

**Stakeholder Engagement and Implementation of Agricultural Mechanization  
Initiatives: A Case of Tea Harvesting Machines Project at Kaptumo Tea Factory,  
Nandi County, Kenya**

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**Project Research Report Submitted in Partial Fulfilment of the Requirements for the  
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**DECLARATION**

This project research report is my original work and has not been presented in any University for any award.

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## **DEDICATION**

I dedicate this work to my parents for their moral and financial support throughout my academic journey.

## **ACKNOWLEDGEMENTS**

This project has been a tremendous success in my education journey. Through this voyage of thesis creation, I have learned new ideas and concepts which might have been unthinkable had I not carried out significant and thorough study. I am very thankful to the individuals who provided support and advice during the study project.

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## ABBREVIATIONS AND ACRONYMS

AASR	Africa Agriculture Status Report
ACET	African Center for Economic Transformation
ACT	African Conservation Tillage Network
ADB	Asian Development Bank
ADC	Agricultural Development Council
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
AGRF	Africa Green Revolution Forum
AMS	Agricultural mechanization strategy
ARCT	African Regional Centre for Technology
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU	African Union
AUC	African Union Commission
CA	Conservation agriculture
CAADP	Comprehensive Africa Agriculture Development Programme
CIMMYT	International Maize and Wheat Improvement Center
COAG	Committee on Agriculture
EAAFFRO	East African Agricultural and Forestry Research Organisation
EAC	East African Community
ECA	Economic Commission for Africa
FAO	Food and Agriculture Organization of the United Nations
<b>FH</b>	Farming Households
GDP	Gross domestic product
GR	Green Revolution
KTDA	Kenya Tea Development Authority

## **ABSTRACT**

Agricultural mechanization is often touted by policy makers as reducing the drudgery associated with agricultural work and as increasing the productivity of the farming system, especially in contexts where traditional technologies appear to be stagnant. This study examined the influence of stakeholder engagement on the implementation of the tea plucking machines among small scale tea farmers in Kaptumo Tea factory in Nandi County. This study was guided by four specific objectives namely; To examine the influence of Stakeholder involvement in initiation on implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers; To establish the influence of stakeholder engagement in planning on implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers; To determine the influence of Stakeholder Engagement in execution of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers; To examine the influence of stakeholder engagement in monitoring and evaluation and evaluation on implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers. The research was guided by descriptive survey research design. The target population was the tea farmers who supply their green leaf tea to Kaptumo Tea Factory which is a satellite of Chebut tea factory Co.ltd in Nandi County. The target population for this study was drawn from six (6) Zonal areas of the tea factory namely Siginuai Zone, Kaptumo Zone, Chepkaos Zone, Kipkenyo Zone, Koyo Zone, Ndurio Zone, factory directors and Agriculture extension officers. Stratified proportionate random sampling technique was used in this study. Data was collected by use of a questionnaire and interview guide.

Validity and reliability of the instruments was done. The quantitative data was analysed by statistical package for social scientists (SPSS) into descriptive statistics. The qualitative data was analysed by use of themes. Key conclusions and recommendations were drawn. The research concludes that stakeholder engagement at the initiation phase substantially influences implementation of agricultural mechanization project among farmers in Kaptumo Tea factory. Planning phase, Execution influences and Monitoring and evaluation influence implementation of agricultural mechanization project. This research recommends that project managers in Kaptumo should continue enhancing the engagement with the communities for the success of agriculture mechanization project at Kaptumo Tea Factory. This ought to involve all phases of project lifecycle starting from initiation, planning execution and monitoring and evaluation. This will ensure projects are being implemented in a proper way for full utilization of new technologies.

# **CHAPTER ONE**

## **1.0 INTRODUCTION**

### **1.1 Background to the Study**

In the last 50 years, few economies have been able to rise in the global market and become competitive. In those few cases, industrialization, including agro-industrial development, has played a vital role. Agricultural mechanization is part of agro-industrial development, and it has either stagnated or retrogressed in many countries of sub-Saharan Africa (SSA). This has occurred despite strong support for mechanization from African political leaders and heavy investments in both animal traction projects and mechanically powered mechanization, such as in tractors, pumps and post-harvest processing equipment.

There is need to develop agricultural initiatives in low- and middle-income countries. As technology transfer of large machinery from high-income countries was ineffective during the 1980s and 90s, mechanization options were developed appropriate to resource poor farmers cultivating small and scattered plots. More recently, projects that use farm machineries have tended to benefit service providers rather than individual farmers.

Given this scenario, FAO decided in 2004/05 to undertake a critical analysis of agricultural mechanization in SSA, by reviewing performance in the last three decades with an eye to the future while at the same time taking cognizance of the experience of other regions of the world. This led to an internal paper titled: Agricultural Mechanization in Africa: Time for a New Look. Its main aim was to put more focus on agricultural mechanization in SSA and to elaborate some of the technical and institutional factors that need to be taken into account. The discussion of this paper coincided with the signing of a memorandum of understanding by FAO and UNIDO in which the two organizations agreed to work together in areas of common interest. Both organizations have indulged more in the agricultural mechanization efforts in SSA during the 1970s and 1980s, dwelling more on different parts of the agricultural mechanization supply chain – with UNIDO focusing on the industrial end while FAO focusing on the agricultural end.

Most developing countries and, indeed, African countries have an economy strongly dominated by the agriculture sector. Agriculture generates up to 50 percent of gross domestic product (GDP), contributing more than 80 percent of trade in value and more than 50 percent of raw materials to industries. It offers possible employment opportunities to Africa's people. Despite this domination and the fact that agriculture is backed with good policy documents and statements, investment still not into practice in most African countries. Furthermore, 30 to 40 percent of agricultural produce is lost owing to poor post-harvest handling, storage and processing methods. Therefore, there is need for lateral expansion of the agriculture sector at all levels. The use of outdated engineering technology inputs in agriculture has been cited as one of the main constraints hindering the modernization of agriculture and food production systems in Africa.

Agricultural mechanization is the continued introduction of farm equipment to make activities such as land preparation, crop production, harvesting, processing, and transport of goods more efficient. Efficiency utilization of resources, as well as labor and land productivity, are derived through higher precision and timely operations, reduced drudgery and overall savings in labor, leading to higher quality of life (Clarke, 2000; Clarke and Bishop, 2002; Reid, 2011; Sims and Kienzle, 2016). Mechanization is regarded as an engine for agricultural transformation; only very specific farm operations are still accomplished manually in high- and middle- income countries (Schmitz and Moss, 2015), while farm machinery and tractor power in sub-Saharan Africa, parts of Latin America, and South Asia is almost negligible given total cultivated land area (Baudron et al., 2015; Mrema et al., 2008).

Yet, the advantages of mechanization options that are appropriate for the field sizes and resource endowments of smallholder farmers can be considerable (Sims and Kienzle, 2016). This is especially the case in countries with growing manual labor shortages caused by the rural to urban migration of youth, what in turn increases pressure on "those left behind", especially for female headed farm households (Baudron et al., 2015; Rosegrant et al., 2014; Sims and Kienzle, 2017). Despite increasing interest by policymakers and international donors to use mechanization as a vehicle for effective rural transformation (FAO, 2008; Mrema et al., 2014), efforts to improve mechanization of smallholder agriculture have not been consistently successful.

Agriculture is one of the core aspects that contributes positively to the Kenya's economy. It contributes roughly 26 percent of the Gross Domestic Product (GDP), 60 percent of the export earnings and also contributes probably 75 percent to the national labor force. Nearly 80 percent of the Kenyan population resides in the rural areas and thus means that they depend entirely on agriculture as their only source of livelihood. Agriculture is very crucial in eradicating poverty since the affected includes pastoralists, landless, and subsistence farmers depend on agriculture as their main source of survival.

Mechanization is one of the key inputs in agricultural production and a catalyst for development of rural areas. Use of its technology is what spurs up the agricultural production in large quantities. For instance, the use of motorized power stands at 30 percent, hand and animal draught power (ADP) at 50 percent and 20 percent in that order.

Harvesting of grain and root crops is a control-intensive function that also requires substantial power input. Therefore, it is always mechanized after mechanized plowing and threshing are adopted and is rarely profitable in low-wage countries (Binswanger 1986). Because of this, one would expect demand for mechanized harvesting to be quite low in Africa and occur only where wages are exceptionally high.

Harvesting can be mechanized through reaper machines or through small and large combine harvesters that both harvest and thresh the grain (Rickman et al. 2013). While it is rare overall, there do appear to be pockets in which demand for mechanized harvesting has emerged, mainly in cereal systems such as those for wheat in Kenya and Ethiopia as well as in rice irrigation schemes, mainly in West Africa (Longmire and Lugogo 1989; Hassena et al. 2000; Takeshima et al. 2013). In many of these cases, taking into consideration the labor cost of threshing and crop loss of manual harvesting and threshing, hiring the machines can be even cheaper than hiring labor for manual harvesting and threshing, which creates demand for hiring such services among smallholders in some areas.

Nevertheless, continental demand for mechanized harvesting will be minimal until a sharp rise in rural wages is observed, until large farmers who can afford to invest in a machine become more common, or both.

## **1.2 Statement of the problem**

Tea sub-sector is one of key aspects of poverty eradication for most Nandi South sub county residents , especially smallholder tea farmers, who depend mostly on tea farming as the source of livelihood. However, their tea production has been experiencing a diminishing curve, and so far, the reasons behind this curve remains uncertain.

A mature tea bush has a potential of producing above 6000kg green leaf per acre per year which may vary depending on the age, clone, geographical location of the farm and other factors (TRI 2013). Green leaf production at Kaptumo Tea Factory for the financial year 2020/2021 was 14.8 million kilograms translating to 3.7million kgs made tea (Kaptumo 2021). The majority of the farmers have therefore not exploited the full production potential of their tea bushes. The research endeavors to establish the influence of stakeholder engagement on implementation of agricultural mechanization among KTDA smallholder farmers Kaptumo tea factory catchment.

## **1.3 Purpose of the study**

The purpose of the study is to establish the influence of stakeholder engagement on implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya.

## **1.4 Research objectives**

### **1.4.1 Broad objective**

The study aims at investigating influence of Stakeholder Engagement On implementation of Agricultural Mechanization Project: A Case Of Tea Harvesting Among KTDA Smallholder Farmers at Kaptumo Tea factory.

### **1.4.2 Specific objectives**

This study was guided by the following objectives namely;

- i. To examine the influence of Stakeholder involvement in initiation on on implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- ii. To establish the influence of stakeholder engagement in planning on implementation of

- agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- iii. To determine the influence of Stakeholder Engagement in execution on implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
  - iv. To examine the influence of stakeholder engagement in monitoring and evaluation on implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya

### **1.5 Research questions**

The following research questions guided this study

- i. How does stakeholder engagement in initiation influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- ii. How does stakeholder engagement in planning influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- iii. How does stakeholder engagement in execution influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- iv. How does stakeholder engagement in monitoring and evaluation and evaluation influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya.

### **1.6 Significance of the study**

The research findings aim at providing policy makers with information that would help them establish influence of Stakeholder Engagement On implementation of Agricultural Mechanization Project: A Case of Tea Harvesting among KTDA Smallholder Farmers, and that would assist in project roll out to all farmers. The farmers will be informed on what hinders their performance and where possible the farmers may undergo training. The findings of this study will be used by policy makers to get the insight



of how stakeholder engagement in planning play a role in implementation of n mechanical Tea Harvesting Projects, how stakeholder engagement in building up influence implementation of n mechanical Tea Harvesting Projects, how stakeholder engagement rolling our play role in implementation of n mechanical Tea Harvesting Project and how stakeholder engagement transition and close-out play role in implementation of n mechanical Tea Harvesting Project

The research study will be beneficial more so the future researchers, for it may expound their knowldge and acts as the vital source of literature review for their research studies as well as a source of secondary data reference. They may also use their research to compare their findings undertaken in the same field of study over some period of time. By these finding, other counties wasnefit since the challenge and the guidelines are the same. The Factory Management will be provided with the findings of this study in a view to improving on the services that they offer the farmers.

### **1.7 Assumptions of the study**

The following assumptions were made in the study:

1. The sample that is chosen was representative of the target population. To ensure the sample is good representative, sampling procedure were be followed to the latter.
2. All respondents were cooperative and provide truthful information. To enhance this, anonymity and confidentiality is preserved and the participants could withdraw from the study at any time with no conditions.
3. The questionnaire used was returned on time and duly completed

### **1.8 Limitations of the study**

The Researcher limited the study to influence of Stakeholder Engagement in implementation of agricultural mechanization project in Nandi South catchment. The coverage of the over 6000 Farmers was not possible because of time and financial constraints, therefore a sample of the population was investigated. Challenges in this study include limited time to complete the investigations and scarce funds to cover all the costs. Time managed by use of volunteer growers of the tea factory, was used to reduce the total cost of collecting data.

### **1.9 Delimitations of the study**

The study is limited to the influence of Stakeholder Engagement On implementation of n mechanical Tea Harvesting , there are other ways that can be employed to improve output but the researcher chose to study this project.

There are many KTDA managed tea factories which the Researcher could have conducted the study but Kaptumo Tea Factory located in Nandi South Sub county of Nandi county in Kenya was chosen as it was easily accessible to the Researcher.

### **1.10 Definition of significant terms**

**Mechanization:** Mechanization of agriculture and farming process implies application of machine power to work on land

**Tea performance:** The weight of the black tea processed from tea plucked from one hectare Of tea bushes.

**Made tea:** This is the product of processing of green leaf tea plucked from the tea bush

**Farmers income:** all income that the farmer receives both non farming activities and on farm Activities.

### **1.11 Organization of the study**

Chapter one gives an introduction of the study, the purpose of the study, the objectives and research questions, which are followed by the significance of the study, the limitations and the scope of the study. Chapter two reviewed literature about the variables in the study to be carried out, looking at other studies done on the subject. To establish the influence of stakeholder engagement on implementation of agricultural mechanization among KTDA smallholder farmers. The theoretical frame work was discussed and conceptual framework thus developed. Chapter three was about the research methodology giving the research design, sampling procedure and the target population in the study. Chapter four is on data presentation, interpretation, and discussion while chapter five is on summary of findings, conclusion & recommendations of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter begins with a review in relation to the influence of stakeholder engagement in implementation of mechanical tea harvesting among KTDA smallholder tea farmers by stating what it means and the situation of the tea sector in Kenya. The insight of how stakeholder engagement in initiation play a role in implementation of n mechanical Tea Harvesting Projects, how stakeholder engagement in planning influence implementation of n mechanical Tea Harvesting Projects, and how stakeholder engagement play role in implementation of n mechanical Tea Harvesting Projects.

The conceptual framework showing diagrammatic presentation of the issues discussed is given at the end of the chapter.

Tea is an industrial crop among other crops like coffee sugar cane cotton sunflower, Pyrethrum, rice, sunflower, barley, tobacco, coconut and bixa all of which contribute to 55 percent of agricultural exports in Kenya . Crop production is be measured from crop production.

Fermont and Benson (2011) define crop yield as;  $\text{Crop yield} = (\text{amount of harvested product}) / (\text{crop area})$ . Crop yield is normally expressed as kilograms (Kg) or metric tons (t) of product per hectare (ha) or unit area. As a result the estimation of crop yield involves both estimation of the crop area and estimation of the quantity of product obtained from that area (fermont and Benson, 2011). The tea industry will often refer to the output of the tea processing which is the made tea and the area the tea bushes are planted, this then translates the definition of performance to;  $\text{performance} = \text{Kilograms made tea} / \text{area of tea planted in hectares or acres}$ .

As a major agricultural production input and a catalyst for rural development, mechanization aims to: increase the power inputs to farming activities, hence putting more land into production; reduce drudgery in farming activities, thereby enhancing lifestyles; improve the timeliness and efficiency of farm operations; accomplish tasks that are difficult to perform without mechanical aids; improve the quality and value of work, produce and processed products; provide employment (entrepreneurship) and sustainable rural livelihoods; provide agriculture-led industrialization and markets for rural economic growth.

Agriculture plays a significant role in the socio-economic development of the country by enhancing food security, offering job opportunities more so to the people residing in the rural areas, providing raw materials to the manufacturing sector and generating revenue from domestic and export trade despite facing various challenges such as environmental degradation, climate change, unfavorable terms of trade and increased competition from other sectors of production. Agricultural mechanization plays a key role in increasing efficiency and effective utilization of the productive resources. However, a number of reasons have hindered the enhancement of adoption of updated technology along the production value chain because the environment for mechanization has in the past been unfavorable for adoption as well as capacity for training, research and technology development has been inadequate. The relatively low level of mechanization has been as a result of numerous challenges such as inadequate training, research and technology development; weak local manufacturing and distribution, lack of agricultural mechanization quality assurance, low level of investments in mechanization services, use of outdated technology, and weak institutional policies and regulations. The cross-cutting issues affecting mechanization include matters related to negative effects of environment, inappropriate land use and climate change, vulnerable groups, gender and youth.

### **2.1. Stakeholder involvement in initiation and implementation of agricultural mechanization**

Mechanization of agriculture and farming process implies application of machine power to work on land, usually performed by draught animals and human labour. According to C.B.Memoria, “Mechanization chiefly consists in either replacing, or assisting or doing away with both the

At the start of the project and the goal of this phase was to define the project at a broad level. This phase usually begins with a business case. This is when the stakeholders will research whether the project is feasible and if it should be undertaken.

Stakeholders will do their due diligence to help decide if the project is a “go.” If it is given the green light, they will need to create a project charter or a project initiation document (PID) that outlines the

purpose and requirements of the project. It should include business needs, stakeholders, and the business case.

Nyabera (2015) undertook a study on Stakeholder participation on implementation of projects in Kenya: a case of Compassion International assisted projects in Mwingi sub-county. The study was guided by the following objectives: to establish the extent to which stakeholder participation in project initiation influences the implementation of Compassion International assisted projects in Kenya; to determine how stakeholder participation in project planning influences the implementation of Compassion International assisted projects in Kenya; to assess the extent to which stakeholder participation in project execution influences the implementation of Compassion International assisted projects in Kenya and to examine how stakeholder participation in project monitoring and evaluation influences the implementation of Compassion International assisted projects in Kenya. Descriptive research design was used in this study. The study also used both qualitative and quantitative research methods. The target population was 391 stakeholders within 4 Compassion assisted projects. The study had a sample size of 191 respondents derived by use of Fisher et.al, formula with 80% response rate. The research was carried out using a questionnaire and interview guide. The study established that in projects with stakeholders represented in the project governance structure, stakeholder participation in project initiation strongly influenced project implementation at a correlation coefficient of 0.802, followed by stakeholder participation in project planning at a correlation coefficient of 0.798. Stakeholder participation in project execution had some relatively good influence on project implementation at a correlation coefficient of 0.616. However, stakeholder participation in monitoring and evaluation had weak influence on project implementation at a correlation coefficient of 0.350. The study recommends that there be a review of the existing policies on Compassion sponsorship program with the aim of increasing the influence of stakeholder participation on implementation of Compassion projects making them more effective. It also recommends that organizations should continuously train all project staff and leadership on both stakeholder analysis and participation in their projects to enable them to competently involve all stakeholders in project implementation. The study recommends further research on the influence of

project stakeholder participation in implementation of urban based projects since this study was conducted in a rural set up. Finally, a study should be carried out on the barriers to effective project stakeholder participation in project implementation since the research shows that stakeholder participation is not fully embraced.

## **2.2. Stakeholder involvement in planning and implementation of agricultural mechanization**

This phase is key to successful project implementation and focuses on developing a roadmap that everyone will follow. This phase typically will be setting goals. Two of the more popular methods for setting goals are S.M.A.R.T. and CLEAR:

**S.M.A.R.T. Goals** – This method helps ensure that the goals have been thoroughly vetted. It also provides a way to clearly understand the implications of the goal-setting process.

**Specific** – To set specific goals, answer the following questions: who, what, where, when, which, and why. **Measurable** – Create criteria that you can use to measure the success of a goal. **Attainable** – Identify the most important goals and what it will take to achieve them. **Realistic** – You should be willing and able to work toward a particular goal. **Timely** – Create a timeframe to achieve the goal.

**C.L.E.A.R. Goals** – A newer method for setting goals that takes into consideration the environment of today's fast-paced businesses. **Collaborative** – The goal should encourage employees to work together. **Limited** – They should be limited in scope and time to keep it manageable. **Emotional** – Goals should tap into the passion of employees and be something they can form an emotional connection to. This will optimize the quality of work. **Appreciable** – Break larger goals into smaller tasks that can be quickly achieved. **Refinable** – As new situations arise, be flexible and refine goals as needed.

During this phase, the scope of the project is defined and implementation of the plan is developed. It involves identifying the cost, quality, available resources, and a realistic timetable. The project plans also includes establishing baselines or performance measures. These are generated using the scope, schedule and cost of a project. A baseline is essential to determine if a project is on track. Mechanization is one factor that has had significant effect on total factor productivity since the genesis of

modern agriculture. Yield increases primarily as a result of improved timeliness of operations if tea farmers can employ the use of plucking machines then the history of being overtaken by time due to large sizes of land and few pluckers will be a story of the past. Nandi South subcounty in which the research was conducted there are over 15 tea factories. This has resulted in stiff competition for the the raw material. Population is increasing yet land size remain the same, equally the processing industries increases but area under tea remains the same since there not much room for tea expansion. The pluckers are few compared to tea acreages and in most cases the tea overgrows and exceeds the required 2leaves and a bud requirement.

Farah (2020) undertook a study that sought to examine stakeholders' involvement and project implementation in Somalia: A case study of Bosaso Airport Road Construction Project. The study tend to determine the effect of stakeholders' planning on Project implementation of Bosaso Airport Road Construction Project, to assess the effect of stakeholders monitoring and evaluation on Project implementation of Bosaso Airport Road Construction Project and to establish effect of resource mobilization in project implementation of Bosaso Airport Road Construction Project. The study therefore recommended that the community should play a critical role in decision making because they are the beneficiaries of the projects and know well projects are beneficial to them

Mandala (2018) undertook a study that sought to determine stakeholders' involvement influence on the management of projects on performance of road construction projects in Kenya. The study also sought to establish the effect of stakeholders' involvement in project identification, project initiation, project planning, project implementation and monitoring and project evaluation on the performance of road construction projects in Kenya. Descriptive research methodology and cross-sectional survey design was used during this study. The target population was 48,002 residents of Bondo Sub County, 30 projects managers in road construction projects in Bondo Sub County, Siaya County. Slovin's Formula was used to determine the sample size. The selection of 396 respondents from the target population involved the usage of stratified random sampling. The collection of primary data involved the usage of semi structured questionnaires and interviewing the key informants. Pilot test was used for determination of reliability and validity of data collection instruments. Closed ended questionnaires were used for generation of quantitative data while qualitative data were derived through interviewing of key informants and the usage of open ended questionnaires. Analysis of qualitative data involved the usage of

thematic analysis and the results were presented in prose forms. The analysis of Quantitative data involved the usage of Statistical Package for Social Sciences (SPSS version 22). Qualitative data was analyzed by the usage of descriptive and inferential statistics. Frequency distribution, mean, standard deviation and percentages were inclusive in descriptive statistics. Inferential data analysis was done using multiple regression analysis. The study found that stakeholders' involvement in project identification had a significant influence on the performance of road construction projects in Bondo Sub County. The study also established that stakeholders' involvement in project initiation had a significant influence on the performance of road construction projects in Bondo Sub County. The study further established that stakeholders' involvement in project planning had a significant influence on the performance of road construction projects in Bondo Sub County. Also, the study found that stakeholders' involvement in project implementation had a significant influence on the performance of road construction projects in Bondo Sub County. In addition, the study found that stakeholders' involvement in monitoring and evaluation had a significant influence on the performance of road construction projects in Bondo Sub County. The study recommends that project managers should involve stakeholder in various aspect of project identification such as performance of phase review. In addition, project managers should adopt various aspects of project initiation such as making signing of stakeholders as meaningful as possible so as to enhance personal commitment of stakeholders to their obligations. Also, stakeholders should be involved in various aspects of project monitoring and evaluation such as cost control, procurement administration and quality control so as to improve on performance.

The current study is focusing on the Agricultural sector to determine how community participation is conceptualized.

The current study focused on agricultural mechanization with smallscale tea farmers in Nandi county and see how the farmers perceive community participation in their projects.

### **2.3. Stakeholder involvement in execution and implementation of agricultural mechanization**

Mechanization enhances production as well as productivity due to timeliness of operations, and better quality of operations. Practically, large scale farmers of owning between 3 and 25 acres produce as little



as 0.7kg per bush per year. This therefore affirms that it is the issue of labour. The researcher therefore endeavoured to ensure that large scale farmers overcome this through employment of the plucking machines. Mechanization raises efficiency of labour and enhances farm production per worker.

This is where deliverables will be developed and completed. This often feels like the meat of the project since a lot will be happening during this time, like status reports and meetings, development updates, and performance reports. A “kick-off” meeting usually will mark the start of the Project Execution phase where the teams involved are informed of their responsibilities. While the project monitoring and evaluation phase has a different set of requirements, these two phases often occur simultaneously.

Nyabera, (2015) conducted a study on influence of stakeholder participation on implementation of projects in Kenya: a case of compassion international assisted projects in Mwingi sub-county. The study established that in projects with stakeholders represented in the project governance structure, stakeholder participation in project execution strongly influenced project implementation at a correlation coefficient of 0.802, followed by stakeholder participation in project planning at a correlation coefficient of 0.798. Stakeholder participation in project execution had some relatively good influence on project implementation at a correlation coefficient of 0.616.

Munene, (2013) did a study that involved stakeholder involvement in strategy execution and implementation at Lake Victoria South Water Services Board, Kenya. In this study, the objective was to investigate the extent of stakeholder involvement in strategy implementation at the Lake Victoria South Water Services Board (LVSWSB). Using a case study, an interview guide was used to gather data from various interviewees. The study found that LVSWSB had a wide range of primary stakeholders who it involved to a higher extent towards meeting its objectives as outlined in its service provision mandate. The Board had identified its core stakeholders and had already achieved milestones through their involvement. However, there were glaring imbalances in the involvement of stakeholders; the high-end stakeholder seemed to have higher preference as opposed to those at bottom-of-the-pyramid such as resident associations and community-based organizations. Based on the aforementioned, the study recommended wider inclusion of stakeholders in the Board’s operational obligations. While this inclusion would ensure wider ownership of projects implementation and success, it would also assist in faster decision making to avoid stalling or abandonment of projects.

Njue et al., (2021) study involved implementation, stakeholders participation and sustainability of public projects in Kenya whereby it seeks to fill the knowledge gaps by investigating the interaction between the stakeholders' participation and the relationship between implementation and sustainability of public projects in Kenya. It argues that stakeholders' participation plays a dualistic role in project execution and project sustainability from linear perspective.

#### **2.4. Stakeholder engagement in monitoring and evaluation and implementation of agricultural mechanization**

Many projects in third world countries fail to be successfully completed due to several reasons. Among these are lack of understanding of the need for monitoring and evaluation. This study attempted to outline the contribution of Monitoring and evaluation to ensure successful implementation of Agricultural mechanization project.

Lekunze, (2001) conducted a study on stakeholder involvement in integrated water resource management in community water management projects in Cameroon. The study analyzed the commitment of youth to water resource management by comparing the results of the different approaches used. The study revealed that the organizations that practiced a stakeholder participatory approach while involving the youth had greater chances to succeed than others that did not consider as an approach.

On the other hand, Atiibo (2012) examined stakeholder management challenges and their influence on project management in the case of advocacy and empowerment in the upper east region of Ghana. The study indicated that the roles and interests of the key stakeholders were very critical to the project operations. However, stakeholder management was found to be characterized by casual and temporary actions which are not predominantly institutionalized. Challenges like unfair competition, conflict of interests, weak commitment, and poor communication line, limited expertise of managers, misunderstanding and appreciation of leadership problems were found to impact severely on the work of the organizations.

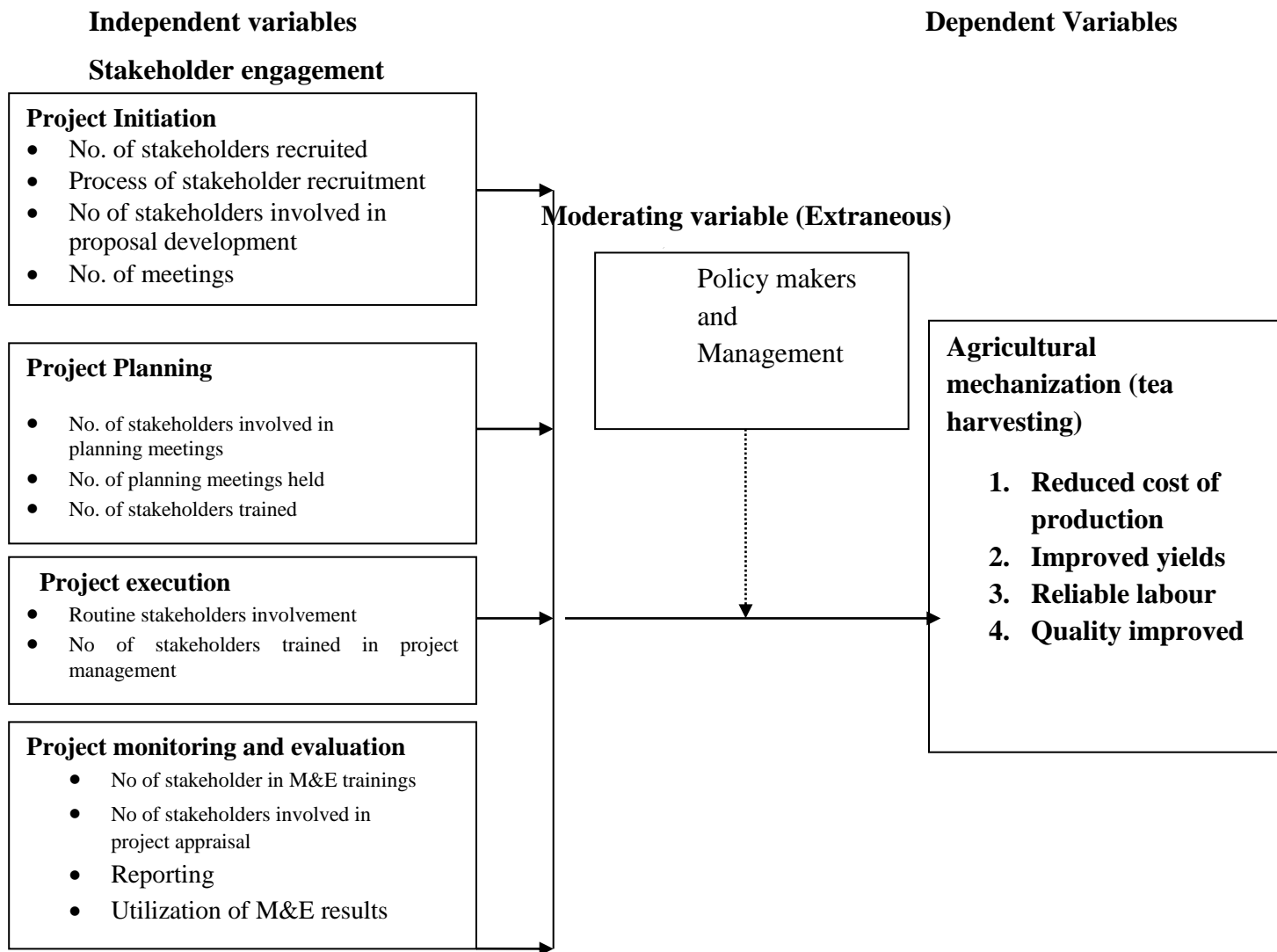
Furthermore, Menoka, (2014) did a study on stakeholder involvement and sustainability related to project performance in construction. The study sought to improve stakeholder involvement in construction project performance through achieving construction sustainability. A framework was developed and include different stakeholders with sustainability driven project performance. The research was conducted as an empirical investigation and the findings depicted that effective preparation and presentation of stakeholder involvement contributes to improve the construction project performance through achieving the construction sustainability. The study found also that there is variation of perception of projects participants' roles, stakeholder involvement, and construction sustainability and construction project performance towards organizations. This implied that involvement can be valuable in anticipating the expectations of different stakeholders from the projects. The current study investigated how monitoring and evaluation has been applied in the rolling out of tea plucking machines among small scale farmers in Nandi county.

## **2.5 Theoretical framework**

The theory of Agrarian transformation and mechanization is the theoretical basis of this study. This theory was postulated by Ester Boserup in 1965. The theory argues that agricultural intensification through mechanization was ideal in maximizing farmer returns. This theory was majorly informed by population growth at the time. In stakeholder participation in implementation of the agricultural mechanization programme, the following are considered What work must be accomplished, What deliverables must be generated and reviewed, Who must be involved, How to control and approve each phase If these elements are well determined, it will take a project from start to finish. It will provide a systematic, timely, and controlled process that benefits a project's stakeholders. This helps the stakeholders define what needs to be accomplished before moving onto the next phase of a project. As food security become more important, mostly due to the explosive population Growth during the 20th century, the efficiency of agrarian systems come under greater review. This theory entails transition from "traditional" to "modernity" When modernization of agriculture takes place, old practices are abandoned in favor of the new and more viable practices thus change in agriculture creates economic development.

According to Orodho,(2005) the theoretical focus on increasing agricultural output and improving income distribution in the rural sector may be the only effective way to get their economies moving. Performance can be improved by use of high yielding varieties of seed, application of fertilizer, good farming practices and the development of intermediate or appropriate technologies to complement labor. A number of critical factors constrain the performance of small scale farmers, These include hostile climate, poor soils, rapid population growth, limited market opportunities, and a lack of commitment to rural development by the government (Munyeko,1994: Orodho, 1984)

## 2.6 Conceptual framework



**Fig1. Conceptual framework**

Kombo and Tromp (2006) defined conceptual frame work as a set of principles taken from the relevant fields of enquiry and used to structure a subsequent presentation. It is identification and descriptions of elements, variables or factors to be measured or addressed by the research. The goal of conceptual framework will be to categorize and describe concepts relevant to the study and map relationships among them. Figure 1 shows how moderating and extraneous variables influence independent variables effect on dependent variable.

Extraneous variables are those variables that affect the outcome of a research study either because the researcher was not aware of their existence or, if the researcher was aware, she or he does not control them (Mugenda and Mugenda, 1999). Extraneous variables are not related to the purpose of the study, but may affect the dependable variable (Kothari, 2004)

## **2.8 Knowledge gap**

Literature review has shown that mechanization will improve farmers performance through increased production, increased efficiency and human productivity, low cost of labour to Farmers, solving the problem of labour shortage and increased farm income.. At Kaptumo tea factory farmer's performance is below their potential.

The research therefore intended to explore the extent to which each of the factors is influencing farmers performance at Kaptumo tea factory thus filling the knowledge gap. The research has also aided in bridging the knowledge gap by comparing what will be known elsewhere and what is established at Kaptumo Tea Factory.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

The chapter details the study methodology by giving the research design and the target population. Also explained is the sampling procedure, sample size, data collection instruments to be used and how the data was analyzed and presented. Reliability and validity of instruments are included and there is a section on ethical considerations. The table operationalizing the variables has been given at the end.

#### **3.1 Research Design**

The research was guided by descriptive survey research design. Kothari (2004) states that the major purpose of descriptive research is description of the state of affairs as it is seen at the present. Descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual or of a group. Stratified random sampling was used to achieve the desired representation from the various sub groups in the population.

#### **3.2 Target Population**

The target population were the tea farmers who supply their green leaf tea to Kaptumo Tea Factory which is a satellite of Chebut tea factory Co.ltd in Nandi county. Kaptumo Tea Factory is located in Kaptumo location, Kaptumo division, Nandi South sub county, Nandi County. This is about 85 Kilometers from Eldoret town along the Kapsabet-Kobujoi-Chavakali road. It is approximately 340 kms West of Nairobi. The target population for this study was drawn from six (6) Zonal areas of the tea factory. The farmers from these regions formed the target population for this study.

### 3.3 Sampling procedure and sample size

Stratified random sampling was used to achieve the desired representation from the various sub groups in the population. Stratified sampling technique was applied in order to obtain a representative sample Orodho (2004).

Kaptumo Tea Factory Co. Ltd is divided into six administrative boundaries referred to as electoral areas or Zones each zone represented by a policy maker (director). The target population was thus divided into the six electoral areas, further the sample for each electoral area was divided by the number of buying centers in the electoral area. Using random numbers the stratified sample size was selected.

The population is divided into six electoral areas for administrative purposes, with each electoral area having an average of 1013 farmers.

**Table 3.1: Sample size**

<b>Respondents</b>	<b>Total Population</b>	<b>Percentage (100%)</b>
Siginuai Zone	980	16
Kaptumo Zone	1060	17
Chepkaos Zone	1160	18
Kipkenyo Zone	820	13
Koyo Zone	850	14
Ndurio Zone	1200	19
Factory directors	6	1
Agriculture extension officer	3	1
<b>Total</b>	<b>6079</b>	<b>100</b>

**Source : Kaptumo KTDA Tea Factory Records (2022)**

### 3.4 Sample size and Sampling Procedure

A probability sampling mechanism was employed in the study due to its lack of bias and its lack of systematic error. It helps to create a properly representative sample of the population and produces extremely dependable research results (Acharya, Prakash, Saxena, & Nigam, 2013).

Systematic random sampling technique was used to select 375 respondents. Only the family heads were chosen to participate in the study, the researcher was well aware that either gender can be a head of the



household which was conducted every nth home. According to (Bajpai, 2010), systematic sampling is convenient, cost-effective, and time-efficient. A census of the target population of chiefs, assistant chiefs, and deputy commissioners were undertaken.

### 3.4.1 Sample Size

To determine the size of the sample used, the Yamani Taro (1967) formula was used. It states that the desired sample size is a function of the target population and the maximum acceptable margin of error (also known as the sampling error) and it expressed mathematically thus:

$$n = \frac{N}{1 + Ne^2}$$

Where; n = Sample size

N = target population

e = maximum acceptable margin of error (5%)

Thus: N = **6079**

$$n = \frac{6079}{1 + 6079 (0.05)^2}$$

n = 375 respondents

The sample size was then be 375 which included respondents from six (6) Tea Zones namely Siginuai Zone, Kaptumo Zone, Chepkaos Zone, Kipkenyo Zone, Koyo Zone, Ndurio Zone, factory directors and Agriculture extension officers. Bryman and Bell (2015) propose a rule of the thumb for determining a sample size of 30 to 500 is appropriate for most academic researches but there is no fixed number of percentages of subjects that determine the size of adequate sample. To them, the ideal sample is “large enough to serve as an adequate representation of the population about which the researcher wishes to generate and small enough to be selected economically in terms of time and money and complexity of analysis. The sample size distribution was as shown in Table 3.2.

**Table 3.2: Sample size**

<b>Respondents</b>	<b>Total Population</b>	<b>Ratio</b>	<b>Sample Size</b>
Siginuai Zone	980	0.06168	60
Kaptumo Zone	1060	0.06168	65
Chepkaos Zone	1160	0.06168	71
Kipkenyo Zone	820	0.06168	51
Koyo Zone	850	0.06168	52
Ndurio Zone	1200	0.06168	73
Factory directors	6	0.06168	2
Agriculture extension officer	3	0.06168	1
<b>Total</b>	<b>6079</b>		<b>375</b>

### **3.4.2 Sampling Procedures**

The study selected the respondents using stratified proportionate random sampling technique. Stratified random sampling is unbiased sampling method of grouping heterogeneous population into homogenous subsets then making a selection within the individual subset to ensure representativeness. The goal of stratified random sampling is to achieve the desired representation from various sub-groups in the population. In stratified random sampling subjects are selected in such a way that the existing sub-groups in the population are more or less represented in the sample (Bryman & Bell, 2015). The study used simple random sampling to pick the respondents in each stratum by use of simple random numbers.

### **3.5 Data collection instruments**

Data was collected from the Factory where primary data on total production of the over 6000 farmers is kept while a questionnaire was used to collect data from the household heads. The study used primary data which was both qualitative and quantitative. The data was collected through administration of questionnaires. The questionnaires used captured the various variables of the study and has both open and closed ended questions covering issues on how to improve income of small holder tea farmers at Kaptumo Tea Factory Co. Ltd. through mechanization. The study has one set of questionnaires which was administered by research Assistants. The questions were divided into four sections A and B. Section

A demographic details. Section B what they think about mechanization to increase their production and included increased production, increased efficiency and human productivity, lowering cost of labor to Farmers, solving the problem of labour shortage and increased farm income.

Section C sought to know the production details of the respondents and answers of tea bushes owned, production in kilograms for the year 2017/2018, use of labor for tea plucking and sources of income of the Respondents.

### **3.6 Validity of instruments**

Validity is the accuracy and meaningfulness of inferences, which are based on the research results. In other words, validity is the degree to which results obtained from the analysis of the data actually represent the phenomenon under the study. Validity, therefore, has to do with how accurately the data obtained in the study represents the variables (Mugenda & Mugenda, 2003).

The Researcher validated the data collection tools used in this study. External validity which is the extent to which the results of the study can be generalized from a sample to a population. Sampling procedures were followed to avoid bias in the sample taken. Establishing external validity for an instrument, then, follows directly from sampling. An instrument that is externally valid helps obtain population generalizability, or the degree to which a sample represents the population. (Denzin & Lincoln, 2005)

Content validity refers to the appropriateness of the content of an instrument. In other words, do the measures (questions, observation logs, etc.) accurately assess what you want to know? (Denzin & Lincoln, 2005). The questionnaires were validated for appropriateness by applying theoretically derived hypotheses involving the concept under consideration through the theoretical framework of the study.

### **3.7 Reliability of instruments**

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. Reliability in research is influenced by random error (Mugenda & Mugenda, 1999). Testing of the questionnaire for reliability was done using the split-half technique where the questionnaire administered to 10 randomly sampled households.

The questionnaires was piloted in another zone that did not take part in this study. From the sample were randomly labeled and separated for odd and even numbering. The reliability of the instruments was tested by calculating correlation of odd and even items separately and using t-function of spearman-grown-

prophesy formulae. The reliability half of the scores was 0.802 on half of the scores. According to Orodho (2004) a correlation coefficient of about 0.8 should be considered strong enough to judge the instrument as reliable for the study;

Reliability of score on total tests =  $2 \times$  reliability for  $\frac{1}{2}$  test

$1 +$ reliability for  $\frac{1}{2}$  test

$= 2 \times 0.802$

$1 + 0.802$

$R = 0.89$

R is the quantitative measure of reliability on a scale of 0 to 1, such that as r tends to 1, the stronger the reliability and vice versa.

### **3.8 Data analysis and presentation**

The raw data collected from the questionnaires was systematically organized in a manner as to facilitate analysis. Where quantitative data was collected numbers were assigned for the possible responses, for example where the response is a No or Yes numbers 1 and 2 were assigned for the responses respectively. Where the responses received were for open ended questions unique numbers to categorized responses were assigned. The data was entered into the statistical package for social scientists (SPSS) and analyzed. Means and standard deviations were used to describe interval data of the Respondents characteristics for example, income, while Frequency and percentages were used to describe ordinal data like education level.

### **3.9 Ethical considerations**

The Researcher observed research ethics by following the procedure outlined by the University of Nairobi and by seeking permission from relevant authorities before carrying out the study. Honesty, integrity and confidence was maintained throughout the study. Information the Respondents wished to know about the study was given and truthfulness maintained. All the information quoted in this document will be referenced to the source by acknowledging the Author.

### 3.10 Operationalization of variables

Table 3.1: Operationalization of variables

Research Objective	Variable	Indicators	Scale	Tools of Analysis	Analysis type	Presentation of tools of analysis
To determine the influence of stakeholder engagement in initiation on implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers Nandi south sub county.	<b>Independent:</b> stakeholder engagement in project initiation	<ul style="list-style-type: none"> <li>• Project charter</li> <li>• Project conception</li> <li>• Stakeholder identification</li> </ul>	Nominal	Qualitative Quantitative	Descriptive	<ul style="list-style-type: none"> <li>-Board of directors</li> <li>-Factory</li> <li>-Management</li> <li>-Research committees</li> <li>-Extension officers</li> <li>-Few selected farmers per electoral zone</li> </ul>
To establish the influence of stakeholder engagement in project planning on implementation of agricultural mechanization project: a case of tea harvesting	<b>Independent:</b> Stakeholder Engagement in Project Planning	<ul style="list-style-type: none"> <li>• Scope and budget</li> <li>• Work breakdown schedule</li> </ul>	Nominal	Qualitative Quantitative	Descriptive	<ul style="list-style-type: none"> <li>-Board of directors</li> <li>-Factory</li> <li>-Management</li> <li>-Extension officers</li> <li>-Few selected farmers per</li> </ul>

Research Objective	Variable	Indicators	Scale	Tools of Analysis	Analysis type	Presentation of tools of analysis
among KTDA smallholder farmers Nandi south sub county.		<ul style="list-style-type: none"> <li>• Communication plan</li> <li>• Risk management</li> </ul>				electoral zone
To assess the influence of stakeholder engagement in execution of the project on implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers Nandi south sub county.	<b>Independent:</b> Stakeholder Engagement in execution of the Project	<ul style="list-style-type: none"> <li>• Kpis</li> <li>• Quality</li> <li>• Forecasts</li> </ul>	Nominal	Qualitative Quantitative	Descriptive	-Board of directors -Factory Management -Extension officers -Few selected farmers per electoral zone
To establish the influence of stakeholder engagement on monitoring and evaluation on implementation of	<b>Dependent:</b> Stakeholder Engagement in Project monitoring and evaluation	<ul style="list-style-type: none"> <li>• Objectives</li> <li>• Costs tracking</li> <li>• Performance</li> </ul>	Ordinal	Qualitative Quantitative	Descriptive	-Board of directors -Factory -Management -Extension officers

<b>Research Objective</b>	<b>Variable</b>	<b>Indicators</b>	<b>Scale</b>	<b>Tools of Analysis</b>	<b>Analysis type</b>	<b>Presentation of tools of analysis</b>
agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers Nandi south sub county.		<p>erman ce</p> <ul style="list-style-type: none"> <li>• Valuations</li> <li>• Reporting</li> </ul>				-Few selected farmers per electoral zone

# CHAPTER FOUR

## DATA ANALYSIS, PRESENTATION AND INTERPRETATION AND DISCUSSION

### 4.0 Introduction

This chapter covers findings in accordance with the objectives. The sections include: response rate, reliability, background information, findings Made, practices in implementation of Agriculture mechanization project.

### 4.1 Response Rate

This was ascertained through computation of the response rate to know whether it was sufficient to proceed with analysis and results were as displayed in Table 4.1. A response rate of 75 percent is sufficient to proceed with the data analysis and to adduce relevant conclusions and recommendations in this study (Kothari, 2004).

**Table 4.6: Response Rate**

	Frequency	Percentage
Response	300	75
Non response	75	25
Total	375	100

Findings in Table 4.1, unveil that from 375 questionnaires issued, 300 were fully completed and returned giving a response rate of 75%. This showed a substantial return rate for statistical analysis because it is above 50% which is recommended by Kothari (2004).

### 4.2 Demographic Information of the Respondents

The section highlights demographic data of participants such as gender, years of experience in agricultural practices, educational level, main occupation, the organization they work for and the sector they represent.

#### 4.2.1 Gender of the Respondent

Participants stated their gender and results are as tabulated in Table 4.2.



**Table 4.7: Gender of Respondents**

	Frequency	Percentage
Male	155	52
Female	145	48
Total	300	100

As per Table 4.2, majority of participants were male 52%, whereas 48% were female. This implies that all participants were considered in gathering data irrespective of their gender.

#### **4.2.2 Respondents age bracket**

The respondents were to indicate years of experience in their current organization and responses illustrated in Table 4.3.

**Table 4.8: Age bracket**

Age bracket	Frequency	Percentage
Below 25 years	5	2
26-35 years	25	8
36-45 years	60	20
46-55 years	90	30
Above 55 years	120	40
Total	300	100

In Table 4.3, most of participants are above 46 years working in their current organization as shown by 40%. Other respondents indicated that years of working in their current organization was 46-55 years as shown by 30%, 36-45 years as shown by 20%, 26 - 35 years indicated by 8% and below 25 years indicated by 2%. This implies that most of participants had been working in their current organization for long enough to accurately share adequate and credible information regarding the topic being studied.

This scenario indicates that most farmers here in Kaptumo Tea Factory are middle aged. These results are consistent with other studies that place African farmers at a mean age of 55 years. (Muyanga & Jayne 2014).

### 4.2.3 Highest Academic Qualification

The researcher asked the participants to show highest education level reached. The findings are tabulated in Table 4.4.

**Table 4.3: Highest Academic Qualification of the Respondents**

Academic Qualification	Frequency	Percentage
Primary schooling	210	70
O level	40	13
Diploma	30	10
Graduate Degree	12	4
Postgraduate	8	3
Total	300	100

In Table 4.4, majority of participants stated that their highest academic qualification was primary schooling indicated by 70%. Other participants pointed out that the highest academic qualification attained was O level as indicated by 13%, Diploma as shown by 10% , graduate degree as shown by 4 % and post graduate Level as shown by 3%. This indicates that all the respondents were learnt enough and thus they were able to gain knowledge on aspects being investigated.

### 4.2.4 Main Occupation

The researcher asked the participants to point out what is their main occupation. The findings are displayed in Table 4.5.

**Table 4.9: Farmers other Main Occupation**

Occupation	Frequency	Percentage
Employed by government Employed in public sector	30	10
Self-employed	250	83
Employed by government [ ] Employed in private sector	20	7
Total	300	100

In Table 4.5, most of participants pointed out that they were self employed as illustrated by 83%, followed by those employed in public sector illustrated by 10% and finally those employed in private sector illustrated by 7%. This implies that most of the participants had considerable profession that puts

them in a better position to give credible data on effect of M&E practices on implementation of agricultural mechanization project at Kaptumo Tea Factory.

#### 4.2.5 Zones Represented by the Respondents

The researcher asked the respondents to show their Zones within Kaptumo Tea factory and they gave their responses as shown in Table 4.6. The findings are presented in Table 4.6.

**Table 4.6: Respondents Zones**

<b>Respondents Zones</b>	<b>Sample Size</b>	<b>Response</b>	<b>Percentage</b>
Siginuai Zone	60	49	16
Kaptumo Zone	65	60	20
Chepkao Zone	71	70	23
Kipkenyo Zone	51	50	17
Koyo Zone	52	40	13
Ndurio Zone	73	29	10
Factory directors	1	1	0.5
Agriculture extension officer	1	1	0.5
<b>Total</b>	<b>375</b>	<b>300</b>	<b>100</b>

In Table 4.6, participants indicated that they represent project zones of Siginuai as shown by 16%, Kaptumo zone as shown by 20%, Chepkao zone as shown by 23%, Kipkenyo zone as shown by 17%, Koyo zone as shown by 13% and Ndurio zone as shown by 10%. This shows that the respondents zones were well represented in this study.

This clearly shows that majority of farmers came from Chepkao zone as shown by 23% while the least of the farmers came from Ndurio zone as shown by 10%.

### 4.3 Stakeholder involvement in initiation and implementation of agricultural mechanization projects

This section deals with the first objective of this study that stated to examine the influence of Stakeholder involvement in initiation on implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers. The participants were queried to rate the implementation of Agricultural Mechanization Projects using 1 to 5 Likert scale where 1 is not at all, 2= little extent, 3= moderate extent, 4= great extent; and 5= very great extent.

**Table 4.7: Project Implementation on Project Initiation and Implementation of Agricultural Mechanization Projects**

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent	Mean	Standard deviation
To what extent were you involved in need analysis in tea picking machines?	1(0.03)	2(1)	67(22.3)	64(21.3)	166(55.3)	4.30	1.35
To what extent were you involved in the preparatory meetings for this project?	13(4.3)	12(4)	64(21.3)	54(18)	157(52.3)	4.10	1.56
To what extent were you involved in project initiation in tea picking machines?	12(4)	12(4)	65(21)	155(52)	56(19)	3.77	1.48
To what extent were you involved in project planning of tea picking machines?	1(0.4)	4(1.3)	137(46)	144(48)	14(4.3)	3.55	1.00
To what extent were you involved in proposal development	15(5)	14(5)	22(7)	180(60)	69(23)	3.91	1.91
<b>Composite Mean and Std. deviation</b>						3.93	1.46

In Table 4.7, most 166(55.3%) of participants involved in need analysis was very great extent, followed by 64(21.3%) that was great extent, 67(22.3%) that were moderately and 2(1%) that were little involved.

The statement records a mean of 4.30 and a std. dev of 1.35 which was higher than composite mean score of 3.93 and a std. dev of 1.46.

In addition, most 157(52.3%) of participants involved in preparatory meetings was very great extent, followed by 64(21.3%) that was moderately extent, 54(18%) that were great extent. The statement records a mean of 4.10 and a std. dev of 1.56 which was higher than composite mean score of 3.93 and a std. dev of 1.46.

Furthermore, most 155(52%) of participants involved in project initiation was great extent, followed by 65(21%) that was moderately extent, 56(19%) that were very great extent. The statement records a mean of 3.77 and a std. dev of 1.48 which was higher than composite mean score of 3.93 and a std. dev of 1.46.

Also, most 155(52%) of participants involved in project initiation was great extent, followed by 65(21%) that was moderately extent, 56(19%) that were very great extent. The statement records a mean of 3.77 and a std. dev of 1.48 which was higher than composite mean score of 3.93 and a std. dev of 1.46.

Lastly but not least most 144 (48%) of participants involved in project planning was great extent, followed by 137(46%) that was moderately extent, 14(4.3%) that were very great extent. The statement records a mean of 3.55 and a std. dev of 1.00 which was lower than composite mean score of 3.93 and a std. dev of 1.46.

Finally, most 180(60%) of participants involved in proposal development was great extent, followed by 69(23%) that was very great extent and 22(7%) that were moderately extent. The statement records a mean of 3.91 and a std. dev of 1.91 which was lower than composite mean score of 3.93 and higher than std. dev of 1.46.

One of the farmers had this to say;

*I was consulted, they came to me and told me the benefits of the new tea picking machines before they brought them, they told me that the quality of our tea will improve and attract better prices*

These findings agree with Azimi and Rahmani (2013) who undertook a study in India on Importance of needs assessment for Implementation of E-learning in Colleges of Education and found that E-learning needs assessment played an important role in analyzing e-learning system's components for implementation of college education. These findings also agrees with Kihuga(2018) who undertook a study on Project initiation process, monitoring and evaluation team capacity, and compliance with legal framework on building projects success in Roysambu Constituency, Nairobi done by He found out that all phases of project life cycle are ideal and determining factor for the success of project at large.

It also concurs with Abdi (2020) study which involves Project Planning and Implementation of Safaricom Limited projects in Mombasa County, Kenya. He realized that most of the project managers accord communication management as an important role that aims to improve project implementation. The study concluded that competent project team, adequate staffing, training and development and adequate remuneration are significant in explaining changes in project implementation.

#### **4.4 stakeholder engagement in planning and implementation of agricultural mechanization project**

This is the second objective of this study that sought to determine the influence of stakeholder engagement in planning and implementation of agricultural mechanization projects.

**Table 4.10: Stakeholder involvement in Project Planning and Implementation of Agricultural Mechanization Projects**

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent	Mean	Standard deviation
I was involved in the planning of this project	1(0.4)	22(7)	67(22.3)	64(21.3)	146(49)	4.11	1.00
I was trained in project management	13(4)	15(5)	66(22)	84(28)	122(41)	3.96	0.24
I was consulted on daily basis on this project	12(4)	12(4)	65(22)	178(59)	33(11)	3.69	1.75
I was informed of all the plans in planning this project	3(1)	4(1.3)	130(43.3)	144(48)	19(6.3)	3.57	1.00
I attended all meetings called in planning this project	10(3)	14(5)	22(7)	185(62)	69(23)	3.96	1.74
<b>Composite Mean and Std. deviation</b>						3.86	1.15

In Table 4.8, most 146(49%) of participants involved in project planning was very great extent, followed by 67(22.3%) that were moderate extent, 64(21.3%) that were great extent and 22(7%) that were little involved. The statement records a mean of 4.11 and a std. dev of 1.00 which was higher than composite mean score of 3.86 and lower than a std. dev of 1.15.

In addition, most 122(41%) of participants trained in project management was very great extent, followed by 84(28%) that was great extent, 66(22%) that were moderate extent and 15(5) that were little trained in project management. The statement records a mean of 3.96 and a std. dev of 0.24 which was higher than composite mean score of 3.93 and lower than a std. dev of 1.46.

Furthermore, most 178(59%) of participants involved in project consultation was great extent, followed by 65(22%) that was moderately extent, 33(11%) that were very great extent. The statement records a mean of 3.69 and a std. dev of 1.75 which was lower than composite mean score of 3.93 and higher than a std. dev of 1.46.

Also, most 144(48%) of participants informed of all the project plans in project initiation was great extent, followed by 130(43.3%) that was moderately extent, 19(6.3%) that were very great extent. The statement records a mean of 3.57 and a std. dev of 1.00 which was lower than composite mean score of 3.93 and a std. dev of 1.46.

Finally, most 185(62%) of participants attended all meetings was great extent, followed by 69(23%) that was very great extent and 22(7%) that were moderately extent. The statement records a mean of 3.96 and a std. dev of 1.74 which was higher than composite mean score of 3.93 and std. dev of 1.46.

One of the respondents confirmed these statements by stating that

*I was involved in the planning of this project; I was also trained and fully consulted before this project kicked off.*

These findings concur with Macharia, and Gakobo, (2017) study that involved Project Management and Implementation of Public Projects in Technical, Industrial, Vocational and Entrepreneurship Training Institutes in Nairobi County, Kenya that sought to examine the influence of project planning, project feasibility, government support and project monitoring and control on public projects implementation in TIVET institutions in Nairobi County, Kenya. It also agrees with Igwe, and Ude, (2018) that involves Project Planning and Implementation in Nigeria: Revisiting International Best Practices that sought to explore the current issues around project planning and implementation in Nigeria's public sector vis-à-vis international best practices.

In addition to Abdi, M.R (2020) that involves Project Planning and Implementation of Projects by Safaricom Limited in Mombasa County, Kenya that aimed to establish the effect of project planning on implementation of project in Safaricom limited in Mombasa County, Kenya. The study specific objectives were to establish the effect of communication management, personnel management, stakeholder's involvement and resource planning on the project implementation by Safaricom limited in Mombasa County.

#### **4.5 Stakeholder Engagement in execution and agricultural mechanization**

This was the third objective of this study and it sought to explore on the influence of Stakeholder Engagement in execution on agricultural mechanization



**Table 4.9: Stakeholder Engagement Project Execution and Implementation of Agricultural Mechanization Projects**

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent	Mean	Standard deviation
I was involved in the execution of this project	10(3)	15(5)	66(22)	84(28)	125(42)	4.00	0.24
I was trained in project execution	12(4)	15(5)	65(22)	178(59)	30(10)	3.66	1.78
I was consulted on daily basis on this project execution	4(1.3)	3(1)	130(43.3)	144(48)	19(6.3)	3.57	1.00
I was informed of all the plans in execution this project	14(5)	10(3)	22(7)	185(62)	69(23)	3.95	1.74
<b>Composite Mean and Std. deviation</b>						3.04	1.00

In Table 4.9, most 125(42%) of participants involved in project execution was very great extent, followed by 84(28%) that was great extent, 66(22%) that were moderately extent and 15(5%) that were little involved in project execution. The statement records a mean of 4.00 and a std. dev of 0.24 which was higher than composite mean score of 3.93 and lower than a std. dev of 1.46.

In addition, most 178(59%) of participants trained in project execution was great extent, followed by 65(22%) that was moderately extent and 30(10%) that were very great extent. The statement records a mean of 3.66 and a std. dev of 1.78 which was lower than composite mean score of 3.93 and higher than a std. dev of 1.46.

Furthermore, most 144(48%) of participants consulted on daily basis was great extent, followed by 130(43.3%) that was moderately extent and 19(6.3%) that were very great extent. The statement records a mean of 3.57 and a std. dev of 1.00 which was lower than composite mean score of 3.93 and a std. dev of 1.46.

Finally, most 185(62%) of participants informed of all plans was great extent, followed by 69(23%) that was very great extent and 22(7%) that were moderately extent. The statement records a mean of 3.95 and a std. dev of 1.74 which was higher than composite mean score of 3.93 and higher than std. dev of 1.46.

One of the respondents said this;

*I was informed of all the plans in execution this project*

These findings concur with a study by Ashok, Biswajit, and Jibitesh (2011) which involved Structured Approach to Project Execution, Monitoring & Control at Operational Level that examined the proposed subjective evaluation as a means to determine index for activity criticality for selective monitoring and control, index for readiness level for starting execution of an activity, and a structured way to sort out issues for execution of activities. Also it in line with Steyn, and Nicolas that involved Project Execution that entails Expanding the project team, Assigning responsibilities, Task integration, Documentation, Change control, Quality control, Production coordination, Inventory control for the success of the project.

They also agrees with Njau and Omwenga (2019) that involved effect of Project Management Practices on Effective Implementation Of Building Construction Projects In Kenya. The study entailed the management of firms undertaking building construction projects to set up rules and regulations that will guide the adoption of these management practices in order to effectively implement the projects they undertake. They should make objectives that incorporate these practices. The study also apprehended that the agents regulating the firms undertaking building construction projects to formulate policies that will ensure that proper management practices are adopted in these firms. They can also support the firms by providing training programs for the management to train on these aspects.

#### 4.6 Stakeholder engagement in monitoring and evaluation and implementation of agricultural mechanization

This was the fourth and last objective of this study and targeted to understand the influence of stakeholder engagement in monitoring and evaluation and implementation of agricultural mechanization projects.

**Table 4.10: Stakeholder engagement in Project Monitoring and Evaluation and Implementation of Agricultural Mechanization Projects**

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent	Mean	Standard deviation
To what extent did you take part in information gathering in this project?	17(5.7)	19(6.3)	67(22.3)	64(21.3)	133(44.3)	3.92	1.00
To what extent were you involved in information sharing in this project?	12(4)	12(4)	45(15)	116(38.7)	115(38.3)	4.03	0.34
To what extent were you engaged in tracking resources for this project?	20(6.7)	25(8.3)	55(18.3)	166(55.3)	34(11.3)	3.56	2.00
To what extent were you engaged in evaluating progress of this project?	4(1.3)	3(1)	130(43.3)	144(48)	19(6.3)	3.57	1.00
<b>Composite Mean and Std. deviation</b>						3.02	1.00

In Table 5.0, most 133(44.3%) of participants who took part in information gathering was very great extent, followed by 67(22.3%) that was moderate extent, 64(21.3%) that were great extent and 19(6.3%) that were little involved. The statement records a mean of 3.92 and a std. dev of 1.00 which was lower than composite mean score of 3.93 and a std. dev of 1.46.

In addition, most 116(38.7%) of participants involved in information sharing of the project was great extent, followed by 115(38.3%) that was very great extent and 45(15%) that were moderately extent. The statement records a mean of 4.03 and a std. dev of 0.34 which was higher than composite mean score of 3.93 and lower than a std. dev of 1.46.

Furthermore, most 166(55.3%) of participants engaged in tracking the resources was great extent, followed by 34(11.3%) that was very great extent and 55(18.3%) that was moderate extent. The statement records a mean of 3.56 and a std. dev of 2.00 which was lower than composite mean score of 3.93 and higher than a std. dev of 1.46.

Finally, most 144(48%) of participants engaged in evaluating the progress of the project was great extent, followed by 130(43.3%) that was moderately extent and 19(6.3%) that was very great extent. The statement records a mean of 3.02 and a std. dev of 1.00 which was lower than composite mean score of 3.93 and a std. dev of 1.46.

One of the respondents' explained that

***I was engaged in evaluating progress of this project?***

These findings were in line with Kusek, and Rist (2004) study that involved efficient monitoring and evaluation system) is a powerful public management tool that can be used to improve the way governments and organizations achieve results. Just as governments need financial, human resource, and accountability systems, governments also need good performance feedback systems. Also it concurs with Chaplowe, (2008) study that involved Monitoring and Evaluation Planning concerns the overall goal or desired change or effect, the main beneficiaries or audience that the project seeks to benefit, the hypotheses or assumptions that link the project objectives to specific interventions or activities, the project scope and size.

These findings are in line with Jinabhai (2007) study concerning Planning, Monitoring and Evaluation for Results Evaluation for Results-Based Strategies that involves helping programme implementers to: Determine the extent to which the programme/project is on track and to make any needed corrections accordingly; Make informed decisions regarding operations management and service delivery; Ensure the

most effective and efficient use of resources; Evaluate the extent to which the programme/project is having or has had the desired impact.

#### **4.7 Summary of findings**

The findings from this study are very critical in support of the agricultural mechanization efforts of the Kenya Tea development Authority among small scale farmers in Kenya and more importantly in Kaptumo Tea factory in Nandi County, Kenya. The findings in this study seems interesting in terms there is an explanation emerging that the farmers were initial involved in the entire project implementation in some aspects but a decline in involvement was witnessed. This finding is consistent with other scholars previously who have seen a decline in stakeholder engagement in a project with time.

This study has clearly seen a decline in stakeholder involvement starting from research question number one to four namely;

- i. How does stakeholder engagement in initiation influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- ii. How does stakeholder engagement in planning influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- iii. How does stakeholder engagement in execution influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya
- iv. How does stakeholder engagement in monitoring and evaluation and evaluation influence implementation of agricultural mechanization initiatives: A case of tea harvesting machines project at Kaptumo Tea Factory, Nandi County, Kenya.

This is consistent with composite means of 3.93, 3.86, 3.04 and 3.02 respectively. This clearly shows some element of project fatigue. Project fatigue in project planning terms means that stakeholders in a project start to lose interest in a project gradually during the project implementation. This can be a sorry state of the project and can lead to serious repercussions that may obscure a project in realizing its key mandates as stated in the project objectives.

## **CHAPTER FIVE**

### **5.0 SUMMARY OF FINDINGS, CONCLUSION & RECOMMENDATIONS**

#### **5.1 Introduction**

The main purpose of this study was to determine influence of influence of stakeholder engagement on implementation of agricultural mechanization among KTDA smallholder farmers at Kaptumo Tea Factory. This chapter covers summary, discussion of findings, conclusions and recommendations as per the objectives.

#### **5.2 Summary of Findings**

This section deliberates on summary of findings for performance of stakeholder engagement on implementation of agricultural mechanization among KTDA smallholder farmers at Kaptumo Tea Factory in Nandi County, Kenya.

##### **5.2.1 Project Initiation and implementation of Agriculture Mechanization Project**

Regarding the performance of Agriculture Mechanization Project, the study assessed the indicators such as Project initiation, planning, execution and monitoring and evaluation. Respondents indicated that level of project initiation increased (55%). The indicator attained higher mean score than composite mean score of 3.93 and a std. dev of 1.35

The mean of 4.30 implied that responses were not varied and participants agreed that project initiation was an indicator of high performance of Agriculture mechanization project at Kaptumo Tea Factory. Further, respondents indicated that acceptance of project planning and implementation has increased (62%) The indicator attained higher mean score of 3.96 than composite mean score of 3.86 and a std. dev of 1.74 implying this was an indicator of Agriculture mechanization project at Kaptumo Tea Factory. Finally, respondents indicated that achievement of project objectives has highly increased (45.9%). All these indicators recorded a high performance despite slight changes in the standard deviation implying the good progress of the project. This infers that the statement indicated a high performance of Agriculture Mechanization project at Kaptumo Tea Factory.

### **5.2.2 Project planning and implementation of Agricultural Mechanization**

The research purposed to establish the influence of project planning on performance of agriculture mechanization projects at Kaptumo Tea Factory. Respondents indicated that organizations conducting this project have M and E plan in place (55.3%). Respondents strongly agreed that the project plans contained planning process (62%) and agreed that that the planning was well elaborated and utilized (60%). These statements attained a higher mean than the composite mean of 3.86 and std. dev of 1.15, inferring that they are positive indicators of the implementation of agricultural mechanization project at Kaptumo Tea factory. Respondents also strongly agreed that planning process informs decision making in project implementation (55%), strongly agreed that the planning process helps to determine the budget for M and E (55.3%) and agreed that the project is able to develop control mechanism to keep project resources on track (47.1%). The study also found that M and E planning helps in implementation of the projects in the organization and analyses the project strengths, weakness, opportunities and threats (SWOT) at every target of the project span.

### **5.2.3 Project Execution and implementation of Agriculture Mechanization Project**

The study further sought to find out how project execution influences performance this project at Kaptumo Tea Factory. Respondents strongly agreed technical skills is a major determinant on how execution is done (59.3%) and strongly agreed that project training needs analysis is done to ensure that the staff acquire the correct skills to carry out execution (59.3%) in line with the project expectations. The line statements had attained higher mean score than composite mean score of 3.04 and std. dev of 1.00, inferring that the line statements influenced performance of Agriculture Mechanization Project at

Kaptumo Tea Factory. Further, respondents agreed that the project staff are sufficiently trained and have the required skills to carry out M and E (55.3%) and agreed that the project design is flexible to achieve project goals (57%). The study further established that M and E expertise help predict possible challenges and address them or prepare for them beforehand and plays a role in evaluating project process and developing ways of reporting and projecting information.

#### **5.2.4 Project M and E and implementation of Agriculture Mechanization Project**

The research sought to examine the influence of M and E practices on performance of Agriculture Mechanization Project at Kaptumo Tea Factory. Respondents strongly agreed that participation of stakeholders too is a reflection of society needs and triggers people's interests in the project M&E practices (55.3%) and agreed that involvement enables the stakeholders to influence project acceptance (59.3%). The line statements had attained higher mean score than composite mean score of 3.56 and std. dev of 2.0, implying that the line statement positively influenced performance of Agriculture Mechanization Project at Kaptumo Tea Factory. Further, the respondents agreed that stakeholders' analysis is undertaken to make sure that stakeholder take part in project monitoring (42.4%) and that stakeholder's feedback is well documented and analyzed for implementation (41.2%) and strongly agreed that community strategy is in place to address flow of information (37.6%). Further, the study found that community strategy is in place to address flow of information and that stakeholder's feedback is well documented and analysed for implementation. The study found that involving the surrounding community may create easy understanding of the whole project in addition to its M&E practises and know of what is expected as the final achievement.

#### **5.3 Conclusions**

The research concludes that stakeholder engagement at the initiation phase substantially influences implementation of agricultural mechanization project among farmers in Kaptumo Tea factory. Planning phase is very critical in the implementation of agricultural mechanization projects among smallholder tea farmers within the jurisdiction of KTDA. Further, Execution influences implementation of agricultural mechanization project, Moreso, Monitoring and evaluation influence implementation of agricultural mechanization project: a case of Mechanical tea harvesting among KTDA smallholder farmers in Kaptumo Tea Factory in Nandi county. Stakeholder engagement fatigue is evident in this study.



#### **5.4 Recommendations**

This research recommends that project managers in Kaptumo should continue enhancing the engagement with the communities for the success of agriculture mechanization project at Kaptumo Tea Factory. This ought to involve all phases of project lifecycle starting from initiation, planning execution and monitoring and evaluation. This will ensure projects are being implemented in a proper way for full utilization of new technologies.

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## APPENDIX I: INTRODUCTION LETTER

Betty Jepkemboi Koech,

P.O. Box 513-30300,

Kapsabet.

Tel. 0726967502.

Email-beautykoech@gmail.com.

TO WHOM IT MAY CONCERN

I am a student at the University of Nairobi taking a Master of Arts Degree in Project Planning and Management. I am currently undertaking a research project on: **“Influence of Stakeholder Engagement On implementation of Agricultural Mechanization Project: A Case Of Tea Harvesting Among KTDA Smallholder Farmers at Kaptumo Tea factory ”** I write to request you to fill the attached questionnaire and provide any further information that may be required for the purposes of the study.

Kindly note that all the information you will give will be confidential and will only be used for the study.

Thank you for your anticipated response.

Betty Jepkemboi Koech

## APPENDIX II: QUESTIONNAIRE

### Instructions

Kindly write your answers, tick or mark (✓) in the spaces provided in the questionnaire as appropriate.

### Section A: Background Information

1. What is your gender?

Male            [   ]                      Female            [   ]

2. What is your age bracket?

Below 25 years    [   ]

26-35 years        [   ]

36-45 years        [   ]

46-55 years        [   ]

Above 55 years    [   ]

3. What is your highest academic qualification?

O level            [   ]

Diploma           [   ]

Graduate Degree   [   ]

Postgraduate      [   ]

Other (specify) .....

4. What is your occupation?

Employed by government                      [   ]

Employed in private sector                    [   ]

Self-employed [     ]

unemployed [     ]

Student [     ]

Any other (specify) .....

**Section B: Project Initiation**

Do you think project initiation leads to successful implementation of tea picking machines?

Yes \_\_\_\_\_ No \_\_\_\_\_

In the following table, kindly rate using a scale of 1-5 where 1 is not at all and 5 is to a very great extent the statements in regard to project identification and planning.

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent
To what extent were you involved in need analysis in tea picking machines?					
To what extent were you involved in the preparatory meetings for this project?					
To what extent were you involved in project <del>init</del> in tea picking machines?					
To what extent were involved in project planning of tea picking machines?					
To what extent were you involved in proposal development					

### Section C: Project Planning

8. Do you think project planning leads to successful implementation of tea picking machines? Yes \_\_\_\_\_ No. \_\_\_\_\_

In the following table, kindly rate using a scale of 1-5 where 1 is not at all and 5 is to a very great extent the statements in regard to project execution.

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent
I was involved in the planning of this project					
I was trained in project management					
I was consulted on daily basis on this project					
I was informed of all the plans in planning this project					
I attended all meetings called in planning this project					



**Section D: Project Execution**

Do you think project execution leads to successful implementation of tea picking machines?

Yes \_\_\_\_\_ No. \_\_\_\_\_

In the following table, kindly rate using a scale of 1-5 where 1 is not at all and 5 is to a very great extent the statements in regard to project communication.

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent
I was involved in the execution of this project					
I was trained in project execution					
I was consulted on daily basis on this project execution					
I was informed of all the plans in execution this project					

**Section E: Project Monitoring and Evaluation**

Do you think project Monitoring and evaluation leads to successful implementation of tea picking machines? Yes \_\_\_\_\_ No. \_\_\_\_\_

Yes \_\_\_\_\_ No. \_\_\_\_\_

In the following table, kindly use a scale of 1-5 where 1 is not at all and 5 is to a very great extent to rate the statements in regard to project monitoring and evaluation.

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent
To what extent did you take part in information gathering in this project?					

To what extent were you involved in information sharing in this project					
To what extent were you engaged in tracking resources for this project?					
To what extent were you engaged in evaluating progress of this project?					

**Section F: Measurement of The Dependent Variable**

Indicate the extent to which the following independent variables influence implementation of the tea plucking machines in Kaptumo Tea factory

Statement	Not at all	Little extent	Moderate extent	Great extent	Very great extent
Project Initiation					
Project Planning					
Project Execution					
Project Monitoring and Evaluation					

Suggest ways in which participation in project implementation was enhanced.

.....

.....

.....

***THANK YOU FOR YOUR PARTICIPATION***

### **Appendix III: Interview Schedule**

The researcher will conduct an interview guided by the following questions:

- i. How does stakeholder engagement in initiation influence implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers
- ii. How does stakeholder engagement in planning influence implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers
- iii. How does stakeholder engagement in execution influence implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers
- iv. How does stakeholder engagement in monitoring and evaluation and evaluation influence implementation of agricultural mechanization project: a case of tea harvesting among KTDA smallholder farmers