level of engagement in farming activities and dependency on farming as the main source of livelihood.

#### **4.5. NGO funding intervention and project performance.**

The study wanted to establish if the farmers had received funding interventions from the NGOs as part of the project activities and functions. The results are indicated in Table 4.10.

**Table 4.10 : Farmers receiving funding and loans from NGOs**

<b>Do farmers receive any form of funding/loan from the NGO?</b>	<b>Frequency</b>	<b>Percent</b>
No	4	2.3%
Yes	171	97.7%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results indicate that 97.7% of the farmers had received funding from the NGOs as part of the project intervention.

In addition, the study sought to know the kind of funding the farmers who had received funding got, and the results are shown in Table 4.11.

**Table 4.11 : Kind of funding received**

<b>What kind of funding was received</b>	<b>Frequency</b>	<b>Percent</b>
Cash	7	4.1%
Asset based	164	95.9%
<b>Total</b>	<b>171</b>	<b>100%</b>

The results indicate that 95.9% of those who had received funding clarified that they had received funding in the form of assets which included farm inputs and other farming materials. 4.1% said that they had received funding in the form of cash from the NGOs.

The study further sought to determine how often the farmers had received the various form of funding they had indicated they had got from the NGOs. The results are indicated in Table 4.12.

**Table 4.12 : How often was the kind of funding received**

<b>How often did they receive this kind of funding ?</b>	<b>Frequency</b>	<b>Percent</b>
Every Month	1	0.6%
Every three months	10	5.8%
Every six months	23	13.5%
Once a year	113	66.1%
It was only one time, never again	24	14.0%
<b>Total</b>	<b>171</b>	<b>100%</b>

The results show that 66.1% of the farmers had received the funding they had got once a year. 14% clarified that the funding they got was only a one-time thing and they never again received that kind of funding. 13.5% confirmed that they received their funding every six months with 5.8% indicating they had received funding every three months. The rest (0.6%) said they had received their type of funding every month.

The study also wanted to know the value of funding and loans the farmers had received in total. The results are indicated in Table 4.13.

**Table 4.13 : Value of funding/loan received in total KES**

<b>Value of funding/loan received in total (KES)</b>	<b>Frequency</b>	<b>Percent</b>
Less than 10,000.	54	31.6%
More than 10,000 but less than 20 000.	70	40.9%
More than 20, 000 but less than 30,000.	20	11.7%
More than 30, 000 but less than 40,000.	5	2.9%
More than 40,000 but less than 50,000.	4	2.3%
More than 50,000.	18	10.5%
<b>Total</b>	<b>171</b>	<b>100%</b>

The results show that the amount of funding varied from respondent to respondent with the majority (40.9%) indicating they had received between KES 10,000 to KES 20,000. This was followed by those who valued the amount of funding they had received to be less than KES 10,000 and were represented by 31.6% of those interviewed. 11.7% claimed that they had received between KES 20,000 and KES 30,000 with 10.5% saying their total received amount was more than KES 50,000. The rest (5.2%) said they had received between KES 30,000 and KES 50,000.

The study further sought to establish the various ways through which the farmers needed to pay back the funding or loans they had received from the NGOs. The results are indicated in Table 4.14.

**Table 4.14 : Ways of paying back the funding/loans received**

<b>Ways of paying back the funding/loans received?</b>	<b>Frequency</b>	<b>Percent</b>
No payment was needed.	25	14.6%
Payment in cash or cheque.	117	68.4%
Payment in form of produce or other farm products	5	2.9%
Other forms of payment	24	14.0%
<b>Total</b>	<b>171</b>	<b>100%</b>

From the results, 85.4% of those who had received funding were required to make repayments. 68.4% said that their repayments was in the form of cash or cheques. 14% indicated that they had to use other forms of repayment, and this was in the form of installments through Mpesa pay bill numbers, community contributions or other specified repayment plans that also included paying in cash. 2.9% stated that they had to make repayments in the form of farm produce and farm products. For 14.6% of those who had received funding, no form of repayment or payment plan was expected from them.

The study sought to establish the timings for the various repayments for the farmers who had received funding. The results are indicated in Table 4.15.

**Table 4.15 : When are farmers supposed to repay the funding or loan received ?**

<b>How farmers supposed to repay the funding or loan received</b>	<b>Frequency</b>	<b>Percent</b>
Payment before harvesting.	91	53.2%
Repayment during harvesting	36	21.1%
Repayment after sale of harvest	4	2.3%
Other payment arrangements	40	23.4%
<b>Total</b>	<b>171</b>	<b>100%</b>

The results show that 53.2% of those who had received funding or loans had to make their payments before harvesting. 21.1% said they were required to make repayments during harvesting with 2.3% indicating that they were required to make repayments only after they had sold their harvests. However, 23.4% said they were using other repayment arrangements that included either investing in community Village Savings and Loans Associations (VSLA), by creating employment for community youths, or investing in group community activities, or distributing the proceeds to fellow farmer group members, or making contributions to specified community farmer groups.

The study also sought to establish from the farmers the rankings of the importance of the various aspects of funding as part of the NGO intervention in determining overall project performance. This was measured on a scale of 1 to 5 ranging from unimportant to extremely important and the results indicated in Table 4.16.

**Table 4.16 : Importance of various aspects of NGO funding in project performance**

	Unimportant (1)	Low Importance (2)	Moderately important (3)	Very Important (4)	Extremely Important (5)	Mean	Std. Deviation
The form of funding either in cash or in form of inputs	--	0.6	24.6	57.7	17.1	3.91	0.66
How often you receive the funding	--	1.7	34.3	45.1	18.9	3.81	0.75
The amount of funding you receive	--	6.3	25.7	44.0	24.0	3.86	0.86
How you are required to repay the funding	2.3	3.4	29.7	43.4	21.1	3.78	0.90



When and how long you should take in paying back	2.3	3.4	31.4	45.1	17.7	3.73	0.87
<b>Composite</b>						<b>3.82</b>	<b>0.58</b>

The results show that the form of funding was considered to be very important with a mean value of 3.91 and ranked first among the aspects of funding. The mean value is closer to very important and indicates that most farmers felt that this aspect of funding intervention was crucial to the project as slightly more than half (57.7%) considered it to be very important and 17.1% felt it was extremely important. With a standard deviation of 0.66, it is implied that there was a near perfect consensus among the farmers on the importance of this aspect.

The amount of funding was ranked second and had an average value of 3.86 and a standard deviation of 0.86 indicative that it was a very important aspect of the funding intervention. The mean value is closer to very important, and the standard deviation value indicates that there was a high level of agreement among the farmers regarding this aspect of funding and the role that it plays in the project. This is observed by 68% of the farmers who believed that the amount of funds received was either important or extremely important to the performance of the project.

The frequency of financing ranked third and was considered to be very important among the project beneficiaries with a mean value of 3.81 with a standard deviation of 0.75. The mean value lies between moderately important and very important but is closer to very important, and this indicates that most farmers shared an almost common opinion on the importance of this aspect of the funding intervention to the project. This is confirmed by

64% of the farmers who believed that frequency of funding was either very important or extremely important to the performance of the project.

The mode of repayment had a mean value of 3.78 and a standard deviation of 0.9 and was ranked fourth. The mean value of 3.78 lies between moderately important and very important and the standard deviation indicates that most farmers held similar views on the importance of this aspect of funding intervention to the project performance. 64.5% of the farmers felt that the funding repayment method was either very important or an extremely important aspect to the performance of the project.

The duration of repayment ranked last and had a mean value of 3.73 and a standard deviation of 0.87 which shows that most farmers considered this aspect of funding intervention to be very important. The standard deviation value indicates the existence of a near consensus among the farmers on the importance of this aspect of funding intervention to overall project performance.

Overall, NGO funding had a composite mean of 3.81 and a composite standard deviation of 0.58. This lies between moderately important and very important but is closer to very important and the standard deviation indicates that there was a clear consensus on the importance of funding interventions on overall project performance.

The importance of funding intervention was also observed from the key informant interviews. Most project managers identified funding interventions as a crucial and important component and essential for project success as it was directly linked to how most beneficiaries participated in the projects.

*“ The funding we provided in the project was in the form of grants and this made many project beneficiaries to actively participate in the project activities. Since they did not have to pay back the money, most of them were happy to engage with the project and took part in all activities. This made sure that all issues that emerged could be easily resolved allowing for a smooth project and performance”*

– key informant

*“Giving farmers inputs and farming materials makes them feel important and because of this they easily show up and actively participate in the project. Some cannot afford these inputs on their own and once they have been provided with these inputs, they feel indebted and readily participate in the projects knowing that they may be asked to repay the debt they owe”* – key informant

#### **4.6. NGO capacity building intervention and project performance**

The study sought to determine if the farmers had received capacity building training from the NGOs as part of the project intervention. The results are presented in Table 4.17.

**Table 4.17 :Do farmers receive capacity building from the NGO?**

<b>Do farmers receive capacity building training from the NGO?</b>	<b>Frequency</b>	<b>Percent</b>
No	1	0.6%
Yes	174	99.4%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results show that 99.4% of the farmers had received training or had attended capacity building workshops on farming and agricultural practices, as part of the project interventions.

In addition, the study also sought to establish the specific kinds and areas of trainings the farmers had received as part of the capacity building interventions. The results are indicated in Table 4.18.

**Table 4.18 : Types of capacity building training received**

<b>Types of capacity building training received</b>	<b>Percentage</b>
New farming practices and technologies	78.9%
Farm management practices and procedures	68.6%
How to access farm inputs and other tools	76.6%
How to use farm inputs correctly and safely	58.3%
Climate change adaptation strategies	50.3%

From the results, the largest proportion of 78.9% had received training on new farming methods and practices from the NGOs. This was followed by 76.6% who had been trained in how to access farm inputs and other tools. 68.6% had received training on farm management practices and procedures with 58.3% indicating they were trained in how to use farm inputs correctly and safely. Fewer farmers had received training on climate change adaptation strategies as only 50.3% confirmed that they had received training.

The study further sought to establish from the farmers the rankings of the importance of the various topic areas of capacity building and training as part of the NGO intervention in determining overall project performance. This was measured on a scale of 1 to 5 ranging from unimportant to extremely important and the results indicated in Table 4.19.

**Table 4.19 :Importance of various areas of NGO capacity building in project performance**

	Unimportant (1)	Low Importance (2)	Moderately important (3)	Very Important (4)	Extremely Important (5)	Mean	Std. Deviation
New farming practices and technologies --		1.1	26.3	54.9	17.7	3.89	0.69
Farm management practices and procedures --		1.1	34.9	45.7	18.3	3.81	0.74
How to access farm inputs and other tools --		2.3	30.3	46.9	20.6	3.86	0.76
How to correctly and safely use farm inputs --		2.9	30.9	50.3	16.0	3.79	0.74
Climate change adaptation strategies --		6.9	29.7	34.9	28.6	3.85	0.92
<b>Composite</b>						<b>3.84</b>	<b>0.53</b>

Training on new farming practices and technologies ranked first and had a mean value of 3.89 indicating that most farmers held the view that it was a very important topic area for project performance. With a standard deviation of 0.69 the farmers were almost unanimous on the importance of this topic to overall project performance. This was established by 72.6% of the farmers who felt that this area of training was either very important or extremely important for overall project performance.

Training provided on how to access farm inputs and other tools ranked second and had a mean value of 3.86 and standard deviation of 0.76. This shows that majority of the farmers considered this area of training to be very important to the project outcomes and the value of the standard deviation implies that most farmers considered how to access farm inputs and other tools to be a very important for overall project performance.

Climate change and adaptation strategies training had a mean value of 3.85 with a standard deviation of 0.92. This ranked third among the famers as who considered it a very important area of training and was crucial to the overall project performance. However, this decision was not unanimous 34.9% of the farmers considered the training to be very important while, while 28.6% felt that climate training was extremely important 29.7% thought it was just moderately important to the overall project outcomes and performance.

Capacity building initiatives on farm management practices and procedures ranked fourth. This had a mean value of 3.81 and a standard deviation of 0.74 which shows that there was near unanimous agreement on how this training area was important to the overall performance of the projects. This was evidenced by 64% of the farmers who considered this training area to be very important or extremely important to overall project performance.

Training on how to use farm inputs correctly and safely ranked last and had a mean value of 3.79 and standard deviation of 0.74. This shows that farmers that this training area was important for the performance of the project, and this was a common and shared opinion. This is confirmed by 66.3% of the farmers who felt that this area of training was either very important or extremely important to the farmers involved.

Overall, NGO capacity building had a composite mean value of 3.84 that lies between moderately important and very important but is closer to very important indicating that this NGO intervention was crucial for overall project performance. With a standard deviation of 0.52, the findings show that farmers were largely agreeable to the importance of this intervention to the overall project performance.

These findings are further corroborated by the results of the key informant interviews where most project managers considered the capacity building initiatives by NGOs effectively influenced the project outcomes given its high ability of empowering farmers with newer skills and greater capabilities associated with higher productivity of farms.

*“By offering various trainings most farmers learnt how to effectively use and measure the fertilizers, with others being able to use new farming management practices that helped them to improve their productivity” – key informant.*

*“Because of the training most farmers have been able to increase their yields and also the overall quality has greatly improved greatly. There are those who have changed to new farming practices and started their own nurseries to grow their own seedlings using the knowledge we had taught them. I am aware of a group who have been able access farming inputs at fair prices given that they share information amongst themselves” – key informant.*

*“There are farmers whom we have taught about mushroom farming, a new technology that they have not seen much in the area. This way they are able to make more money and there are those whom we have taught about financial management and costing of farm inputs to assess whether they are making profits or losses.”- key informant*

*“ There was farmers who I remember said that after the training they have been able to change the farming practices to new ones, control soil erosion in my farm, grown a new*

*variety of nutritious crops and also use new breed of maize and beans on their farm.” - key informant.*

#### **4.7. NGO market orientation intervention and project performance**

The study sought to determine if the farmers had received market orientation from the NGOs as part of the project intervention. The results are shown in Table 4.20.

**Table 4.20 :Do farmers receive market orientation from the NGOs?**

<b>Do farmers receive market orientation</b>	<b>Frequency</b>	<b>Percent</b>
No	14	8.0%
Yes	161	92.0%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results shows that 92% of the respondents confirmed that they had received market orientation in the form of guidance on how to effectively sell their produce in the local or other markets from the NGOs.

In addition, the study wanted to verify the specific kinds of orientations the farmers had received as part of the market orientation interventions. The results are indicated in Table 4.21.

**Table 4.21 : Type of market orientation received from the NGO**

<b>Types of market orientation received</b>	<b>Percentage</b>
Access to extension services and agents	48.6%
Information regarding markets and market prices	56.0%
How to access the various marketplaces	40.6%
Post-harvest handling of produce	71.4%
How to market and package the farm produce	36.6%

From the results, 71.4% had received orientation on how to handle produce post-harvesting. This was followed by 56% who had been furnished with information regarding



markets and market prices. 48.6% had access to extension services and agents while 40.6% were shown how to access the various markets. 36.6% had been shown how to market and package their farm produce.

The study sought to establish from the farmers rankings of the importance of the various aspects of market orientation as part of the NGO intervention in determining overall project performance. This was measured on a scale of 1 to 5 ranging from unimportant to extremely important and the results indicated in Table 4.22.

**Table 4.22 : Importance of various aspects of market orientation in project performance**

	Unimp ortant (1)	Low Importan ce (2)	Moderat ely importa nt (3)	Very Importa nt (4)	Extrem ely Importa nt (5)	Mean	Std. Deviasi on
Access to extension services and agents	0.6	6.3	46.3	36.0	10.9	3.50	0.79
Information regarding markets and market prices		6.9	25.7	49.1	18.3	3.79	0.82
How to access the various marketplaces		8.6	40.0	39.4	12.0	3.55	0.81
Post-harvest handling of produce		1.1	25.7	45.7	27.4	3.99	0.76
How to market or package the farm produce		4.0	45.1	37.1	13.7	3.61	0.77
<b>Composite</b>						<b>3.69</b>	<b>0.54</b>

Post-harvest handling of produce was ranked highest and had a mean value of 3.99 and a standard deviation of 0.79. This shows that most farmers unanimously agreed that this aspect of market orientation as part of the project intervention was very important to overall

project performance. This is evidenced by 73.1% of the farmers who felt that this aspect of market orientation was either very important or extremely important to the project outcomes.

Information regarding the various markets and the existing market prices where farmers could sell their products was ranked second and had a mean of 3.79 that lies between important and very important but is close to very important. The standard deviation was 0.82 which indicates a common shared opinion among the farmers on the importance of this aspect to overall project performance. This is proven by 67.4% of the farmers who considered access to information regarding the various markers and prevailing market prices was either very important or extremely important to the performance of the project.

Orientation aspects that focused on how to market and package the farm produce was ranked third and had a mean value of 3.61 and a standard deviation of 0.77. The mean value lies in between moderately important and very important but is closer to very important. This shows that most farmers considered this aspect as of importance to overall project performance and the standard deviation suggests the existence of a consensus among the farmers regarding this aspect. This is highlighted by 82.2% of the farmers who held the opinion that this aspect was moderately important or very important to the performance of the project.

How to access the various markets was ranked fourth with a mean value of 3.55 and standard deviation of 0.81. This means that farmers viewed this aspect to be of moderate importance in the performance of the project. The standard deviation value showed that there were less divergent opinions on the matter as 79.4% of the farmers shared a common

opinion that this aspect was either moderately important or very important to overall project performance.

Access to extension services and agents was ranked last and had a mean value of 3.50 and standard deviation of 0.79. This lies right in the middle between moderately important and very important indicating that most farmers felt that this aspect of market orientation was moderately important. The standard deviation value indicates that there was some consensus among the farmers regarding the importance of access to extension services to overall project performance. This is confirmed by 46.3% of farmers who indicated that it was moderately important and 36% who felt that it was very important to the performance of the project.

Overall, the market orientation variable had a composite mean value of 3.69 and standard deviation of 0.54 that lies between moderately important and very important. This indicates that farmers were almost unanimous regarding the importance of market orientation as an intervention in the performance of agricultural projects.

These findings are further corroborated by the project managers who highlighted the role that orienting farmers to the market plays in agricultural projects. The key informants held the view that market orientation gives farmers the required exposure and ability to, store, package and sell their produce appropriately whilst also ensuring that the farmers are able to get more income from their produce which they are able to sell at fairer prices in well researched markets.

*“Markets offer a higher pay for most farmers. Information and research on the markets helps them know what is needed in the various market places and if they have what is required, they can go and sell them there. The information we provide*

*helps them access new markets at a lower cost, let them know when and where to sell their produce. This is done by providing more linkages to the various markets in ways that enable them fetch good prices for their produce.” – key informant.*

*“ In our project we taught the farmers how to properly handle their produce in a safe and clean place. We have also strived to ensure that they are able to differentiate prices in different market places encouraging them only to sell their produce at a fair price. In some cases, we have even shown the farmers how to store their crops properly until they are able to gain new markets for their crops by ensuring that the farmers are able to store and package the produce in well-ventilated rooms” – key informant.*

*“ Most farmers have been taught how to store their crops in conducive environment with low moisture content. They also get good packaging bags thus avoiding the use of chemicals. In the last year because of our teachings on the markets, they have been able obtain fair prices for their crops.” – key informant.*

#### **4.8. NGO social campaign interventions and project performance**

The study sought to establish if the farmers had participated in the social campaigns offered as part of the NGOs project intervention. The results are shown in Table 4.23.

**Table 4.23 : Do farmers take part in social campaigns from the NGOs ?**

<b>Do farmers take part in social campaigns</b>	<b>Frequency</b>	<b>Percent</b>
No	--	--
Yes	175	100%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results shows that all farmers had taken part in the NGO social campaigns that were being conducted by various NGOs as part of the project intervention.

Additionally, the study sought to establish the specific social campaigns that farmers had participated in as part of the projects interventions. The results are indicated in Table 4.24.

**Table 4.24 : Type of social campaigns received from the NGO**

<b>Type of social campaigns received from the NGO</b>	<b>Percentage</b>
Awareness of health and basic hygiene	44.6%
Formal and non-formal skills training	58.3%
Organizing farmers into self-help groups	92.6%
Campaigns on proper nutrition and diet	49.7%
Promoting off-farm employment activities	37.1%

From the results, 92.6% of the farmers indicated that they had taken part in campaigns that encouraged farmers to organize themselves into self-help groups. 58.3% said they had taken part in campaigns that had both formal and non-formal skills training. 49.7% of the farmers indicated that they had participated in campaigns that encouraged the need for proper nutrition and diet. 44.6% of the farmers had been part of campaigns that created awareness of health and basic hygiene. Fewer farmers had taken part in campaigns that promoted off-farm employment activities as indicated by 37.1% of the farmers who confirmed their participation in such campaigns.

The study further sought to establish from the farmers the rankings of the importance of the various kinds of social campaigns conducted as part of the NGO intervention in determining overall project performance. This was measured on a scale of 1 to 5 ranging from unimportant to extremely important and the results indicated in Table 4.25.

**Table 4.25 : Importance of various kinds of social campaigns in project performance**

	Unimportant (1)	Low Importance (2)	Moderately important (3)	Very Important (4)	Extremely Important (5)	Mean	Std. Deviation
Awareness of health and basic hygiene	--	5.7	44.0	32.6	17.7	3.62	0.84
Formal and non-formal skills training	--	2.3	49.7	33.1	14.9	3.61	0.76
Organizing farmers into self-help groups	--	1.1	24.0	60.6	14.3	3.88	0.65
Campaigns on proper nutrition and diet	--	4.0	29.7	41.7	24.6	3.87	0.83
Promoting off-farm employment activities	--	3.4	48.0	29.7	18.9	3.64	0.82
<b>Composite</b>						<b>3.72</b>	<b>0.50</b>

Social campaigns that encouraged for organizing farmers into self-help groups was ranked first and had a mean value of 3.88 and a standard deviation of 0.65. This means that for most farmers this kind of campaign was very important for the project to succeed. The standard deviation values indicates that most farmers held common opinion on the campaigns role in overall project performance. This is evident by 60.6% of the farmers who felt that this campaign was very important and 14.3% who believed it was extremely important in overall project performance.

Campaigns on proper nutrition and dieting was ranked second and had a mean value of 3.87 and a standard deviation of 0.83. This implies that the farmers considered proper

nutrition and dieting to be a very important aspect of overall project performance. The standard deviation value indicates that this was a shared opinion as shown by the 41.7% of farmers who felt that campaigns on proper nutrition and diet was very important with 24.6% indicating that it was extremely important.

Awareness campaigns that called for the promotion of off-farm employment activities ranked third based on the mean value of 3.64 and standard deviation of 0.82. This means that for most farmers promotions of off-farm employment was important in overall project performance. This is highlighted by 48.6% of the farmers who felt that promotion of off-farm employment activities as part of the project intervention was very important or extremely important to overall project performance. However, 48% of the farmers felt that this kind of campaign was only moderately important, showing the existence of divergent views on the issue.

The campaigns on awareness of health and basic hygiene ranked fourth and had a mean value of 3.62 and a standard deviation of 0.84 indicating that most farmers considered this kind of campaign as part of the project intervention important to overall project success. 50.3% of the farmers held the opinion that this campaign was either extremely important or very important to project performance while 44% thought it was moderately important.

Awareness on formal and non-formal skills training was ranked fourth and had a mean value of 3.61 and a standard deviation of 0.76. The mean value lies in the middle of moderately important and very important indicating farmers held opposing views on the importance awareness of formal and non-formal skills training and its impact on overall project performance. This is the case as 48% of the farmers felt that this campaign as part of the project intervention was either very important or extremely important to overall

project performance while 49.7% felt that it was of moderate importance to the project performance.

The composite variable of social campaigns had a mean value of 3.72 and a standard deviation of 0.5. The mean value lies between moderately important and very important but close to very important. This implying that most farmers had a consensus on the importance of social campaigns as an intervention to the small-scale farmers.

The findings of this study are further corroborated by the results of the key informant interviews where project managers argued that the various social campaigns led to modified behaviours among the farmers, especially through the self-help groups where they teach and help each other.

*“ Most farmers have changed their diets from our campaigns on health and nutrition. Others have been able to network and now know new ways of getting more income. Those who have organized themselves in financial self-help groups have become more productive and now support one another financially. All in all, their living standards have changed, their health has improved and most of them have changed their way of life” – key informant.*

*“By Joining self-help groups most farmers have been able to participate in many activities and have been able to learn from one another. Most have eradicated malnutrition in their children, especially those who have large families, there are those who have changed from using cow dung as manure and now perfectly use fertilizers. The formation of these self-help groups where farmers support one another has provided good linkages and networking amongst them.” – key informant.*



*“There are those who have joined cooperatives and saccoes where they are able to get ready market for their produce. There are those I am aware of who have grown nutritious food and crops on their farms like Amaranthus, beans and soyabeans. They also do value addition and so encouraging them to be in groups has really helped them. In fact, for others, the groups have enabled them to competently pay back the loans they had received. for the loans”- key informant.*

#### **4.9. Performance of agricultural projects in Bungoma county**

The performance of agricultural projects was the dependent variable for this study. The study sought to establish if the lives of the farmers had been better compared to before the NGO interventions and their participation in the projects. The results are indicated in Table 4.26.

**Table 4.26 : Farmers life has improved compared to before the NGO**

<b>Farmers life has improved compared to before the NGO</b>	<b>Frequency</b>	<b>Percent</b>
Yes, it has improved drastically.	7	65%
Has improved a little bit	164	34.3%
Has remained the same.	4	0.6%
<b>Total</b>	<b>175</b>	<b>100%</b>

The results shows that 65.1% of the farmers confirmed that indeed their lives had improved a lot when compared to before the NGO intervention and projects. 34.3% said they had only observed little bits of improvements in their lives compared to before the project and the corresponding interventions from the NGOs. 0.6% of the farmers held the view that nothing in their life had changed and their life had remained relatively the same since the NGO projects began.

In addition, the study sought to further investigate the farmers' level of agreement with various statements regarding the various project outcomes in line with their housing, income, health , and education after the project. These levels of agreement ranged from strongly disagree to strongly agree based on a scale of 1 to 5. The results are in table 4.27.

**Table 4.27 : Performance of agricultural projects**

	Strongly Disagree		Undecided	Strongly Agree		Mean	Std. Deviation
	(1)	(2)		(4)	(5)		
Because of the NGO project, I have built a new house or shelter	2.9	53.7	0.6	33.1	9.7	2.93	1.17
Because of the NGO project, I have been able to renovate my existing structures and shelters	0.6	37.7	1.1	43.4	17.1	3.39	1.17
I am now getting an increased/more income from agricultural activities due to the NGO project	--	1.7	--	70.3	28	4.25	0.54
Because of the NGO project, I have new avenues and sources of generating additional income		3.4	1.1	69.7	25.7	4.18	0.61
I am now able to access better healthcare and other medical services because of the project	4	22.3	3.4	60.6	9.7	3.50	1.07
I now have increased dietary and nutritious food options for me and my family	--	0.6	--	67.4	32	4.31	0.50
I now use newer farming technologies and practices	--	0.6	0.6	75.4	23.4	4.22	0.47
I am now able to accept and more likely to use innovative farming ideas	--	--	--	78.3	21.7	4.22	0.41
<b>Composite</b>						<b>3.87</b>	<b>0.40</b>

The results shows that the majority of the farmers did not attribute construction of their new homes to the project, or the NGO interventions based on the mean value of 2.93 and standard deviation of 1.17. However, the standard deviation value indicates that the farmers were largely divided on the issue and were largely undecided on what role the project played in them build new houses or shelters. This is evidenced by the 53.7% who disagreed that because of the NGO they had built new houses and shelters and 42.8% who either agreed or strongly agreed that because of the NGOs they were able to build new houses and shelters.

There was no clear attribution of the projects or NGOs intervention to the renovations of the farmers' houses and shelters were based on the mean value of 3.39 and standard deviation of 1.17. This lies between undecided and agree and the standard deviation values indicate existence of varied views among the farmers. This means that farmers did not know if the renovations they had done to their existing structures could be attributed to the project or not. This is indicated by the as indicated by 37.7% who disagreed with this notion and 43.4% who agreed with this view.

Generation of more income from agriculture was mostly attributed to the projects with a mean value of 4.25 and standard deviation of 0.54. This indicates that most farmers were unanimous in their belief that the project had resulted in better and improved incomes as shown by 70.3% who agreed and 28% who strongly agreed that they were now getting more income from agriculture because of the projects.

Having new avenues and ways of generating additional income was also attributed to the projects as it had a mean of 4.18 and a standard deviation of 0.61. This indicates that most farmers were agreeable to the attribution of this outcome to the project as evidenced by

69.7% of the respondents who agreed and 25.7% who strongly agreed that because of the project they now had other avenues and sources from which they could generate additional incomes.

Access to better healthcare and other medical services was slightly attributed to the project with a mean of 3.5 and standard deviation of 1.07. This indicates that even though farmers were undecided on this issue, 60.6% of the farmers agreed that their participation in the project had somehow enabled them access better healthcare, while 22.3% felt that they could not attribute this outcome to the project.

Increased dietary options and availability of nutritious food options was attributed to the project based on the mean value of 4.31 and a standard deviation of 0.5. This is indicative of a high level of unanimity among the farmers as 67.4% agreed and 32% strongly agreed that because of the project they now had increased dietary options for their families. This attributes this outcome to the project.

Most farmers were now using newer farming technologies and practices based on the mean value of 4.22 and standard deviation of 0.47. This implies that most farmers shared a common opinion regarding their attribution of usage of newer farming technologies and skills to the project. This is shown by 75.4% who agreed and 23.4% who strongly agreed that because of the NGO they were now able to use newer farming technologies and practices.

Acceptance and use of innovative farming ideas was prevalent among the respondents based on the mean value of 4.22 and standard deviation of 0.41. This indicates that most farmers shared the opinion that their new acceptance was largely attributed to the project

and is evidenced by 78.3% of the respondents who agreed and 21.7% who strongly agreed that because of the NGO they more likely to accept and use innovative farming ideas.

Overall, the consolidated mean value for the performance of agricultural projects was 3.87 and standard deviation of 0.40 indicating that it was unanimous and that most farmers were undecided if they could entirely attribute all of their outcomes with regards to education, health, income, and shelter to their participation on the NGO project.

When asked to indicate how else they had been able to benefit from the project intervention activities most respondents outlined that they had become financially stable, were helping other farmers in the community or that they had been given roles by the various organizations.

*“They have trained my son as a field officer; they have also given me a tender to supply poultry feeds and I am learning about new things like value addition of farm produce.” – respondent*

*“I have become a lead farmer in my groups and so I am earning extra income from my services and selling groups. Under my leadership, more groups have been formed hence sharing of skills, that has led to changes in lifestyles.”- respondent*

*“My farm has been used as a demonstration plot to other farmers. I received a smart phone, solar lamp, and training manuals from the Organization, whereby I earned extra income from the sale of my services to farmers. It enabled me to buy a cow through selling my produce, now I have enough milk for my family. I have also developed my career”- respondent*

*“I bought an acre through selling of my produce. I am now financially stable. Also, I am a TOT, whereby I was given further training thus delivering the services to those in need of them.” - respondent*

The key informants were also asked to indicate what roles the government policy had in the various project interventions. The majority were of the view that the government played an oversight role on the NGO interventions and activities.

*“The new strategy for 2019-2029 has really made work easy. They have clear guidelines on how we should work. Then the county agricultural officer drops by from time to time during our training just to check. I think they just want to see if we are compliant” – key informant*

*“There are clear guidelines regarding how we work. Everything is outlined and the county government has to check if we have everything in place. So, from time to time without warning they check our permits, our approvals, and licenses just to make sure we are doing everything right.” – key informant*

*“The National NGO councils always want us to submit an annual report. This covers what we have done throughout the year. With a focus on how many people we have helped, who we have trained, what kind of training, the curriculum we have used. I think they just want to make sure that we are not into funny business otherwise they can block us from working here” - key informant*

#### 4.10. Multivariate regression

To determine the individual effects of the various NGO intervention approaches on the performance of agricultural projects, this study run a multivariate regression model. The model was defined as

$$y = \alpha_0 + \alpha_1x_1 + \alpha_2x_2 + \alpha_3x_3 + \varepsilon$$

Where:

$y$  = Performance of agricultural projects

$\alpha_{0...4}$  = estimated coefficients

$x_1$  = NGO Funding

$x_2$  = NGO Capacity Building

$x_3$  = NGO Market Orientation

$x_4$  = NGO Social Campaigns

$\varepsilon$  = Error term

The summary of the model used is indicated in Table 4.28.

**Table 4.28 : Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.574	0.33	0.314	0.396

The R square value indicates the variations of the dependent variables that can be attributed to changes and variations on one or more independent variables under study. The R square value of 0.33 indicates that only 33% of the changes in the dependent variable can be attributed to the variations of one or more of the independent variables.

This implies that NGO interventions in agricultural projects in terms of providing funding both in kind and assets, conducting capacity building initiatives, conducting market

orientation initiatives, and conducting social campaigns can only account for 33% of the performance of agricultural projects.

**Table 4.29 : Analysis of variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.105	4	3.276	20.914	0.000
	Residual	26.632	170	0.157		
	Total	39.737	174			

The analysis of variance indicates that the model used in the study is a good fit for the data ( $F_{4,170} = 20.914$ ,  $p < 0.000$ ) compared to critical value of ( $F_{4,170} = 2.372$ ). The results point to the variations in the independent variables influencing the dependent variables.

Therefore, the applied model can be used to predict and examine the influence of the various project intervention approaches of providing funding, conducting capacity building, conducting market orientation, and carrying out social campaigns (independent variables) and how they influence performance of agricultural projects (dependent variable).

**Table 4.30 : Estimated coefficients**

	Unstandardized		Standardized Coefficients	t	Sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	-0.355	0.249		-1.422	0.157
NGO funding	-0.075	0.203	-0.024	-0.369	0.712
NGO capacity building	0.496	0.148	0.234	3.356	0.001
NGO market orientation	0.578	0.171	0.224	3.384	0.001
NGO social campaigns	0.809	0.187	0.31	4.336	0.000



The final regression equation is shown as

$$Y = - 0.355 - 0.075 * \text{NGO funding} + 0.496* \text{NGO capacity building} + 0.578* \text{NGO market orientation} + 0.809 * \text{NGO social campaigns} + \text{Error term.}$$

The final regression equation shows that one unit change in the dependent variable results from a -0.075 change in funding, 0.496 change in capacity building, 0.578 change in market orientation and 0.809 change in social campaigns, all other factors remaining constant. The results show that various NGO intervention approaches variedly influence the performance of agricultural projects.

From the results, the regression shows that by providing funding the NGOs negatively influence the performance of projects based on the estimated coefficient of -0.075 (p-value > 0.05) even though the effect is not significant. By conducting capacity building, NGOs positively influence project performance based on the estimated coefficient of 0.496 (p-value < 0.05) and that the effect is significant. Likewise, conducting market orientation for the farmers positively influences project performance based on the estimated coefficient of 0.578 (p-value < 0.05) and effect is also significant. Conducting social campaigns positively influence project performance given the estimated coefficient of 0.809 (p-value < 0.05) indicating that the effect is significant.

The findings of the study shows that other factors not in the study have an effect on the performance of agricultural projects as determined by the regression coefficient of the constant term of -0.355 (p-value > 0.05).

#### **4.11. Discussion of findings**

This section gives the discussions for the study comparing the study findings with results of other scholastic studies on NGO interventions and the performance of agricultural projects.

##### **4.11.1. NGO funding and project performance**

Providing funding for project beneficiaries negatively influences the project even though the effect is insignificant. This contradicts the findings of Bolarinwa and Fakoya (2011) who argued that in the Ogun state of Nigeria, providing farmers with access to credit enabled farmers to purchase previously unaffordable items that consequently led to increased production of the farmer. It also contradicts the findings of Hasan, (2015) who attributed greater project performance to access to financing and credit.

The results also indicate that the form of funding, frequency, and amount of funding to be important aspects to consider during funding initiatives this is also consistent with the works of Asante, Afari-Sefa and Sarpong, (2011) who pointed the importance of providing support to farmers both directly and indirectly has positive implications on overall project outcomes if examined from a productivity perspective.

Modes or repayment and duration of repayment were considered to be slightly important by majority of the farmers, this confirms the findings by both (Avea *et al*, 2016) and Holloway, (1998) who in their works argue for discussion of payment plans, and repayment schedules usually takes a secondary role when seeking to link farmers to credit facilities and funding.

#### **4.11.2. NGO capacity building and project performance**

The study found that capacity building initiatives positively influence the performance of agricultural projects. This confirms the findings by Loiruck, (2013) who states that capacity building initiatives for farmers in the Arumeru district of Tanzania resulted in increased agricultural productivity. It also confirms the findings of Mandirahwe, (2016) who in their assessment of farmers in Zimbabwe concluded that interventions of capacity building have impacts on the farmers food security, health standards and income.

The study also found that teachings on best farming practices and how to access farm inputs and other farm tools including how to correctly and safely use farm inputs ranked highest among the farmers. This is similar to conclusions by Ofori *et al.*, (2014) who stated that farmers who participate in capacity development initiatives tend to improve in overall farming skills and develop enhanced abilities to obtain, understand and utilize new inputs as well as upgrade their overall farm managerial ability. This is similar to the findings of Bronkhorst *et al.*, (2017) who find that interventions on capacity building are consistent with improvements on how farmers conduct farm activities, apply, and correctly use fertilizers as well as overall farming practices and increased productivity.

#### **4.11.3. NGO market orientation and project performance**

The study found that market orientation positively influence the performance of agricultural projects. This is consistent with the findings of Song, Zhang, Song and Krystyna, (2016) who state that in Southwest China linking rural farmers to urban markets results in tripled farm incomes for farmers participating in the projects. The study also found that farmers considered having information regarding markets and market prices, as

well as how to access the various marketplaces including how to market or package the farm produce was very important which is similar to the findings of Makita, (2009) who stated that providing relevant information regarding markets to farmers in Bangladesh enables farmers to avoid competition and get better prices. This is also consistent with findings of Skjöldevald, (2012), Basantia, (2011), and Ahmed, *et al.*, 2016 who argued that by creating structures that enables farmers access better prices in more secure markets as well as providing the relevant and reliable information regarding the markets, the NGOs provide avenues to overcome limitations in most farmer produce markets.

The findings shows that access to extension services or agents was important for most farmers. This findings is consistent with that of Tamru *et al.*, (2017) and Berhane *et al.*, (2018) who came to the conclusion that increasing the extension agent to farmer ratio in Ethiopia, Kenya, Uganda, and Rwanda increases significant acceptability and use of modern inputs and new high-quality seeds by farmers of all levels leading to increased productivity and growth in the agricultural sector. The study findings also indicates that most farmers thought of post-handling of farm produce as very important findings that are in line with those of Avea *et. al.*, (2016), Basantia, (2011), and Makita, (2009) where they find that farmers who know how to handle their produce after harvest properly, processing and marketing results in better incomes for the farmers and from increased sales.

#### **4.11.4. NGO social campaigns and project performance**

The study found that social campaigns positively influence the performance of agricultural projects, and the effect is significant. The findings is consistent with the findings of Berti *et al.*, 2010 and Smith *et al.*, 2011 who argued that there is a direct relationship between social campaigns and positive project performance. The findings of the study showed that

most farmers considered organizing farmers into self-help groups as very important confirming the findings of Eshiet, (2006) who found that organizing farmers in women groups enables them to pull their resources enabling them to assist the needy among them. Similarly, Asante, Afari-Sefa and Sarpong, (2011) confirm this notion arguing that farmer based organization enables farmers to obtain financial assistance as these organizations are able to get the required collaterals to easily access funding.

The findings pointed out that farmers were of the view campaigns on proper nutrition and diet as well as awareness of health and basic hygiene were important for the farmers confirming findings of Ojo *et al.*, (2018) who concluded that most farmers are prone to diverse illness episodes during the production year, attributed to stress embedded in farm operations and have characteristically poor feeding and experience malnutrition and having existing mandates focusing on health education and illness prevention will result on healthy farmers who then become efficient resulting in consequent improved production. This is also confirmed by the findings of Akangbe *et al.*, (2015) who encouraged the need for health literacy programs among the small-scale farmers in Kwara state Nigeria as it would promote higher wellbeing of the farmers leading to higher agricultural production output by the farmer.

The findings of the study highlight that promotion of off-farm employment activities and provision of formal and non-formal skills training for the farmers were also important according to the farmers. This confirms the findings of Munah, (2008) and Omorede, (2014) who find that in rural areas of Burkina Faso, Cameroon, Mozambique, and Nigeria, small-scale farmers organized in groups are taught various life skills and other entrepreneurial skills that help improve their overall economic status.

## **CHAPTER FIVE : SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS**

### **5.1. Introduction**

This chapter entails the summary of the findings of the study, the conclusions presenting the recommendations from the findings that can work to influence both policy and practice.

### **5.2. Summary of the findings**

The summary of the findings are presented in this sections and relate to how various NGO interventions in form of providing funding, conducting capacity building, having market orientation interventions, and conducting of social campaigns influence performance of agricultural projects.

#### **5.2.1. NGO funding and project performance.**

NGO funding interventions negatively influences the performance of agricultural projects even though the magnitude is small and non-significant as most farmers received asset based financing compared to cash. For the various aspects of financing and funding, the study indicates that most farmers were likely to consider the form of funding, the amount of funding and the frequency of funding from the NGOs before deciding to participate in that kind of initiative. The farmers, however, were less concerned with how they were required to repay the funding they had received or even how long they had to make the necessary repayments as these aspects were less important to the typical farmer.

#### **5.2.2. NGO capacity building and project performance.**

NGO capacity building initiatives positively influenced project performance and the effects are significant. The farmers considered training initiatives on farming practices and

technologies were important, so were the relevant training initiatives on proper farm management practices and procedures as well as how to access farm inputs and other farm related tools. Capacity building on climate change adaptations were considered to also be very important so was the need to learn how to use the farm inputs correctly and safely. All farmers considered participation in capacity building initiatives as important and relevant and was linked to improved project performance.

### **5.2.3. NGO market orientation and project performance**

NGO market orientation interventions positively influenced project performance and the influence was significant. The farmers who considered market orientation that focused on post-harvest handling were the most important followed by those that focused on facilitating access to relevant information regarding markets and prevailing market prices. How to market or package the farm produce was also important according to the farmers. Means of accessing the various market places was less important compared to the orientation interventions with access to extension services and extension officers and agents was considered to be slightly less important according to the farmers.

### **5.2.4. NGO social campaigns and project performance**

NGO social campaigns interventions positively influence project performance, and the influence is significant. Farmers indicated that NGO campaigns and initiatives that focused on organizing farmers into self-help groups had an important role compared to the others. Campaigns on importance of proper nutrition and dieting was also very important for the farmers and it was followed by the important initiatives that focused on initiatives that encouraged promotion of off-farm employment activities as it fostered building of avenues

for increased incomes. NGO campaigns that encouraged awareness of health and basic hygiene practices were also important to the farmer with campaigns on formal and non-formal skills considered to be less important compared to the rest.

### **5.3. Conclusion**

NGO interventions in agricultural projects influences the performance of the projects. The capacity building interventions, market orientation interventions, and social campaigns interventions have been linked to positive project outcomes indicative of positive effects on overall project performance. The funding interventions on the other hand have been linked to negative project performance. For all interventions ,with the exception of funding interventions, the magnitude of the effects are relatively big and significant indicating that in agricultural projects, capacity building, market orientation and social campaigns play a crucial role in the projects based on their cumulative effect on the project outcomes. However, there are other factors that may be influencing the performance of agricultural projects that have not been considered by the study.

Those who had received funding interventions held the notion that they would majorly consider the form of funding, the amount of funding and the frequency of funding above all else seeking out any kind of funding intervention. Those who had received capacity building initiatives held the view that even though all capacity building roles were of importance, they were likely to be interested in taking part in initiatives that educated them on new farming practices, how to access farm inputs and other tools as well as climate change adaptations strategies, that have a direct link to their output productivity. For those who had taken part in market orientation interventions, knowing how to handle the farm produce post harvesting, receiving information regarding market and the corresponding



market prices as well as how to market or package the farm produce in readiness for the market were considered to be more important. These were linked to the farmers ability to effectively present their goods for sale in proper markets that fetched better prices. For most farmers, social campaigns that directly touched on their health, campaigned for their organizations into effective farmer groups, that promoted off farm employment opportunities were far more beneficial than any other.

The study concludes that even though NGO project intervention in agricultural projects present both positive and negative influences, the magnitude of the effects are significant enough to have a large effect on the project outcomes and output. Even though most of these interventions do not operate in a vacuum and interact with one another within the setting of the farmer, thereby directly influencing the farmers immediate output and consequent project performance. This study acknowledges the existence of other factors that have more predominant roles in the determination of the outcomes of the agricultural project and consequently their performance. Therefore, in agricultural projects, the choice of intervention work is a sufficient determinant of the project performance.

#### **5.4. Recommendations**

The study recommends that agricultural project targeting small-scale farmers in rural areas should mostly focus on providing market based interventions, campaigns, and orientations for the farmers as these have a positive influence on the outcome of agricultural projects. These need to focus on empowering the farmers through continuous capacity building and skills development.

NGOs should develop policies and guidelines that are aimed at effectively utilizing funding interventions and that even though it has negative effects on project performance. The aim

of the new policies should be aimed at reducing if not eradicating the associated negative impacts. The focus of these policies need to be on the form of funding, the amount of funding, and the frequency of funding when designing financing interventions given their high levels of importance to the farmer.

The social campaign intervention policies should be refined to continue focusing on health, nutrition, and off farm employment activities for the farmers through well-organized farmer welfare groups.

### **5.5. Areas of further research**

The focus of the study was to determine how NGO project intervention approaches influenced the performance of agricultural projects. In this respect the findings of this study is not applicable to all interventions that are undertaken for projects in other sectors that are non-agriculture. In this regard, studies should be conducted on various interventions in projects in other sectors and what effects they have on the project outcomes and performance.

The study examined how intervention approaches influence the performance of agricultural projects leaving out other aspects of agricultural projects. New studies should be conducted to further understand how intervention approaches relate and interact with other aspects that may include implementation, governance, quality as well monitoring and evaluation of agricultural projects.

In the study, NGO project interventions only account for 33% of the performance of agricultural projects, indicating that there may be other factors not included in the study that could have an effect on the performance of agricultural projects. For this reason, this

study proposes further studies to examine the factors that determine the performance of agricultural projects.

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## **APPENDIX 1: Letter of Transmittal of data collection Instruments**

Antony Abilla  
Department of Management Science,  
The University of Nairobi,  
Nairobi

Dear Respondent,

### **RE: DATA COLLECTION**

I am a student at the University of Nairobi researching on how *Non-Governmental organizations' interventions influence performance of agricultural projects in Bungoma county, Kenya.*

I am seeking assistance in filling out the questionnaire you have been identified as a person of interest and could be of assistance with this research and I am humbly requesting you to take part in this research. The information will be held with utmost confidentiality, and you will be anonymous.

The questionnaire is for academic purposes only and will take at most fifteen minutes to complete. Please give the information as accurately as possible. Thank you very much and your assistance is highly appreciated.

Yours faithfully,

**Antony Abilla**

## **APPENDIX 2: Questionnaire**

### **PART A: Background Information**

1. Indicate your gender?  Male  Female
  
2. How old are you?
  - Less than 25 years
  - Between 25 and 34 years
  - Between 35 and 44 years
  - 45 years or older
  
3. How many people live in your household including you?
  
4. How many children are there in your household? (*Those aged below 15 years*)
  - None
  - 1 – 3 children
  - 4 – 6 children
  - More than 6 children
  
5. Do you head your household? Yes  No
  
6. What is your highest level of completed education?
  - Never been to School
  - Primary School
  - Secondary School
  - College / Tertiary
  - University or higher
  
7. What kind of farmer are you?
  - A full-time farmer
  - A part-time farmer
  - A leisure farmer
  
8. Is farming your main source of livelihood or income?
  - Yes
  - No

## **PART B: SURVEY**

### **B.1: NGOs funding intervention and performance of agricultural projects**

9. Do farmers receive any form of funding/loan from the NGO?  
Yes  No
10. If yes, what kind of funding/loan do they receive?  
 Cash  
 Asset-Based (*in form of farming inputs and materials*)  
 Others. (*Please Specify*)
11. How often did they receive this kind of funding/loan?  
 Every Month  
 Every Three Months  
 Every Six Months  
 Once a Year  
 It was only one time, and you never received it again.
12. How much would you say the funding/loan was worth in total (KSH)?  
 Less than 10,000.  
 more than 10,000 but less than 20 000.  
 more than 20, 000 but less than 30,000.  
 more than 30, 000 but less than 40,000.  
 more than 40,000 but less than 50,000.  
 More 50,000.
13. In what ways were you supposed to pay back the funding/loan received?  
 No payment was needed.  
 Payment in cash or cheque.  
 Payment in form of produce or other farm products  
 Other forms of payment (*Please Specify*)
14. How were the farmers supposed to repay the funding or loan received?  
 Payment before harvesting.  
 Repayment during harvesting  
 Repayment after harvesting  
 Other payment arrangements (*Please Specify*)

15. Which of the following aspects regarding financing (funding/loans) is important to you as a small-scale farmer? (1: Unimportant, 2: Low Importance, 3: Moderately Important, 4:Very Important, 5: Extremely Important)

Aspects of funding	1	2	3	4	5
The form of funding either in cash or in form of inputs					
How often do you receive the funding					
The amount of funding you receive					
How you are required to repay the funding					
When and how long you should take in paying back					

**B.2: NGOs capacity building interventions and performance of agricultural projects.**

16. Do farmers receive any training/attend workshops on farming and agricultural practices from the NGO?

Yes       No

17. Which of the following topic have you/or farmers received training in and of what importance was it to you as a small-scale farmer? (1: Unimportant, 2: Low Importance, 3: Moderately Important, 4:Very Important, 5: Extremely Important)

Areas you have received training on from the NGO.			1	2	3	4	5
Best/New farming practices and technologies	Yes	No					
Farm management practices and procedures	Yes	No					
How to access farm inputs and other tools	Yes	No					
How to correctly and safely use farm inputs	Yes	No					
Climate change adaptation strategies	Yes	No					

18. In what ways have the training you received from the NGO been helpful to you as a farmer?

.....  
 .....  
 .....  
 .....

**B. 3: NGOs market orientation interventions and performance of agricultural projects.**

19. Do farmers receive guidance on how to market and sell their produce and products in the local or other markets (market orientation) from the NGO?

Yes       No

20. Which of the following aspects of market orientation have you been able to receive or access and how important was it to you as a small-scale farmer? (1: Unimportant, 2: Low Importance, 3: Moderately Important, 4:Very Important, 5: Extremely Important)

<b>Aspects of market orientation from the NGO.</b>			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Access to extension services/ agents	Yes	No					
Information regarding markets/market prices	Yes	No					
How to access the various marketplaces	Yes	No					
Post-harvest handling of produce	Yes	No					
How to market or package the farm produce	Yes	No					

21. In what ways has market orientation by the NGO been helpful to you as a farmer?

.....  
 .....  
 .....



.....  
 .....

**B.4: NGOs social campaigns interventions and performance of agricultural projects.**

22. Does the NGO conduct social campaigns for the farmers in the area?

- Yes             No

23. Which of the following social campaigns have been conducted in your area and how important was it to you as a small-scale farmer? (1: Unimportant, 2: Low Importance, 3: Moderately Important, 4: Very Important, 5: Extremely Important)

<b>NGO Social Campaigns</b>			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Awareness of health and basic hygiene	Yes	No					
Formal and non-formal skills training	Yes	No					
Organizing farmers into self-help groups	Yes	No					
Campaign on proper nutrition and diet	Yes	No					
Promoting off-farm employment activities	Yes	No					

24. In what ways has the social campaigns by the NGO been helpful to you as a farmer?

.....  
 .....  
 .....  
 .....  
 .....

**B.5: NGOs Intervention approaches and performance of agricultural projects.**

25. Would you say that life of farmers in the area has become better compared to before the NGO project?

- Yes, it has improved drastically.

- Has improved
- Has remained the same.
- Has become worse.
- Has completely taken a turn for the worst.

26. In your view how agreeable are you with the following statements regarding the NGO project in the area? (1: Strongly disagree, 2:Disagree, 3; Undecided, 4:Agree, 5: Strongly Agree)

Statement	1	2	3	4	5
Because of the NGO project, I have built a new house or shelter					
Because of the NGO project, I have been able to renovate my existing structures and shelters					
I am now getting an increased/more income from agricultural activities due to the NGO project					
Because of the NGO project, I have new avenues and sources of generating additional income					
I am now able to access better healthcare and other medical services because of the project					
I now have increased dietary and nutritious food options for me and my family					
I now use newer farming technologies and practices					
I am now able to accept and more likely to use innovative farming ideas					

27. In what other ways have you been able to benefit from the NGO activities in your area?

.....

.....

.....

THANK YOU !!

## **APPENDIX 3: Interview Guide for Project Managers**






### **Introduction**

This interview seeks to gather insights and opinions on how NGO intervention approaches influence the performance of agricultural projects in Bungoma County.

### **Section A: Specific Information relevant for the study**

1. How does NGO funding interventions for small scale farmers influence the performance of agricultural projects in Bungoma county, in terms of housing, education, income, and health? To what extent do you think that funding interventions influence the performance of agricultural projects ? Are there issues or challenges?
2. How does NGO capacity building interventions for small-scale farmers influence the performance of agricultural projects in Bungoma county, in terms of housing, education, income, and health? How important is capacity building to the project performance ? Are there issues or challenges?
3. How does NGO market orientation interventions for small-scale farmers influence the performance of agricultural projects in Bungoma county, in terms of housing, education, income, and health? How important is market orientation in this respect?
4. How effective are NGO social campaigns for small-scale farmers in influencing the performance of agricultural projects in Bungoma county, in terms of housing, education, income, and health? Are there specific challenges ? Are there thresholds on the extent of influence ?
5. How does monitoring and evaluation, availability of project funds, and effective participation of the project stakeholders influence the performance of agricultural projects ?
6. How do NGO intervention approaches influence the performance of agricultural projects in Bungoma county, in terms of housing, education, income, and health? Are there specific challenges ? Are there thresholds on the extent of influence, if any?

**APPENDIX 4: Research Permit**

 <b>REPUBLIC OF KENYA</b>	 <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
Ref No: <b>288435</b>	Date of Issue: <b>06/December/2022</b>
<b>RESEARCH LICENSE</b>	
	
<b>This is to Certify that Mr.. Antony Abilla of University of Nairobi, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Bungoma on the topic: NON GOVERNMENTAL ORGANIZATIONS' INTERVENTIONS INFLUENCING PERFORMANCE OF AGRICULTURAL PROJECTS IN KENYA : A CASE OF WEBUYE WEST SUB-COUNTY, BUNGOMA COUNTY. for the period ending : 06/December/2023.</b>	
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**THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)**  
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

**The National Commission for Science, Technology and Innovation**, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

**CONDITIONS OF THE RESEARCH LICENSE**

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
  - i. Endanger national security
  - ii. Adversely affect the lives of Kenyans
  - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
  - iv. Result in exploitation of intellectual property rights of communities in Kenya
  - v. Adversely affect the environment
  - vi. Adversely affect the rights of communities
  - vii. Endanger public safety and national cohesion
  - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

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