FACTORS INFLUENCING THE PERFORMANCE OF FLAGSHIP PROJECTS IN KENYA: THE CASE OF GALANA-KULALU FOOD SECURITY PROJECT IN KILIFI COUNTY

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DECLARATION

This research project report is my original work and has not been submitted to any other university or institution of higher learning for examination.

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DEDICATION

This research is dedicated to my late father, Murasi Mulupi Snr. Thank you for believing in me.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADCï Agricultural Development Corporation

APP ï Asian-Pacific Partnership

APPCDC ï Asia-Pacific Partnership on Clean Development and Climate

ASALsï Arid and Semi-Arid Lands

DD ï Development Design

DREï Deputy Resident Engineer

FAO ï Food and Agriculture Organization of the United Nations

FIFA ï *Fédération Internationale de Football Association*

FS ï Feasibility study

GERDï Grand Ethiopian Renaissance Dam

ISDï Instructional Systems Design

KALROï Kenya Agriculture and Livestock Research Organization

KEPHIS– Kenya Plant Health Inspectorate Services

KIPs– Key Performance Indicators

KWS– Kenya Wildlife Service

LAPSET ï Lamu Port -Southern Sudan-Ethiopia Transport Corridor

MDGs ï Millennium Development Goals

MP ï Master plan

O'level education ï Ordinary level education

NIB ï National Irrigation Board

PPOA ï Public Procurement Oversight Authority

PPP ï Public-private partnership

REAï Rural Electrification Authority

REï Resident Engineer

SGR ï Standard Gauge Railway

TARDA ï Tana and Athi Rivers Development Authority

ABSTRACT

Economic growth of any country is signaled by development of flagship projects.Kenyaôs Vision 2030 has outlined flagship projects addressing MDGs directly in critical sectors like agriculture. Despite the numerous flagship projects launched, many have not fulfilled the purpose of their initiation. The purpose of the study was to examine the factors influencing the performance of flagship projects in Kenya: the case of Galana-Kulalu food security project in Kilifi County.The study was guided by four objectives:to establish the extent to which resource management influences the performance of flagship projects in Kilifi County; to determine the extent to which the use of pre-feasibility assessment influences the performance of flagship projects in Kilifi County; to examine the extent to which financial stewardship influences the performance of flagship projects in Kilifi County; to find out how needs assessment influences the performance of flagship projects in Kilifi County. The study adopted a descriptive research design. The target population composed of employees and former employees of Galana-Kulalu food security project in different management levels from the Ministry of Water and Irrigation, Ministry of Agriculture, NIB and the contractor (Green Arava Company).A sample population of 92 was arrived at by calculating the target population of 120 with a 95% confidence level and an error of 0.05 using the Slovinôs Formula; see Almeda, Capistrano and Sarte (2010). The researcher selected respondents using a combination of simple random sampling and purposefully sampling technique. The study used a semi structured and structured questionnaire, interviews, and observation as the primary data collection tools. Data was analyzed using qualitative and quantitative methods. Chi-square was used to test research hypothesis and cross tabulation and correlation among variables was used to study relationships.The study aimed at establishing how resource management influences project performance of Galana-Kulalu food security project and found that resource management influence project performance in Galana-Kulalu food security project. Further, the study established that validity of feasibility and relevance of results of feasibility influence project performance in Galana-Kulalu food security project while reliability and accuracy of feasibility assessment did not. The study also revealed that financial steward ship influence project performance in Galana-Kulalu food security project same as stakeholder identification, stakeholder engagement and project ownership. The study established that project needs assessment does not influences project performance of Galana-Kulalu food security project. The study concluded thatexist small disputes among stakeholders affect full utilization of resources consequently influencing project performance in Galana-Kulalu food security project. Similarly, the study revealed discrepancies between the expected and the actual project outcome based on feasibility assessment results. Also, grey areas in financial stewardship such as failure in planning around emergencies. The study concluded that while stakeholders were adequately identified, there lacked proper stakeholder mapping. The study recommends that a greater involvement of host county governments of Kilifi and Tana River in the project activities especially that agriculture is a devolved function would move a long way in enhancing local stakeholder involvement in addition to resolving disputes on resource utilization and allocation. The project invests in critical amenities like health facilities, staff houses, a school and connection to the national grid as envisioned in the feasibility assessment. The government considers setting up a special fund at the treasury for the project in order to avoid the long bureaucracies at treasury for funds approval and release. Theproject leadership should find a way of enhancinginvolvement of the national project steering committee and the local coordinating committee in the project activities.

Key words: *Project performance; Flagship projects; Resource management; Feasibility assessment; Financial stewardship*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Vision 2030 is Kenyaôs new long-term development blueprint and captures the national's collective aspiration for a better society of the future. It aims to transform Kenya into an industrialized middle-income country providing a high quality of life to its citizens in a clean and secure environment. The Vision is attached to the Economic; Political; and Social Pillars. The vision has outlined flagship projects in each sector for implementation over the vision time in order to facilitate the desired growth which can support sustainable implementation of Millennium Development Goals (MDGs). Further, the vision has initiated projects addressing MDGs directly in sectors considered critical such as agriculture, health, water, education, and the environment. Galana-Kulalu food security project is one of the flagship projects under the Economic Pillar, under the Agriculture sector of the Vision 2010. The project is being implemented under the Arid and Semi-Arid Lands (ASAL) Development Projects. This project seeks to increase the area of ASAL under irrigation by 30%. Initially, it will be implemented in the Tana and Athi River basins where 600,000 - 1,000,000 Hectares will be put under irrigation.

Flagship projects are special projects that are strategically and scientifically defined for the purposes of research and development Anonymous (2013). Flagship projects are of substantial size considering their scientific and financial volume, running time and the number of project partners under the PPP arrangement in some cases. Flagship projects are a means through which actions are implemented in the priority areas so as to serve as pilot examples Mecklenburg Vorpommern (2017). Accordingly, they may be a means to developing new methodologies, new practices, key solutions, or forms of corporation. Moreover, these projects could be based on a set of projects within the same field or a single project standing independently.Flagship Projects serve two purposes: strengthening a branch or sector or to generate model solutions towards important challenges to the society. According to Anonymous (2013), these projects tend to create an awareness of the challenges among the general public by virtue of their specific and high level of importance.Flagship projects are seen to herald national and international visibility

for the countries technology.A study conducted by Spaans (2004) reveals that a number of European cities are struggling with a weakening economic base, leading to the formulation of a new profile for adoption. The new profile borders on implementation of multifunctional urban regeneration projects for the inner cities. The best example is the formulation of the urban renewal policy in the Netherlands Musterd & Ostendorf (2008), which saw the generation of many urban projects. Smith (2006) studying flagship urban projects propounds that most of them are implemented to enable cities compete favorably in the lucrative urban tourism industry. This trend began as early as 1908 when cities like Barcelona pursued a strategy to disseminate a new cosmopolitan image as opposed to its image then as an industrial city Monclus (2000).

Vila Vázquez (Ed.) (2010) alludes to the fact that flagship projects have a characteristic high social cost given their social substitution of the habitants in target place. As such they have failed in constituting veritable solutions to social problems bordering on mass population transfer. Besides, the cost of construction, maintenance and running of these projects is large. The logistics involved, contractual agreements, and procurement structures require enormous budgets, expertise, human capital and time Raco (2014). It is estimated that the flag ship project that was the London Olympics 2012 witnessed the drawing up of more than 43,000 contracts, in compliance with procurement laws and regulations and transparency in the tendering processLythaby and Mead (2011).

While studying the 18 flagship project portfolio and activities under the Asia Pacific Partnership and the endorsement of the Asia-Pacific Energy Technology Cooperation Centre (Asia Pacific Partnership, 2007; Fujiwara, 2007)concluded that like all other flagship projects, this Partnership was initially received with skeptism and cautious welcome among the EU proponents of the Kyoto Protocol and even in the US (Jeffords, 2006; Lieberman, 2006; Doniger, 2006) asserts that the projects kicked off amid persisting controversies and political interference.According to Del Grossi, França (2011), Brazil stands as a global benchmark in the areas of rural development, food security, and poverty eradication policies. This is attributed to theZero Hunger flagship project whose launch, despite being politically motivated, brought together both private and public efforts around a common objective: that of overcoming food and nutritional insecurity in Brazil as part of MDGs.

Planning of transportation megaprojects in Africa today often makes reference to the Gautrain Rapid Rail Project. This flagship Project brought with it immense benefits to South Africaôs Gauteng Province including reduced traffic congestion and creation of job opportunities. Nonetheless, these benefits, when weighed against the implications on social and political dynamics of the people, the project came under considerable criticism. Thus, the project risked deepening mobility-related exclusion in Gauteng province; there was growing perception among the local community that the project was an indication of bias in allocation of public funds where priority was accorded the affluent, as opposed to the poor neighborhoods; there had been significant cost overruns from initial estimates; and there was lack of sufficient consultation in establishing a more effective and integrated alternative.

Priemus (2010) is of the opinion that it is prudent when planning to factor in mitigation of effects of anticipated pitfalls born out of poor decisions for mega-projects. As such, in order to guarantee flexibility, enabling project initiators cope with a changing political landscape, markets, insights and technologies, possible alternatives must be considered as early as possible and options maintained for as long as possible. This will help in dealing with what scholars refer to as the megaprojects paradox Thomas (2013) alongside having more rigorous and candid debates prior to approval of such projects.Political symbolism seems to be the major justification for most of the flagship projects, as is the perception among critics of the construction of South Africaôs Gautrain Van Der Westhuizen (2007). Gautrainôs justification was based on its close association with FIFA World Cup 2010 hosted in South Africa. This mega project served to project South Africa as the first and only modern African state. Similarly, there were political undertones in other flagship projects such as the APPCDC, the London Olympics 2012, the Fome Zero (Zero Hunger) Program, the urban regeneration projects in Europe, and the Gautrain which influenced the projectsô costs, time scales, goals and overall management.

Born out of a number of factors ranging from wars to climatic factors, food insecurity has led to major humanitarian aid missions in Sub-Saharan Africa than anything else. Poor yields of cereal crops resulting from a number of factors have been blamed for food unavailability. In addition, (Khan et al., 2006; Khan et al., 2014), has identified striga weeds, stem borer pests, and degraded soils as likely causes to food insecurity. In Ethiopia, the ôPush-pullô flagship project was set up to

address; striga weeds, stem borer pests, and degraded soils as likely causes of poor crop yields, usingbiotechnology(Khan et al., 2006; Khan et al., 2014).The Grand Ethiopian Renaissance Dam (GERD)is considered key in Ethiopiaôs pursuit of economic development and remains the largest engineering project ever in the Country. Ethiopia has prioritized and invested heavily on renewable energy production, particularly its hydropower potential as witnessed by the ongoing construction of the GERD on the Blue Nile River Chen and Swain (2014). The concept of the GERD dates back to 1960s. However, construction was launched fifty-one years letter in April 2011 at an estimated cost of 4.8 billion US Dollars. It has 5,250 megawatts installed capacity and reservoir volume in excess of 63 billion cubic meters, approximately 1.3 times the Blue Nile River annual flow Power-technology (2013).

Similar projects have been implemented with varied results at national level. Such projects have been considered high profile given their huge budgets, technology requirements, implementing partners and the duration under implementation Raco (2014); Vila Vázquez (Ed.) (2010). Examples of such project include the Standard Gauge Railway (SGR) project, the 300 MW Lake Turkana Wind Power Project, the Olkaria Geothermal Power Stations with combined electricity generating capacity of 365.6 MW, and the Lamu Port Southern Sudan Ethiopia Transport Corridor in Lamu County (LAPSSET). Under large scale irrigation schemes, there are five major public irrigations schemes in Kenya (Mwea, Bunyala, Perkerra, Ahero and West Kano) that have been in operation since 1998 under the management of the National Irrigation Board (NIB) and successful private commercial large-scale irrigated farms for agricultural purposes such as Delmonte, Dalamere, and Kakuzi, Karina and Mwaniki (2011).The Galana-Kulalu food security project has been touted as having the potential of increasing Kenyaôs agricultural production, increasing available land for agriculture and absorbing part of the burgeoning population. The management system of this scheme is managed by the (NIB).

1.2 Statement of the Problem

The Galana-Kulalu food security project started as a one-million acre model farm in 2014. It was anticipated that the irrigated farm and support projects would not only ensure food security but would also result in significant increases in agricultural exports for Kenya. In addition to the hundreds of jobs that would be created by the irrigation scheme and accompanying projects, the

cost of maize flour would drop by 16 percent. Other agricultural products would similarly experience marked price drop owing to the projected yields at Galana-Kulalu food security project and their relative abundance.

However, questions have emerged on Galana-Kulalu food security projectôs capacity to make Kenya food secure and a key player in the global agricultural exports market.According to a study by Tegemeo Instituteof Agricultural Policy and Development, factors like inefficient use of land, water and farm inputs as well as the history of irrigation schemes performing poorly in Kenya in the 1980ôs- 1990ôs and the lack of sufficient information about economic viability of maize production under irrigation are to blame for the current status of Galana-Kulalu food security project. Furthermore, political economy issues such as conflicts around irrigation governance between the county governments of Kilifi and Tana River and the national government coupled with tendering and procurement flaws, alteration of project costs, cost overruns and non-inclusive prioritization are likely to have influenced the performance of Galana-Kulalu food security project. Based on concerns raised by the National Assembly Agriculture Committee on the viability of Galana-Kulalu food security project, the Kenyan government, through the relevant cabinet minister announced in January 2016, the decision to slash Galana-Kulalu food security projectôs budget in half.

Based on the budget slashing and current reassessments, the future of the Galana-Kulalu food security project is uncertain.The National Irrigation Board (NIB) which is in charge of implementing the Galana-Kulalu food security project across the country should reevaluate the high cost of running the project brought about by the inefficient use of water, fertilizer and land resources. Besides, there is need for concerted effort by all government ministries to address concerns about tender awards, cost overruns, and procurement flaws urgently and conclusively. Further the existing political wrangles between the county governments and the national government should be stemmed. Of essence is the reevaluation of the pre-feasibility studies to determine the availability of abundant and reliable water, or the lack thereof to sustain the huge water requirement of the project.The choice and prioritization of project interventions should be informed by participatory needs assessment involving all key stakeholders including the national government, host county governments, opinion leaders, local communities and experts.

1.3 Purpose of the Study

The purpose of the study was to study the factors influencing performance of flagship projects in Kenya: the case of Galana-Kulalu food security project in Kilifi County.

1.4 Objectives of the study

This study was guided by the following set of objectives:

i. To establish the extent to which resource management influences the performance offlagship projects in Kilifi County.
ii. To determine the extent to which the use of pre-feasibility assessment influences the performance of flagship projects in Kilifi County.
iii. To examine the extent to which financial stewardship influences the performance of flagship projects in Kilifi County.
iv. To find outthe extent to whichneeds assessment influences the performance of flagship projects in Kilifi County.

1.5 Research Questions

The study was guided by the following research questions:

i. To what extent does resource management influence the performance of flagship projects in Kilifi County?
ii. To what extent does the use of pre-feasibility assessment influence the performance of flagship projects in Kilifi County?
iii. To what extent does financial stewardship influencethe performance of flagship projects in Kilifi County?
iv. To what extent does needs assessment influence the performance of flagship projects in Kilifi County?

1.6 Research Hypotheses

The study tested the following null hypotheses:

i. **H_0;** Resource managementdoes not significantly influence the performance of flagship projects.

H_1;Resource management does significantly influence the performance of flagship projects.

ii. **H_0**;Use of pre-feasibility assessment does not significantly influence the performance of flagship projects.

H_1; Use of pre-feasibility assessment does significantly influence the performance of flagship projects.

iii. **H_0**; Financial stewardship does not significantly influence the performance of flagship projects.

H_1;Financial stewardship does significantly influence the performance of flagship projects.

iv. **H_0**; Needs assessment does not significantly influence the performance of flagship projects.

H_1; Needs assessment does significantly influence the performance of flagship projects.

1.7 Significance of the Study

The findings of this study are expected to be beneficial in informing stakeholders on the performance determinants of Flagship projects in the Country and beyond. It will also give a basis for performance evaluation of similar projects locally (Dongo Kundu by-pass road, LAPSSET project and the Amu Power Coal Project) and nationally. The emerging issues in Galana-Kulalu food security project will be compared with the other irrigation schemes in the country ran and managed by NIB.The project implementing agencies are keen on the project outcome. As such, they will instill objectivity in the planning and conducting of feasibility studies and its implementation thereof. This means that they will be objective in hiring reputable firms to carry out feasibility studies and act on independent results without bias or external manipulation. The outcome of this study will interrogate the relevance of the various existing procurement laws, procedures and practices as well as guidelines on general financial stewardship for flagship projects of such magnitude in terms of players, budgets, scope and technology. Local communities are the true owners of such projects and their involvement in the project, acknowledgement of their input, and incorporation of their specific needs born out of a participatory needs assessment are critical performance determinants that will lead to the intended project outcome.

The Resident Project Engineer (Project lead), and Agronomists who are the lead project implementers will be guided on the best strategies for observing prudent resource management going forward. NIB being the implementing agency may prescribe, supervise and evaluate the methodology and approach employed by the contractor, Green Arava Company, towards resource management.This study falls short of addressing all the issues pertaining to performance determinants of flagship projects. Nonetheless, the noticeable gaps and emerging issues should spur further scholarly researches. The study findings will contribute to the body of knowledge.

1.8 Basic Assumptions of the Study

The research was pegged on the assumption that the sample will be a sufficient representative of the population and that the study variables will hold.

1.9 Delimitations of the Study

The study focusedon factors influencing the performance of flagship projects in Kenya. The study was undertaken in Galana-Kulalu food security project in Kilifi County. The respondents included current and former project employees drawn from Green Arava ltd (Israeli contractor); NIB; Ministry of water; Ministry of Agriculture, Livestock, and Fisheries.

1.10 Limitations of the Study

The geographical location of the study area posed logistical challenges as it was found deep in the interior with poor road network, limited public service vehicles and boarding facilities. This in essence meant that researchers had few hours per day for data collection. Besides, night travels were considered risky due to possible banditry attacks. Data collection time line coincided with the nationwide crackdown on public service vehicles flouting traffic rules which affected many vehicles thus there were fewer public transport vehicles.

1.11 Definition of Significant Terms

Project performance ï Effectiveness (ability to accomplish goals) and efficiency (with minimum resources) of an endeavor in fulfilling an obligation (project) measured against preset standards of accuracy, cost, completeness and speed.

Flagship projects-Projects meant to strengthen a branch or sector of the economy or to develop model solutions to crucial societal challenges. They are specific and high-level important hence, they serve to inform the general public of the specific problem it seeks to solve and the means to do it. They offer national and international visibility for a countryôs technological advancement and thus make it attractive for future local and international investment.

Resource management -The process of utilizing resources: tangible resources (goods and equipment), financial resources and labor resources in an entity in the most efficient way possible. Resource management ensures availability of enough resources to accomplish a task, avoiding overabundance and too much downtime.

Feasibility assessment-Survey and appraisal of a proposed project to decide whether or not: it will be profitable, it is workable within the estimated cost, and it is technically realistic. A feasibility study must account for economic, legal, technological and scheduling factors. They are useful in determining potential positive and negative outcomes prior to huge investment in a project.

Financial stewardship -The process of planning, organizing, controlling and monitoring financial resources aimed at achieving project objectives. Financial stewardship allows for the control of critical financial activities such as utilization of funds, procurements, accounting, risk assessment, payments, and everything related to money.

Needs assessmentï The process of gathering information about an expressed or implied gap (need) of an entity. The need could be a desire to correct a shortfall or to improve current performance existing. Needs assessment may serve as an effective tool in clarifying problems and determining appropriate interventions.

1.12 Organization of the Study

The research project report is arranged in five chapters. Chapter one entails introduction of the study; background of the study; statement of the problem; purpose and objectives of the study; research questions; significance of the study; basic assumptions of the study; delimitation of the study; limitations of the study and definition of significant terms to be used in the study.Chapter two narrates the literature review on the various variables which act as performance determinants

of flagship projects in Kenya. These variables include: resource management; quality of feasibility assessment; financial stewardship; and needs assessment; conceptual framework and a summary of the literature review.Chapter three is the research methodology. It encompasses the research design, target population, sample size and sample procedure, data collection instruments, pilot study, validity and reliability of the research instruments, data collection procedures and data analysis techniques, ethical considerations and operational definition of variables.Chapter four covers data analysis, presentation and interpretation. This includes: questionnaire return rate, demographic characteristics of respondents, interview and checklist results.Chapter five entails a summary of the findings, discussions, conclusions and recommendations. The chapter gives a Summary of the findings, Discussion of the study findings, Conclusion of the study findings, recommendations and suggestion for further reading.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews and discusses works of other authors related to the field of study, to enable the researcher develop new knowledge obtained from the gaps identified in the reviewed literature. This chapter has been organized into three main sections as follows: flagship projects performance determinants, research gaps and the summary. In the first section, flagship projects performance determinants, the researcher elaborately described and explored the various themes of study in exploring performance determinants of flagship projects in Kenya, the case of Galana-Kulalu food security project in Kilifi County. The themes under the study included resource management, feasibility assessment, financial stewardship and needs assessment for project intervention. The independent variables of the research were studied and how they affected the performance of flagship projects in Kenya. A conceptual framework was used to outline the relationship between the independent and dependent variables. The research gap outlined the need for further research on Galana-Kulalu food security project, alongside the problems encountered during the study. The summary gave a preview of the literature review.

2.2 Concept of Project performance

The concept of project performance is at the center of the general understanding of project management. According to Muller and Jugdev (2012), project success factors (project performance determinants) are those elements of a project able to increase the likelihood of success of a project when influenced. They are independent variables which make success more likely. In most cases, a project is deemed successful if it is completed within the budget, in time, and within the set quality specifications Mutai et al., (2016).However, overall project outcome and project sustainability were identified as important parameters of measuring project performance according to a study conducted by the World Bank to explain determinants of project performance of agriculture-focused projects in its evaluation portfolio.Leigh (2010) propounds that performance is determined by many factors such as mission, culture, goals, work-flow, knowledge, skills and environment all working in synergy to yield stakeholdersô needs. In

essence performance is about results or output and has three levels; Organization, Process, and Individual.Optimal performance is realized when the three levels work harmoniously.

Over the last decade, great growth has been witnessed in capacity development conceptsin organizations. The concept is still undergoing evolution including application, definition and consequences around it. Rugumamu (2011) alludes that capacity development has been employed widely in donor development projects. Robotics, ICT and agricultural automation innovations are few examples of capacity development capable of triggering improved performance in an organization. Therefore, capacity development refers to the planning processes and the resultant outcome aimed at enhancing individual capabilities and the overall organizational performance Isimbabi (2005).The ability of the project manager to manage and control change, especially that of project scope,is crucial to attaining goals and an obvious performance indicator for a project manager Nibyiza et al (2015). Realizing the desired results is the major test of effective project performance, taking precedence over constraints of budgets and deadline. This is often observed through scope fulfillment. A well run project with a huge scope implemented in phases has a clear transition from phase to phase as within its plans.

2.2.1 Resource management and performance of flagship projects

Planning and control of project resources within the project framework determines how resources can be best utilized and aims at timeliness and efficiency in resource application for optimal project performance. Resource managementhas a direct correlation to project performance and encompasses resource allocation and utilization. Optimal resource allocation and utilization have the possibility of ensuring better-than-expected budget, better-than-expected schedule performance and overall project success. Project site activities are only secondary to the office tasks which areequally demanding in scope and content. Such includeplanning, designing, estimating, procurement, scheduling, controlling and accounting. Availability of resources at the project site is critical in the smooth flow of activities. The lack of strategic planning for material and labour resources is a major cause of delays in project delivery and total collapse of project implementation in extreme cases Al-Kharashi and Skitmore (2009). The basic resources required for an irrigation project and food security scheme are Land, Water, Inputs and Machinery. These resources should be availed and properly utilized.

Land is an important resource upon which performance of any project would be pegged. The value placed on land identified for project implementation is an important determinant of project performance as it bears on the overall cost of the project. In cases where land rows have ensued, projects have witnessed massive delays, suspension and total paralysis. The construction of Indiaôs Hyderabad International Airport (HIA) was faced with opposition to land acquisition for project implementation for a number of reasons Okengôo (2015). The LAPSSET project has been marred bydelays caused by among other factors, increased controversy about the correctness and accuracy of the listsbearing the names of the project affected peopledue for compensation.While the SGR project phase one suffered escalated overall cost attributed to compensation for individuals whose land was acquired for the project, phase two on its part suffered delays born out of a dispute between the government and environmental conservationists over wildlife conservation land through which the project had to pass Otuki (2017).

One million acres strategically located between Rivers Galana and Tanawere identified out of 1.78 million acres which is the area covered by ADC Galana-Kulalu ranch for the Galana-Kulalu food security project. ADC Galana-Kulalu ranch is owned by the Agricultural Development Corporation (ADC) a government parastatal under the ministry of agriculture located in the Counties of Kilifi and Tana River. As such issues around land compensation did not affect this project. However, political economic issues around land ownership conflicts and irrigation governance rows between the county and national governments have had a negative impact on the project. From the onset, there were disagreements on land utilization and investment priorities, whether the project should be designed to benefit the society or individuals; whether to raise animals under pastoralism or to grow maize and how to price resources like water when used.

Pastoralists from Tana River County are opposed to the project for the area it is occupying in blocking the transit route between river Galana and the North as well as diminishing grazing area. Kilifi County assembly expressed its wish to remove the National governmentôs involvement in the running of the Galana-Kulalu food security project through a motion passed in the assembly Gari (2018). This in essence means collapse of the project.Results from research conducted by Tegemeo Institute on Maize production at Galana-Kulalu food security project

showed that land and water were underutilized. On the other hand fertilizer was excessively over utilizedOtieno et al. (2015). Water was flowing through uncultivated field and roads which passed through cultivated fields, on the path of the centre pivot irrigation system. This is wastage. Similarly, water wastage caused by evapotranspiration because the land under cultivation lacked soil covering in the heat was unnecessary.Water remains the most limiting resource in dry areas more than land, for improved agricultural production. It is therefore a better strategy to focus on ways of optimizing water productivity as opposed to yield per unit land. For an effective dry farming system under such conditions, adoption of more efficient water management technologies would move a long way in ensuring agricultural productivity.

Performance of an irrigation scheme is dependent on the availability of water. Further,it indirectly determines the cost of the irrigation project Ngenoh et al. (2015). Those irrigation projects located in areas with more available water tend to be smaller in size and more effective in reducing poverty directly and indirectly. Galana-Kulalu food security project has suffered insufficient water owing to the nature of the Galana River, the scale of the project and the long distance and impossible terrain between Galana-Kulalu food security project and River Tana from which additional water would be sourced from. In the article ñUnique Challenges Face the Galana-Kulalu food security project and Irrigation Schemeò (2016), it would cause and engineering nightmare to abstract water from the River Tana to Galana-Kulalu food security project. It would require two-meter diameter steel pipes over a distance greater than 250 kilometers through difficult terrain. Besides, the area set aside for the construction of a dam for the irrigation project is unsuitable and cannot utilize gravity flow. If constructed, the project will incur huge pumping costs to the tune of KES 6.2 billion annually.

Over the past decade there has been increased interest in strategies promoting in-field water management for dry land crops in order to enhance effectiveness of irrigated water to stabilize and enhance yields. Such strategies include conservation farming including; reduced tillage, deep tillage, zero tillage and use of planting basins. Coupled with yield-enhancing inputs, these technologies have yielded impressive results Peacock, Ward, and (2007). Oweis and Hachum (2006) allude to the fact that substantial improvements in water productivity that have ended up being sustainable have been achieved by adopting integrated farm resources management. On-

farm water-productive technologies, coupled with improved irrigation management techniques, improved genetic make-up of crops, timely socioeconomic interventions and better crop selection will help in achieving high yields.The row that exists between stakeholders is partly about water use in the project which begs the question, was their participatory prioritization of water use in the irrigation project?Galana-Kulalu ranch falls under the Arid and Semi-Arid Lands (ASALs) of Kenya where scarcity of water has made it a very important resource and river Galana a major source of livelihood. Stakeholders require candid sessions of exchange of ideas, expertise, experiences and interests leading up to stakeholder commitment, and enhanced project sustainability.

Of significance to agricultural productivity are inputs, more so fertilizer and high yielding seed varieties. Green Revolution of Asia began with the development of high-yielding, fertilizer responsive varieties for rice and wheat in the 1960s Denning et al. (2009). Asian nations ensured increased access to fertilizer and technology through state-supported subsidies and extension services respectively.Significant improvements in maize productivity were witnessed in Kenya, Zambia and Zimbabwe in the 1980s. Cereal crop output has significantly improved over the past decade in Ethiopia. Studies have shown that with increasing fertilizer subsidies there is a likelihood of increased crop production FAO. (2008).However there is a drastic reduction in fertilizer use in Africa attributed to a number of factors ranging from economics to governance. By the turn of the century, Africa was comparing unfavorably with East and Southeast Asia in fertilizer use per unit area at 8 kilograms per hectare and 96 kilograms per hectare respectively Morris (2007). In fact Africa accounts for a paltry 1 percent of global fertilizer consumption. However, excessive use of fertilizer has detrimental effects on crop yields, more so maize.

The most used type of fertilizer in maize production is the nitrogen (N) fertilizers. With the rational of applying high rates of fertilizer to maximize economic yield, long-range harm has been done to the environment, affecting yield in the long term Good and Beatty (2011). There is still a large yield gap in developing countries. There is urgent need to increase maize yields amid shrinking land area to feed the fast growing population and this has become the incentive with which some farmers are using to justify excessive fertilizer application on fields.Whilecountrieslike Denmark have achieved an N balance surplus and hence can reduce N

fertilizer usage without fear of yield loss, countries in Sub Saharan Africa will require increasing their N application to optimize production. This should however be done in conjunction with best management practicesto prevent destruction of soil and pollution to the environment. Such include region-specific farming practices, improved plant varieties, crop rotation, time-release N fertilizer, bio inoculants, drip irrigation, and similar approaches.Today, farmers in East and Southern Africa plant 58 percent of entire maize produced to new high-yielding varieties. These out-yield traditional varieties by 45 percent on average even without fertilizer. Although Hybrid maize seed exhibits vigor, recycled hybrid seed does not breed true to type in subsequent generations resulting in excess of 30 percent yield losses, reducing and even eliminating any possibility of yield advantage in subsequent planting. Research shows consistency in yield advantage of maize hybrid seeds over local varieties at various levels of fertilizer use even in a drought year and in conditions of low soil fertility Smale and Jayne (2004). Different seed varieties are suitable for different climatic conditions and it is prudent that trials be done prior to planting to ascertain the right seed variety for the area intended for planting especially for huge plantation farms to reduce variety related losses.

Optimal yield realization can only be achieved when water, fertilizer, land and hybrid seed are used optimally. In sub-Saharan Africa, investment in irrigation development is driven by governments through policy guidelines, private sector, multinational donor agencies, technology, markets and innovation resulting in different types of irrigation systems over time. Globally, the last five decades have witnessed huge investments in large-scale surface-irrigation infrastructure Ofusu et al. (2014). As reported by Faures, Svendsen and Turral (2007) declining growth rate for irrigation development can be blamed on underperformance, reduced donor funding, negative environmental and social impacts and declining prices of cereals. They have led to slowed investment in irrigation infrastructure. In the late 1970s, in reaction to the decline in investment in irrigation infrastructure, governments in sub-Saharan Africa began rehabilitation works on the existing large scale irrigation schemes Innocencio et al. (2007). Awulachew et al. (2005) identified contributory factors to breakdown of machinery and collapse of schemes as high cost of investments against negative rate of return, technical flaws in infrastructural designs and feasibility studies such as unsuitable locations for dam construction, cracks in dams, seepage, silting of reservoirs and sedimentation.

According to Innocencio et al. (2007), in sub-Saharan Africa, the cost of establishing a new irrigation scheme is 141.67 percent higher than costs incurred in other developing countries at USD 14,500 per hectare and USD 6,000 per hectare respectively. Namara et al. (2010)blames this on insufficient or lack of local expertise. Involvement of expatriates in designing, construction and test-running of irrigation schemes is a very expensive affair.Irrigation schemes demand costly recurrent expenditure as well, in terms of operation costs, water supply and maintenance of distribution and drainage channels. World Bank (2007) indicated that irrigation projects have a huge budgetary requirement for both development and recurrent expenditure and adversely affect developing countries, most of which have limited capacity to set up irrigation infrastructure. As such small irrigation projects that have sufficient water and are well managed have a higher performance and sustainability index in comparison to conventional large scale irrigation projects Merrey et al. (2002).Top-down planning and implementation process in running irrigation projects often leads to non-acceptance of these projects by local stakeholders leading further to collapse of equipment and schemes. Irrigation technologies should match the capacity of its users Awulachew et al. (2005). Similarly, designs developed must be informed by local conditions such as crops to be grown, soil type, method of managing the irrigation infrastructure as well as climate. There seems, however, to be few experts with the capacity to incorporate all these elements in a workable design. The Meki-Ziway Irrigation Scheme in Oromia, Ethiopia collapsed because pump spare parts were not available to local stakeholders, in addition to the huge cost of electricity incurred in running the pumps which could not be met Ofusu et al. (2014).

2.2.2Quality of feasibility assessmentand performance of flagship projects

There are a number of studies in literature whose authors have described as feasibility or pilot studies. These studies are generally undertaken in preparation for subsequent large scale definitive observational studies to address important issues of uncertainty Lancaster (2015). The objectives of undertaking feasibility studies differ from those of main study.Feasibility studies are pieces of research carried out prior to a main study to answer the following question ñIs this study doable?ò, and are used to estimate parameters to be used in the design of the main study by listing uncertain parameters and describing methodologies for improving their precision for a

better success chance of the main study ("Feasibility and Pilot Studies," n.d., para. 6). It is important to note that in some studies, pilot study is considered the first phase of the study whose data may be used in the final analysis hence óinternal pilotô Nonetheless, data may be analyzed then set aside at the end on the pilot study, hence óexternal pilotô

The aspect of reliability of the results of a feasibility study is crucial in defining the consistence of the results. It refers to the degree to which feasibility study yields stable and consistent results. Reliable feasibility study results should be able to replicate in several other studies as well as the main project being implemented. These results should be dependable enough to inform decisions during planning.The United States Bureau of Reclamation (USBR 1964) established initial comprehensive plans for construction of dams in the Blue Nile gorge over 50 years ago. According to Whittington, Waterbury and Jeuland (2014) over the past decade the Ethiopian Ministry of Water Resources to develop contracted international consultants to develop comprehensive feasibility studies for a number of most promising dam sites along the Blue Nile River in the Blue Nile gorge. One of the objectives of these feasibility studies was to establish whether taller dams with higher energy production capacity are possible at several sites. In fact, through these studies Beko-Abo was identified as a promising dam site (EDF 2007b, a, Norplan, Norconsult, and Shebelle Consulting Engineers 2007).

Accuracy of a feasibility assessment refers to the degree to which an assessment measures that which it is supposed to measure.Discrepancies have been observed between feasibility results and actual project implementation results. Accuracy of results of feasibility studies seek to determine by how much feasibility assessment results miss the mark, if the results seem inaccurate.Feasibility studies are meant to provide a platform on which to ñget it rightò prior to committing money, time and resources to an idea whose outcome may not be as per the original plan, therefore necessitating additional investment in correcting flaws, removing limitations, and then giving it a second shot. Feasibility studies may open your eyes to new opportunities, possibilities and solutions that would never have otherwise been considered.The Government of Czech Republic approved the PPP Policy to enable the creation of an enabling environment to undertake PPP projects to enhance public services (ñPPP Pilot Projects Analysis,ò n.d., ñIntroductionò). As such the government initiated PPP pilot project to test project management,

methodologies, legislation, processes and procedures and learn lessons. It is based on the results of the pilot project to make important policy decisions.

Construction projects have similar characteristics to flagship projects in cost, scope, players, technology and running time. Such projects include dams, water mains, sewage systems, water treatment plants, pipeline networks and power generation and are characterized by Vast amount of resources in terms of materials, money,, labor, time and equipment and time (Salman et al., 2007; Kulkarni et al.,2004; Morley, 2002). Huge expenditures on these projects ought to be weighed against the expected deliverables to the local and national economy. Hence, feasibility assessments need to be conducted prior to the commencement of construction of infrastructure facilities. A study that measures the potential profitability of a project, or an assessment that determines the expected project deliverables relative to its cost is termed as economic feasibility study of a project. Hyari and Kandil (2009) propound that ensuring the validity of feasibility studies of flagship projects is a crucial step ensuring that decisions made are based on standard procedures, avoiding misleading or inadequate information.

2.2.3Financial stewardshipand performance of flagship projects

Financial stewardship has more to it than financial administration and control. Sound financial stewardship is a crucial prerequisite for successful project delivery. Sound financial stewardship aims to provide important information required by those managing, implementing and supervising the projects. These include financial institutions and government oversight agencies among others. In addition, it offers confidence to project funders, project recipients, and other stakeholders that funds have been utilized prudently and for the intended purpose, while acting as a deterrent to corruption and fraud through functional internal controls. It encompasses financial planning, budgeting, accounting, reporting, internal controls, auditing, procurement, and funds disbursement all aimed at prudent project resource management. In this paper, focus will be put on budgeting and procurement.

Budget overruns offers a litmus test for project failure of success. Very few organizations have an unlimited budget for projects, as such;project performance is largely based on the extent of achievement of intended objectives, which should be the bottom line in any project.Moira (2017) propounds strategies for preventing cost overruns through effective control of project budget

which include; understanding stakeholdersô true needs and wants. Before setting budgets it is crucial that projects requirements are accurately identified and documented and confirmed with stakeholders. Secondly, prudent project managers should budget for surprises. This begins by being as realistic as possible when estimating costs, and inviting inputs from all stakeholders. During budgeting, it is essential to build in contingencies, factoring in things beyond your control. Thirdly, developing key performance indicators (KPIs) will enable project managers ascertain the extent of deviation of the actual budget from the planned budget, the amount spent of the project, and so on. Fourthly, projects that are allowed to run without budget management more often lead to collapse. Frequent budget oversight is important in avoiding budgets from deviating too far out of hand. Lastly, of importance is to keep all team members informed and accountable for the current budget status and the projected budget forecast.Failure to fully operationalize good procurement practices most often result in unnecessarily high operation costs, unacceptable supplier appraisals standards, poor inventory control, and uncoordinated business activities among others hence affecting performance of many projects (Chimwani, Iravo, & Tirimba, 2014).According to Odero and Ayub (2017), public procurement faces a myriad of challenges mostly due to the legal framework, political environment and market structure faced by procurers; hence it is an ambitious task to achieve efficacy in public procurement.

Roodhooft and Abbeele (2006) imply that public bodies are big purchasers dealing with big budgets. As such the need for transparency and accountability in government procurement and for the added fact that the money involved is public money. Besides, thelosses and inefficiency in Stateowned projects or enterprises' operations, has often forced the Government to bear major procurement burdens. Atieno (2009) looks at emerging issues in a study on problems facing parastatal governance in Kenya and points to inefficiency in operations, huge financial losses, and provision of inferior products and services as cross cutting issues. PPOA (2010) attributes this to:poor governance, bad public sector financial management, pilferage and bureaucratic wastage in parastatalsô management, which resulted to huge budgetary burden to the government. Incompetenceand inefficiency of management and administration of the procurement function in a number of public institutions has led to an annual loss of Kenya shillings 50 millionPPOA (2010).

Effective risk management enables projects to identify and quantify risks. Projects with effective risk management strategy enjoy greater productivity, higher success rates and better decision making on the part of the project manager Kinyua et al (2015). Studies on risk management strategies and project performance have shown that effective risk management enabled project performance success through better budget management, less downtime and management of project timelines. It is not enough to have good project plans or have a good, effective project risk management strategies will contribute significantly to project performance. Such strategies include including risk avoidance, risk reduction and risk transfer Olsson (2008).

2.2.4Needs assessmentand performance of flagship projects

Project managers often use needs assessment surveys to determine and understand project stakeholders' preferences. Project managers regularly rely on needs assessments to assess program feasibility. The needs assessment surveys are particularly prevalent in implementation of development projects in this day and age characterized by advanced technical innovations, rapidly expanding knowledge, and the general public demand for professional competence. Specialists in project implementation are under intense pressure to constantly increase their knowledge and skills.

Protagonists of needs assessment surveys challenge project managers to use these surveys as tools for decision making in determining specific programs or activities to be implemented best meet stakeholdersô and society's needsMalmsheimer and Germain (2002). Further, these surveys should be used to analyze program feasibility, akin to quasi-referendums on potential activities or programs, the assumption being that when surveys are conducted properly, survey respondents are likely to participate in program activities hence enhancing program ownership. In the study of disaster medicine, Nelson (2016) implies at rapid post disaster needs assessment as an important data collection tool for gathering accurate and precise objective and subjective data able to determine the damage done to the affected community and the critical needs thereof. In performance management, Ligon, Graham, Edwards, Osburn, & Hunter (2012) alludes to needs assessment being able to inform the learning objectives, the second critical step in the ISD model.Rojas and Figueroa (2018) suggest that carrying out successful projects generates

economic value and competitive edge among investors and beneficiaries alike. Therefore, project selection and prioritization have emerged as critical activities in decision-making and should involve all stakeholders alike. The ultimate goal is to ensure maximum shareholdersô value in the project.

While studying when to conduct needs assessment, Watkins, Meiers and Visser (2012) alluded that needs assessment are mostly designed to be used pro-actively to identify opportunities with which to improve performance because they aid in informing decisions. However needs assessment can be applied reactively when responding to effects of less-than-desirable outcomes, or continuously as an integrated item of an ongoing improvement program. Hence, needs assessments are major tools for decision makers any level in an organization.According to Aaltonen and Kujala (2016) stakeholder management is at the core of project management because, projects being temporary endeavors influence and are influenced by various diverse individuals and organizations and are reliant on their (stakeholders) skills, capabilities and contributions. Stakeholder management encompasses stakeholder identification, mapping, engagement and understanding of their unique contributions and possible risks to the project.External stakeholdersrefer to those stakeholders that do not form the project coalition yet are able to affect and be affected by the project such as local residents, community groups, landowners, regulatory agencies, environmentalists and local and national governments. (Aaltonen et al 2008; Aarseth et al 2013; Flyvbjerg,2014) assert that large projects always become subject to the effects of external stakeholders as well as a wider socio-political environment as established by Sallinen et al. (2011, 2013) studying the role played by government stakeholders in nuclear power plant flagship projects.

As modern projects navigate in the ever increasing complex stakeholder landscapes, it is imperative for project management scholars and practitioners to have a better understanding of the salient vital dimensionsof these stakeholdersand be able to diagnose challenges that they may pose to the project.A needs assessment forms part of the planning process mostly used for improvement of organizations or communities or individuals. It is an appropriate tool for problem clarification and identification of interventions Fulgham, Shaughnessy and Kaufman (2008). Needs assessment are most effective when they are ends-focused hence able to offer

credible evidence useful in determining the most efficient and effective means-to-the-ends towards achieving desired results. Needs assessments are more appropriate in the quest of understanding community needs. They complement project managersô observations and experiences giving detailed information obtained from a more representative group.

Needsassessments allows the project manager identify possible needs that could never be regarded as particularly important. More importantly, needs assessments ensure that any interventions taken are in tandem with the needs expressed by the community, hence earning communityôs support for the project. This will eventually get more people to actually partake in the activities of the project willingly and happily.Needs assessment could either be extensive or intensive depending on the number of cases under study to inform characteristics of a population. Extensive needs assessment employs a number of cases to understand the characteristics of a population. On the other hand, intensive research studies one or a few cases in detail to determine cause and effect Stoecker (2005). From the onset, there have been disagreements on resource utilization particularly land and water and investment priorities in Galana-Kulalu food security project. Thus, intensive research would ensure an in depth study of the above contentious issues to better understand cause and effect.

2.3Conceptual Framework

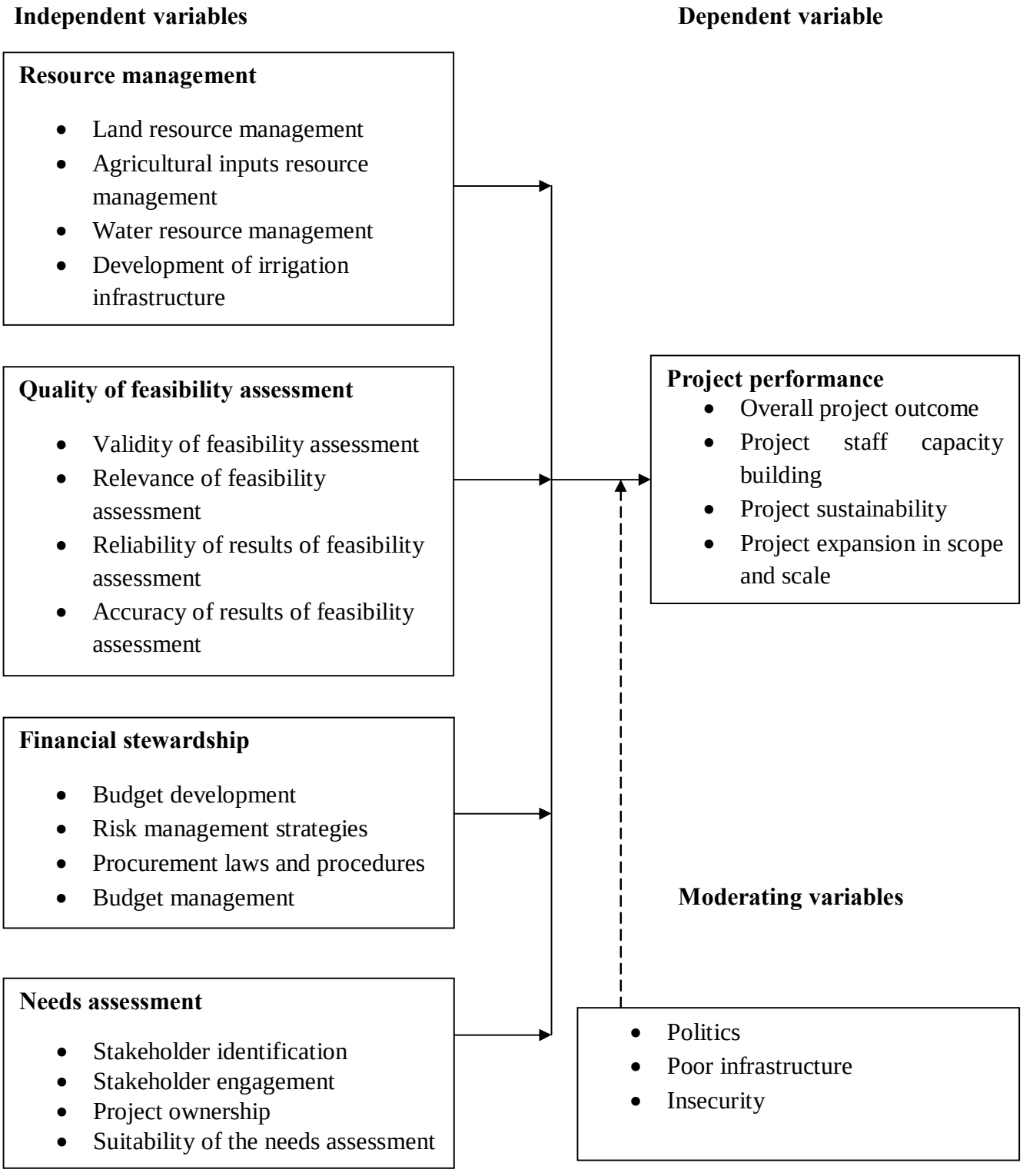

Figure 1: Conceptual framework on factors influencing the performance of flagship projects.

2.4Research Gap

Table 2. 1:Knowledge Gap

	Objectives	Author	Title	Finding	Knowledge Gap
i	To establish how resource management influences project performance of Galana-Kulalu food security project.	Ngenoh et al. (2015)	Economic determinants of the performance of public irrigation schemes in Kenya	Size of land under irrigation has a significant and positive effect on the performance of public irrigation scheme. Similarly, per acre operations costs and maintenance cost charged on the farmers has a significant and positive effect on the performance of public irrigation schemes. Nonetheless, the amount of donor funding to the scheme had a significant and negative effect on the performance of public irrigation schemes. Performance of public irrigation schemes can be improved if farmers are treated more as	The researcher looked at one angle of performance determinants of the performance of public irrigation schemes in Kenya: economic. There are several other determinants that out to have been studies which this study addresses. The researcher studied several irrigation schemes in Kenya run by the National Irrigation Board (NIB) which offers similar characteristics to Galana-Kulalu Food security project. Nonetheless, the dynamics around Galana-Kulalu food security project are unique. For instance, while other irrigation schemes are leased out to farmers who in turn

				shareholders, clients or as co-managers of irrigation schemes rather than beneficiaries.	pay for water utilized as well as maintenance cost per acre, Galana-Kulalu food security project which is still under construction has been assigned a contractor whose deliverables as per the ignition plans were to establish all necessary irrigation infrastructureand two-seasons production then hand over to NIB. Besides, Galana-Kulalu food security project is a flagship project with a lot of political interests, many stakeholders and huge budget. Hence the researcher delimitation may not adequately address performance determinants of flagship projects as a true representation of other flagship projects in the country akin to Galana-Kulalu food security

					project.
ii	To investigate how financial stewardship influences project performance in Galana-Kulalu food security project.	Odero & Ayub (2017)	Effect of Procurement Practices on Procurement Performance of Public Sugar Manufacturing Firms in Western Kenya.	Procurement practices have an influence on procurement performance of public sugar manufacturing firms in Western Kenya. Procurement planning has a positive and insignificant relationship with procurement performance Further staff competence has a positive and significant relationship with procurement performance.	The researcher explored the procurement performance in the public sugar sector of western Kenya. While the findings were a reflection of the public procurement system in Kenya, the delimitation of this study lacked similarity in characteristics with Galana-Kulalu food security project. The aspect of staff competency in procurement does not arise in the study of Galana-Kulalu food security project. Rather, procurement laws and procedures which encompass procurement planning are the constants under study.
iii	To investigate how needs assessment influences project	Otieno et al. (2015)	Economics of irrigated maize	Maize production under irrigation is feasible and profitable hence sustainable.	The study dwelt extensively on stakeholdersô engagement in needs assessment and resource

	performance in Galana-Kulalu food security project.		production	This was due to positive returns, high financial performance index, high operations and management index. Vested interests in the development of irrigation schemes may have led to low productivity per acre and negative perception about irrigation development. Technology failed in efficient resource allocation among stakeholders creating an allocation gap that compromised yield per acre.	management in Galana-Kulalu food security project; however the correctness and appropriateness of the needs assessment carried out was not measured. The researcher was keen to identify important stakeholder needs as being economic but failed to identify social needs that are vital to the projectôs performance. Besides, the researcher came short of identifying other key stakeholders and their specific needs and intervention thereof and mostly dwelt on farmers and National Irrigation Board (NIB).

Note. NIB = National Irrigation Board

2.5 Literature Review Summary

From the analysis above, it is evident that flagship projects are huge undertakings in terms of cost, scope, technology and actors. As such several factors come into play in determining their success. Many researches have studied various factors that influence performance of flagship projects and drawn various conclusions. This chapter extensively examined four variables in relation to Galana-Kulalu food security project namely: resource management, financial stewardship, needs assessment and quality of feasibility assessment comparing literature of other scholars in the field of study. The researcher also identified research gaps that give room for future research in the study area.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used in data collection and analysis in answering research questions addressing project performance in Galana-Kulalu food security project. This section explored research design, target population, sampling procedures, data collection methods, instruments and procedures, validity and reliability, ethical considerations and data analysis techniques.

3.2 Research Design

Research design has been defined as the overall strategy chosen to integrate several study components in a logical and unified manner and ensuring that the research problem has been effectively addressed Mutai et al. (2016). The study was guided by a descriptive research design in examining performance determinants of Galana-Kulalu food security flagship project in Kilifi County. Descriptive research design tends to presents existing practices, conditions, beliefs, opinion held, attitudes, trends and ongoing processes in order to interpret meaning Kothari (2004). Rubin, et al. (2009) asserts that descriptive research tends to describe, interpret and explain conditions of the present, taking note of practices, conditions, relationships, structures or differences existing, ongoing processes, opinions held, or trends that are evident. Accordingly, a descriptive survey design enables a researcher to collect data from an extensive area quickly and have a better understanding of the whole population from just a sample of it.Mugenda and Mugenda (2013) assert that descriptive survey design is easy to administer and manage and is a self-report study that requires quantifiable information to be gathered from a sample. Kothari (2004) further asserts that descriptive design allowsfor collection of large amounts of data faster and at minimal cost.

3.3 Target Population

The target population was the current and former project staff seconded by the government ministries, and those from the payrolls of NIB and Green Arava (the Israeli contractor undertaking irrigation infrastructure development and 2 seasons-production contracted

byNational Irrigation Board (NIB).They include the project Resident Engineer (RE), Deputy Resident Engineer (DRE), Project Accountant, Field Officer and Intern(are responsible for the day to day technical and administrative aspects of the project) and current and former workers in the project.

Table 3. 1: Target Population

Category	Population (N)	Percentage
Staff seconded from the Ministry of Agriculture	1	1%
Staff seconded from the Ministry of Water and Irrigation	1	1%
Staff of NIB	19	15%
Staff of Green Arava	99	83%
Total	**120**	**100%**

∗NIB staff consists of: 1 Accountant, 1 Field Officer, 4 Interns (Technical), 3 Drivers, 2 Machine Operators, 5 Security guards and 3 Caterers/Cleaners.

∗Project Resident Engineer (RE) seconded from the Ministry of Agriculture.

∗Deputy Project Resident Engineer (DRE)seconded from the Ministry of Water and Irrigation.

*Note:*Source of the information in the table is the Galana-Kulalu food security project staff data base.

3.4 Sampling Procedure and Sample Size

This section describes the sample size and sampling procedure used in the study

3.4.1 Sample size

The sample size of the target population was arrived at using the Slovinôs Formula a(see Almeda, Capistrano and Sarte, 2010) as follows;

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

Where;
n = Sample size
N = Population Size
e= Margin of error (0.05)

Thus;

$$n = \frac{120}{1 + 120\ (0.05^2)} = \frac{120}{1.3}$$

n = 92.3(approximately 92 respondents)

The sample size of the target population is 92 respondents which is about 77% of the target population.

Table 3. 2Sample Size

Category	**Population (N)**	**Sample (77%)**
Staff seconded from the Ministry of Agriculture	1	1
Staff seconded from the Ministry of Water and Irrigation	1	1
Staff of NIB	19	15
Staff of Green Arava	99	75
Total	**120**	**92**

3.4.2Sampling Procedure

This study employed purposeful sampling as well as simple random sampling. Palinkas et al (2015) asserts that purposeful sampling is used in qualitative research for identification and

selection of cases rich in information relating to the phenomenon of interest. Qualitative inquiry widely focuses on relatively small samples, be they single cases (n = 1), purposefully selected.Random sampling ensures that every member of the population gets an equal chance of being selected hence eliminates possibility of biasness Bordens & Abbott (2011).

The objective of purposeful sampling in this study was to reach respondents who are very close to the project and having abundant information on Galana-Kulalu food security project hence relevant to the study. This method of sampling targets the project Resident Engineer (RE), Deputy Resident Engineer (DRE), Project Accountant, Field Officer and an Agronomist Intern who are responsible for the day to day technical and administrative aspects of the project.A population census was done on the technical and administrative staff of the project (staff seconded by government ministries to the project and those in NIB payroll) while simple random sampling targetedformer and current workers in the project both from NIB and Green Arava payroll.

3.5 Data Collection Procedure

For this study, qualitative and quantitative primary data was collected through interviews, questionnairesand observation. Both semi-structured questions and structured questionswillbe administered through a questionnaire and will target former and current workers in the project both from NIB and Green Arava payroll. The technical and administrative staff of the project made up of staff seconded by government ministries to the project and those in NIB payroll will be subjected to individualinterviews. A structured checklistfor qualitative data collection will be used too with the assistance of the RE or DRE or any project staff with deep understanding of the project. Questionnaires will be most suitable for quantitative data collection because of the ease in administration, minimal costs associated, and convenience in terms of time hence higher reliability of answers provided. Questionnaireswill be in two parts, with the first part gathering respondentsô information and the second part gathering data on respondentsô perceptions on the performance determinants for the project. Questionnaires will be administered through ódrop and pick later methodô for those respondents able to read and writeand are comfortable with this method of questionnaire service. Otherwise questionnaires will be administered by the research assistants to respondents. The responses will be recorded using the 5 point Likert-type scale

(Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree). Secondary data will be gathered from NIB Galanaï Kulalu project reports.

3.6 Piloting of the Instruments

The researcher subjectedquestionnaires, and interview questions to 12 TARDA staff in Garsen, Tana River County. The respondents involved for piloting bore similar characteristics to the NIB and Green Arava staff in Galana ï Kulalu food security project in Kilifi County. The questionnaires were administered and collected instantaneously.

3.7 Validity of the Research Instruments

When choosing an instrument for research, a researcher must consider the relevance of the research instrument to the research questions and the quality of the instrument National Research Council Committee on Scientific Principles for Educational Research (2002). Quality in this case is meant to mean validity. According to Taber (2013),validity refers to the degree with which a research instrument is able to measure what it claims to measure.Questions were set comprehensively and appropriately so that, at the very least, most of the constructs of the variables measured. This ensured content related validity. As for criterion related validity, formulated questions wererelevant anddevoid of bias. According to Connelly (2008) a sample for the pilot study to test validity and reliability of data collection instruments (questionnaires) were determined at 10% of the projected population for the main study. Mugenda and Mugenda (1999)suggest 10% as thebare minimum. Pilot testing of questionnaires was done with 12 questionnaires to make sure that the adopted format was appropriate thus valid.

3.8 Reliability of the research instruments

Taber (2013) describes reliability as the extent to which a research instrument is expected to yield the same measured outcome upon repetition of measurements.Reliability in this study was tested using test-retest administered to 15respondents which represent10% of the sample frame and an additional 3 respondents in order to overcome one of the main limitations of Pearson Correlation coefficient for measuring reliability for two tests: overestimation of the true relationship for samples less than 15. The Pearson correlation coefficient of 0.796 realized meant acceptable reliability of the instruments.

3.9 Data Collection Procedure

The researcher undertook data collection with the assistance of 4 research assistants duly trained on the use of data collection tools. The data collection tools were prepared in advance and tested for validity and reliability. The researcher held interviews and fill out the structured checklist while research assistants helped in administering questionnaires.

3.10 Ethical Considerations

Permission to conduct research on Galana ï Kulalu irrigation project wasobtained upon formally writing to the General Manager NIB Nairobi.The researcher equally sort consent of participants in data collection after explaining the purpose of the study to them and assuring them of confidentiality during data handling. Besides, the researcher sortto ensure that data interpretation was devoid of biasness. The researcher endeavored to observe ethics and protect dignity of participants such that the process of obtaining information did not disrupt their social status.

3.11 Data Analysis Techniques

Data analysis is crucial in answering research questions. Data wasinfluenced for completeness and accuracy and was organized and summarized using tables and percentages. Data collected was subjected to analysis using qualitative and quantitative methods. Chi-square was used to test research hypothesis. Triangulation of qualitative data collected from interviews and quantitative data collected through questionnaires and checklist was done upon analysis. Cross tabulation and correlation among variables wasalso used to study relationships within the data which may not have been too obvious when analyzing total survey responses.

3.12 Operational Definition of Variables

Table 3. 3Operationalization Table

Variable	Type of Variable	Indicator	Level of Scale	Data collection methods	Data Analysis
Project performance	Dependent	Overall project outcome Project sustainability	Nominal	Questionnaire Interview	Descriptive
Resource Management	Independent	Land resource management Water resource management Agricultural inputs resource management Development of irrigation infrastructure	Ordinal	Questionnaire Observation	Descriptive
Feasibility assessment	Independent	Reliability of results of feasibility assessment Accuracy of results of feasibility assessment	Nominal	Questionnaire	Descriptive
Financial stewardship	Independent	Budget management Procurement laws and procedures	Nominal	Questionnaire	Descriptive
Needs assessment	Independent	Stakeholder engagement Appropriateness of the needs assessment	Nominal	Questionnaire	Descriptive

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter describes the data collected using questionnaires, interviews and checklist and presents it using tables upon analysis. Inferential statistics Chi-square test for independence has been employed for testing hypothesis and the relationship among variables.

4.2 Questionnaire Return Rate

The study had a sample size of 92 respondents, of which an equal number of questionnaires were administered for collection of quantitative data. Of the 92 questionnaires administered, 66 were returned as presented in Table 4.1 below. However, 63 questionnaires were used in data analysis because 3 questionnaires were incomplete hence rejected. The questionnaires returned and used in data analysis represents 71.7% of the total questionnaires administered which is considered sufficient enough for research purposes according to Mugenda and Mugenda (2003); Babbie (2007).

Table 4. 1: Questionnaire Response Rate

Questionnaires	Population	Sample (77%)	Response	% Response
Returned	-	-	66	71.7
Unreturned	-	-	26	28.3
Total	**120**	**92**	**92**	**100**

4.3 Demographic Characteristics of the Respondents

The demographic characteristics studied as designedin the questionnaires include;gender, age, level of education and period of residence in Kilifi County (project host County).

Table 4. 2:Demographic Characteristics of the Respondents

Soci-demographic characteristics	Category	Total	Percentage (%)
Gender	Male	42	66.7
	Female	21	33.3
Age	18 to 35 years	44	69.8
	36 to 55 years	17	27.0
	Above 35 years	2	3.2
Level of Education	Primary School	33	52.4
	O'Level	14	22.2
	Certificate/Diploma	4	6.3
	Bachelorôs Degree	2	3.2
	Others	10	15.9
Period of residence in Kilifi County	Natives	18	28.6
	1 to 3 years	11	17.5
	4 to 6 years	13	20.6
	More than 7 years	21	33.3

From Table 4.2 above, the majority of the respondents were male at 66.7% of the total respondents while the female gender was represented by 33.3% of the total respondents. From the findings, we can deduce that the male gender was dominant over its female counterpart in the work environment of the study area. This could be attributed to the nature of work as being physically demanding and slightly favorable to men over women. Nonetheless, women have been fairly represented.

Looking at the age factor from the Table 4.2 above, 44 respondents representing 69.8% of the total respondents fell in the 18 to 25 years age bracket. This in essence depicts an active age

group characterized by energy, creativity, flexibility and agility. Of the 63 respondents, only 17 belonged between the ages of 36 to 55 years and 2 above the age of 55. This is a representation of 27% and 3.2% respectively. This indicates that the work on this project is physically demanding and mostly manual. This could also point to the impact the project has had on job creation to the unemployed youth of Kilifi County.

As illustrated in the table above, a significant majority of the respondents at 52.4% attained primary level education. This partly explains why a significant majority of the work force was within the 18 to 35 years age bracket and dominated by the male gender.At slightly above 22% (14 respondents) was that category of respondents with Oõlevel education qualification. This is quite a small number although it is higher compared to those with tertiary education thus certificate/Diploma and Bachelorõs degree combined at slightly above 9% (6 respondents combined).Besides, there is another group that had a special category called ñothersò who could not be placed in the groups identified in Table 4.2 above. This group of 10 respondents formed close to 16% of all the respondents thatnever had formal education at all. The closest afew in this group came to education was the religious ñmadrasaòclasses, which too were taken at the basic level.

While majority of the respondents (18 out of 63) were natives of Kilifi County at 28.6%, they remain a minority when pulled against non-natives who make up a combined 71.4% (45 respondents)nearly three times the number of natives. It suffices therefore to say that the project has had a greater impact on non-natives compared to the natives in terms of employment creation. However, respondents who have lived in Kilifi County longer than 7 years, long before Galana Kulalu food security project was started were 21, and made up 20.6% of the respondents. This then means that there were other motivational factors towards their relocation and settlement other than the project. This could be anything from economic (migrating pastoralists, farmers along River Galana or bought land) to social (marriage, political displacement or family reunion) reasons. Looking at respondents aged between 1 and 6 years (24 respondents), they form a combined 38% of the total respondents. This can be attributed to the project inception as the project has lasted 6 years to date.

4.4 Resource management and performance of flagship projects

This variable sort to establish how resource management influenced project performance in Galana-Kulalu food security project, where three indicators were studied: land resource management (measured by land utilization), agricultural inputs resource management (measured by fertilizer utilization), water resource management (measured by water utilization) and development of irrigation infrastructure(measured by investment priorities).Project performance was measured by field level maize productivity.The following are the responses of the current and former project employees who made up the respondents in the study.

Table 4. 3:Cross tabulation: Land resource management and level of utilization of resources.

		From the onset there were disagreements on land resource utilization and investment priorities				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Level of utilization of resources (land, water, agricultural inputs), and infrastructure development influenced field level maize productivity.	YES	5	7	2	3	7
	NO	18	7	8	2	4

Table 4. 4:Cross tabulation: Agricultural inputs resource managementand level of utilization of resources.

		Fertilizer was excessively over utilized affecting field level maize productivity				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Level of utilization of resources (land, water, agricultural inputs), and infrastructure development	YES	6	9	0	4	5
	NO	11	18	1	4	5

Table 4. 5: Cross tabulation: Water resource management and level of utilization of resources.

		Additional investment in irrigation infrastructure will avail additional irrigation water to the project				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Level of utilization of resources (land, water, agricultural inputs), and infrastructure development.	YES	9	2	2	3	8
	NO	8	7	5	7	12

Table 4. 6:Cross tabulation: Investment prioritiesand level of utilization of resources.

		Available water for irrigation is determined by the nature of the River Galana				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Level of utilization of resources (land, water, agricultural inputs), and infrastructure development.	YES	3	0	3	4	13
	NO	6	2	0	5	27

In responding to the statement ó*From the onset, there were disagreements on land utilization and investment priorities*ô, 16respondents (25.4%) agreed while 37 respondents (58.7%) disagreed and 10 respondents (15.9%) respondents were undecided. On agricultural inputs resource management versus level of utilization of resources,18 respondents (28.6%) agreed that fertilizer was excessively over utilized affecting field level maize productivity, 44 respondents (69.8%) disagreed and 1 respondent (1.6%) were undecided. On water resource management versus participatory prioritization of water use, 30 respondents (47.6%) agreed, 26 respondents (41.3%) disagreed and 7 respondents (11.1%) respondents were undecided on whether availability of water for irrigation at Galana-Kulalu food security project was determined by the nature of the Galana River.In responding to ó*Additional investment in irrigation infrastructure will avail additional irrigation water to the project*ô Additional investment in irrigation infrastructure was

measured by Investment priorities where 49 respondents (77.8%) agreed, 11 respondents (17.5%) disagreed and 3 respondents (4.8%) were undecided.

The first objective of the study was to establish the extent to which resource management influences the performance of flagship projects in Kilifi County. The researcher hypothesized the objective as follows;

H_0; Resource management does not significantly influence the performance of flagship projects.

H_1;Resource management does significantly influence the performance of flagship projects.

Table 4. 7: Chi-square results on the relationship between Resource management and performance of flagship projects

	Chi-square value	Degrees of freedom	X-Table value	Decision on Null
Land resource management	8.90	4	9.488	Accept
Agricultural inputs resource management	2.01	4	9.488	Accept
Water resource management	3.13	4	9.488	Accept
Development of irrigation infrastructure	6.93	4	9.488	Accept

*0.05 level of significance

The calculated chi-square values obtained for all the 4 indicators under the construct (Resource management) namely: Land resource management, Agricultural inputs resource management, Water resource management and Development of irrigation infrastructure of 8.90, 2.01, 3.13 and 6.93 respectively werelesser than the critical value 9.488 at 5% confidence level. Therefore the null hypothesis was accepted

4.5 Quality of feasibility assessment and performance of flagship projects

This construct and its indicators were studied to determine the relationship between quality of feasibility assessment and performance of flagship projects, the case of Galana-Kulalu food

security project. The indicators under study included: validity of feasibility assessment (dependability to inform decisions), relevance of feasibility assessment (use of study results in project implementation),reliability of feasibility assessment results(consistence of feasibility assessment results) and accuracy of feasibility assessment results (parameters used in feasibility assessment tested for accuracy). Respondentsô responses as per the above indicators were captured as in the following tables.

Table 4. 8:Cross tabulation: Feasibility study validityand discrepancies in project implementation results

		Feasibility study results were dependable enough to inform decisions during planning.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Discrepancies between feasibility study results and actual project implementation results	YES	5	2	6	4	7
	NO	12	2	4	7	14

Table 4. 9:Cross tabulation: Feasibility study results and discrepancies in project implementation results

		Feasibility study results enabled project implementation.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Discrepancies between feasibility study results and project implementation results	YES	4	2	1	7	10
	NO	12	4	4	7	12

Table 4. 10:Cross tabulation: Consistence of feasibility study resultsand discrepancies in project implementation results

		Feasibility study results were stable and consistent.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Discrepancies between feasibility study results and project implementation results	YES	4	2	1	5	13
	NO	11	1	5	7	14

Table 4. 11:Cross tabulation: Accuracy of feasibility study results and discrepancies in project implementation results

		Feasibility study measured every parameter for accuracy.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Discrepancies between feasibility study results and actual project implementation results.	YES	5	1	2	6	10
	NO	12	3	6	6	12

Focusing on Feasibility study validity and feasibility study conducted, 32 respondents (50.8%) agreed that feasibility study results were dependable enough to inform decisions during planning of Galana-Kulalu food security project.21 respondents (33.5.8%) disagreed while 10 respondents (15.9%) respondents were undecided. In responding to the statement ó*feasibility study results enabled project implementation*ô while measuring relevance of feasibility assessment for Galana-Kulalu food security project, 36 respondents (57.1%) agreed, 22 respondents (34.9%) disagreed and 6 respondents (9.5%) were undecided. As for consistence of feasibility study results versus number of feasibility assessments, 39 respondents (61.9%) agreed that feasibility study results were consistent, 18 respondents (28.6%) disagreed and 6 respondents (9.5%) were undecided. On accuracy of feasibility study results and discrepancies in project implementation results, 34 respondents (54%) agreed with the statement ó*feasibility studies measured every parameter for*

*accuracy prior to committing money, time and resources*ò 21 respondents (33.3%) disagreed and 8 respondents (12.7%) respondents were undecided.The second objective of the study was to determine the influence of the use of pre-feasibility assessment on the project performance in Galana-Kulalu food security project which the researcher hypothesized as below;

H_0;Use of pre-feasibility assessment does not significantly influence the performance of flagship projects.

H_1;Use of pre-feasibility assessment does significantly influence the performance of flagship projects.

Table 4. 12: Chi-square results on the relationship between Quality of feasibility assessment and performance of flagship projects

	Chi-square value	Degrees of freedom	X-Table value	Decision on Null
Validity of feasibility assessment	3.03	4	9.488	Accept
Relevance of feasibility assessment	3.26	4	9.488	Accept
Reliability of results of feasibility assessment	40.51	4	9.488	Reject
Accuracy of results of feasibility assessment	39.45	4	9.488	Reject

*0.05 level of significance

The calculated chi-square value for validity of feasibility and relevance of results of feasibility assessmentwere 3.03 and 3.26 respectively which are lesser than the critical value of 9.488 at 5% confidence level. In these two cases null was accepted. Nonetheless at calculated chi-square value of 40.51 and 39.45 representing reliability and accuracy of feasibility assessment respectively being greater than the critical value 9.488 at 5% confidence level, the null hypothesis was rejected.

4.6 Financial stewardship and performance of flagship projects

This constructsort to establishing the extent to whichfinancial stewardship influences project performance in Galana-Kulalu food security project using four key indicators namely:budget development, risk management strategies, procurement laws and procedures and budget management.Budget development was assessed by accurate identification of projects requirements during budgeting;risk management strategies were assessed by built-in contingencies in budgets; and procurement laws and procedures was assessed bybudget overruns. Budget management on the other hand was assessed using revision of project costs. Responses by current and former project employees as per the four indicators are as shown in the tables below.

Table 4. 13:Cross tabulation: Budget development and project performance

		Budget Development: Projects requirements were accurately identified during budgeting.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Projects can run efficiently and effectively without budget management.	YES	2	0	1	1	3
	NO	14	5	17	4	16

Table 4. 14:Cross tabulation: Risk management in budgetsand project performance

		Risk Management: Contingencies were built in during budgeting.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Projects can run efficiently and effectively without budget management.	YES	1	1	2	1	2
	NO	18	7	20	3	7

Table 4. 15: Cross tabulation:Procurement laws and proceduresand project performance

		Procurement procedures are likely to have influenced the performance of Galana-Kulalu food security project				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Projects can run efficiently and effectively without budget management.	YES	0	1	1	2	3
	NO	15	4	15	6	16

Table 4. 16:Cross tabulation: Revised project costs and project performance

		Revision of project costs delayed project delivery.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Projects can run efficiently and effectively without budget management.	YES	0	0	1	1	5
	NO	5	2	7	6	36

In response to the statement ó*Projects requirements were accurately identified during budgeting*ô 24 respondents (38.1%) agreed, 21 respondents (33.3%) disagreed and only 18 respondents (28.6%) were undecided. 13 respondents making up a whopping 20.6% of the respondents agreed that contingencies were built in the budget to cater for unexpected occurrences. However 27 respondents, about 43% disagreed with this though. Another 22 respondents (35%) held no opinion on this matter. On another indicator, procurement laws and procedures, it was the opinion of 27 out of 63 respondents (42.9%) that budget overruns experienced in the project were caused by lack of full implementation of procurement laws and procedures. A majority of the remaining respondents, 20 making up 31.7% of the total respondents, disagreed hinting that budget overruns could have been caused by other factors away from procurement laws and procedures. Nonetheless, 25.3% (16 respondents), remained noncommittal. 48 respondents (76.3%) agreed that revision of project costs delayed project delivery whilea paltry 7 respondents

(11.1%) of the respondents disagreed. Only 8 respondents (12.7%) of the entire respondentsô population held no opinion.

The following hypothesis was tested under the study.

H_0; Financial stewardship does not significantly influence the performance of flagship projects.
H_1; Financial stewardship does significantly influence the performance of flagship projects.

Table 4. 17: Chi-square results on the relationship between financial stewardship and performance of flagship projects

	Chi-square value	Degrees of freedom	X-Table value	Decision on Null
Budget development	2.04	4	9.488	Accept
Risk management strategies	2.72	4	9.488	Accept
Procurement laws and procedures	4.64	4	9.488	Accept
Budget management	1.01	4	9.488	Accept

*0.05 level of significance

At 4 degrees of freedom the calculated Chi-square value for ôBudget developmentô (2.04) was less than Chi-square table value (9.488) at 5% confidence level, the null hypothesis was therefore accepted. Risk management strategies at 4 degrees of freedom and a calculated Chi-square value of 2.72, null hypothesis was accepted as the chi-square value was less than the chi-square table value (9.488) at 5% confidence level.Similarly, the null hypothesis for indicator ôProcurement laws and proceduresô was accepted because at 4 degrees of freedom, the calculated Chi-square values 4.64 was greater than Chi-square table value (9.488) at 5% confidence level.This was true for indicator ôBudget managementô whose null hypothesis was accepted because the calculated Chi-square values 1.01 realized was smaller than Chi-square table value (9.488) at 5% confidence level and 4 degrees of freedom.

4.7 Needs assessment and performance of flagship projects

This variable aimed at establishing the extent to which needs assessment influences project performance in Galana-Kulalu food security project. The variable was studied with the aid of four indicators as follows: Stakeholder identification, stakeholder engagement, project

ownership, and Project needs assessment. Respondentsô responsesin line with the three indicators have been presented in the tables below.

Table 4. 18: Cross tabulation: Stakeholder identification and project interventions

		Stakeholders were identified and mapped during stakeholder analysis.				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Project interventions are in agreement with the needs expressed by the community during needs assessment	YES	3	3	5	4	9
	NO	18	3	5	6	7

Table 4. 19: Cross tabulation: Stakeholder engagement and project interventions

		Stakeholder engagement was done in the course of project implementation				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Project interventions are in agreement with the needs expressed by the community during needs assessment	YES	3	5	5	4	8
	NO	16	8	6	3	5

Table 4. 20: Cross tabulation: Project ownership and project interventions

		Stakeholders have a sense of ownership for the project				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Project interventions are in agreement with the needs expressed by the community during needs assessment	YES	4	4	8	2	7
	NO	19	5	6	4	4

Table 4. 21: Cross tabulation: Project needs assessment and project interventions

		Needs assessment was done in the course of project planning				
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Project interventions are in agreement with the needs expressed by the community during needs assessment	YES	4	1	6	4	9
	NO	16	6	9	4	4

As in the Table 4.18 above, 26 respondents making up 41.3% are in agreement that stakeholder were identified and mapped during stakeholder analysis. 27 respondents (42.9%) disagree and 10 respondents (15.9%) were undecided. On the question of stakeholder engagement, 20 respondents (31.7%) were in agreement, over half the respondents (32 at 50.8%) disagreed and 11 respondents (17.5%) were undecided on whether Stakeholder engagement was done in the course of project implementation. In answering to the statement ó*Stakeholders have a sense of ownership for the project*ô only 17 respondents making up 27% on the total respondents agreed. Otherwise 32 respondents constituting 50.8% disagreed and a further 14 respondents (22.2%) were undecided. On the fourth statement on needs assessment being done in the course of project planning, a good number of respondents agreed (25 constituting 39.7%) agreed. However majority of the respondents, 27 out of 63 and representing 42.9%, disagreed. Only 15 respondents representing 23.8% were undecided on this matter. The fourth objective of the study was to establish the extent to which needs assessment influences the performance of flagship projects in Kilifi County, which was hypothesized the objective as below;

H_0; Needs assessment does not significantly influence the performance of flagship projects.

H_1; Needs assessment does significantly influence the performance of flagship projects.

Table 4. 22: Chi-square results on the relationship between Needs assessment and performance of flagship projects

	Chi-square value	Degrees of freedom	X-Table value	Decision on Null
Stakeholder identification	8.26	4	9.488	Accept
Stakeholder engagement	8.18	4	9.488	Accept
Project ownership	9.38	4	9.488	Accept
Project needs assessment	10.31	4	9.488	Reject

*0.05 level of significance

Since the calculated chi-square values for ôStakeholder identificationô (8.26), Stakeholder engagement (8.18) and project ownership (9.38) are less that the chi-square table value of 9.488 at 4 degrees of freedom and 0.05 level of significance, null hypothesis for the three indicators were accepted. Nonetheless, the fourth indicator óproject needs assessmentô with a chi square value of 10.31 against chi square tabulated value of 9.488 at 4 degrees of freedom and 0.05 level of significance had its null hypothesis rejected because the chi square value was greater than the chi square table value.

Table 4. 23: Alternative sources of water for Galana-Kulalu food security project

Alternative water source	**Respondents**	**Percentage %**
None	29	46.0
I donôt know	9	14.3
TARDA	9	14.3
River Tana	7	11.1
Existing water pans	5	7.9
Bore holes	2	3.2
Rain	1	1.6
Mega dam	1	1.6
Total	**63**	**100**

4.8 Interview results on the factors influencing the performance of Galana-Kulalu food security project in Kilifi County.

In establishing how resource management influenced project performance of Galana-Kulalu food security project, one of the interview questions sort to determine how competing interests in land utilization and investment priorities was managed. It was established that the project utilized only 0.83% of the total 1.2 million acres of Galana-Kulalu ranch. With regards to other resources, river gauging was done on River Galana to establish its volume and determine the maximum volume for abstraction per given time. Water pans were constructed and existing ones rehabilitated by the project for watering pastoralistsô animals including ADC livestock and wildlife. Besides, farming communities around the project were supported with portable irrigation kits (water pumps and pipes). Therefore the chi-square value X^2=8.90 obtained for ólandresource managementô was hence confirmed.

Agricultural inputs were used optimally (chi-square value $X^2=2.01$ obtained for óagricultural inputs resource managementô) guided by seed trials for quality and yield and soil sampling for bio-chemical composition. When asked about the ability of River Galana to sustain optimum production of irrigated maize, it was discovered that the river has the ability to irrigate 20,000 acres with normal flow. However with the development of a 2 billion cubic meter dam across River Galana, the river could comfortably sustain 400,000acres of irrigated land.This was a matter of great concern to the interviewees and hence great significance to the performance of the project as confirmed by the chi-square value $X^2=3.13$ obtained for ówater resource managementô.The interviewees believe that additional investment in irrigation infrastructure means additional land under irrigation subject to water availability. This however is not bore little significance based on the chi-square value $X^2=6.93$ obtained.

All the respondents interviewed expressed concurrence with the validity and relevance of the feasibility assessment conducted (chi-square value $X^2=3.03$ *and* $X^2=6.93$ respectively). However, reliability of the feasibility results was marred with vagueness and generality. The results of the feasibility were for the entire 1.2 million acres and could not cater for the specific needs of the 10,000 acres model farm foe instance the soil sampling results obtained were lacking in many ways for the model farm. The chi-square value $X^2=40.51$obtained for

ôReliability of results of feasibility assessmentô confirms this. Further, the accuracy of the feasibility assessment results obtained could not be guaranteed (chi-square value $X^2=39.45$) especially with the information about the volume of water at Galana-Kulalu being able to sustain the project, and the design alteration and redesigning of the water in-take point at the river.

All the respondents interviewed asserted to argument that financial stewardship influences project performance in Galana-Kulalu food security project. In reference to Table 4.24 below, save for politics and stakeholder disputes over resources utilization, all other factors listed as having negatively affected project implementation are related to financial stewardship. Budget development did not factor in infrastructure and basic amenities such as roads, schools, health facilities and staff housing. Budget development is an important indicator as evidenced by the chi-square value $X^2=2.04$.Interviewees were not satisfied with the contingencies put in place to cater for emergencies such as the flooding of River Galana and associated destruction especially to the water intake area resulting to unnecessary delays post flooding. Risk management had a chi-square value $X^2=2.72$. Procurement laws and procedures (chi-square value $X^2=4.64$) included contractor default that can be blamed on procedure of hiring the project contractor. Budget management on the other hand encompasses National governmentôs cash flow problems to the project that has been significantly cited as having negatively affected project implementation at chi-square value $X^2=1.01$.

Table 4. 24: Factor that negatively affected project implementation

Factor that negatively affected project implementation	No. of respondents	Percentage respondents
Procurement procedures	3	60
Government cash flow problems	2	40
Politics	2	40
Lack of infrastructure and basic amenities	2	40
Nature of River Galana	2	40
Budget cuts	1	20
Stakeholder disputes over resources utilization	1	20
Total	**5**	**100**

From the interviews, respondents confirmed that indeed needs assessment influenced project performance in Galana-Kulalu food security project. When asked about stakeholder identification respondents responded by listing the various stakeholders in the project as Kenya Agriculture and Livestock Research Organization (KALRO); KEPHIS; seed companies; NIB; Ministries of Agriculture, Livestock and Fisheries; Energy;Interior, County government of Kilifi, County government of Tana River, ADC, KWS among others. Stakeholder identification had a chi-square value $X^2=8.26$.Stakeholder managementwith a chi-square value $X^2=8.18$ was measured by stakeholdersô involvement in project implementation. Project ownership was determined by the extent at which stakeholders felt like they understood, agreed with and owned the project. While some felt so, many others felt the project lacked comprehensive stakeholder involvement plan. Project ownership had a chi-square value $X^2=9.38$.

When asked whether the projectôs interventions were in agreement with stakeholdersô needs expressed during assessment, most respondents felt that the projects intervention only met stakeholdersô expectations to some extent as expressed prior to project commencement (chi-square value $X^2=10.31$). This is partly because the project was formulated with a bigger outlook (national outlook) and hence could not meet very specific local stakeholdersôneeds.

Table 4. 25: Key Performance Indicators (KPIs) for Galana-Kulalu food security project

Project's Key Performance Indicators (KPIs)	No. of respondents	Percentage respondents
Maize yield	5	100
Infrastructural development (including irrigation installations)	4	80
Socio-economic impact created	3	60
Project duration	2	40
Projectôs impact on the environment	2	40
Skills transfer	2	40
Cost of production	1	20
Total	**5**	**100**

4.9 Checklist results on the factors influencing the performance of Galana-Kulalu food security project in Kilifi County.

Available land for the project with agricultural potential was 1.2 million acres but only 10,000 acres had been used as a model farm. The main limiting factor being irrigation water as River Galana has a potential of only 20,000 acres with normal flow. The daily pumping capacity was 264,000 cubic meters against a daily irrigation requirement of 178,000 cubic meters. At the time of the study though, no pumping was happening as rehabilitation works were underway at the water intake point along River Galana following floods that had shifted the river course away from the water intake point. There was no other water usage within the project other than irrigation. Other than irrigation in the project area, alternative water users were identified as domestic and small scale irrigation farmers. 40 acres were placed under mulch to control soil water loss. There were however plots under surface runoff though the scale was insignificant. Fertilizer was used at the rate of 200kilograms per acre. There were 13 maize seed varieties under trial mainly for climatic tolerance and yield levels on all plots. The project has 13 water pumps with an average daily usage of 13,200 cubic meters and 2 reservoirs.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter briefly presents study finding, discussesthe study finding, comparing with similar study findings ending in conclusion and study recommendations. It offers suggestions for future studies in the study area or on a related area as well.

5.2 Summary of findings

This study sort to investigate factors influencing the performance of flagship projects in Kenya: the case of Galana-Kulalu food security project in Kilifi County. The four objectives under study included determining the extent to which resource management, the use of pre-feasibility assessment, financial stewardship, needs assessment influence project performance in Galana-Kulalu food security project.

Under resource management, four indicators were identified and tested and the following results obtained: Land resource management with a chi-square value;$X^2=8.90$; Agricultural inputs resource management with a chi-square value, $X^2=2.01$; water resource management with a chi-square value, $X^2=3.13$ and development of irrigation infrastructure with a chi-square value, $X^2=6.93$. Essentially, the four indicators had their null hypothesis accepted meaning that resource management indeed hadan influence on project performance in Galana-Kulalu food security project.

On the other hand, the quality of feasibility assessment as a constructhad four indicatorswhose hypotheses were tested usingchi-square test as separate entities.The first indicator, validity of feasibility assessment whose chi-square value, $X^2=3.03$ and the second, relevance of feasibility assessment which had chi-square value, $X^2=3.26$ had their null hypotheses accepted as they indicated possible influence they had on performance of Galana-Kulalu food security project. To the contrary the other two indicators thus reliability of feasibility assessment with a chi-square value, $X^2=40.51$ and accuracy of results of feasibility assessment with a chi-square value, $X^2=39.45$indicated no influence on project performance and thus their nulls were ultimately rejected.

As for financial stewardship, the four indicators under study were subjected to hypothesis testing by the chi-square. The chi-square values obtained informed the decision on null hypothesis as follows: Budget development chi-square value, $X^2 = 2.04$; Risk management strategies chi-square value, $X^2 = 2.72$; procurement laws and procedures chi-square value, $X^2 = 4.64$ and Budget management chi-square value, $X^2 = 1.01$.Therefore the null hypotheses under these indicators were accepted pointing out to the existing influence the four indicators had on the project performance.

Like the other three variables under study, needs assessment too had four indicators that were tested separately and whose chi-square values are as follows: stakeholder identification chi-square value, $X^2 = 8.26$; stakeholder engagement chi-square value, $X^2 = 8.18$; project ownership chi-square value, $X^2 = 9.38$and project needs assessment chi-square value, $X^2 = 10.31$. Except for project need assessment whose null was rejected as it did not have any influence on project performance, the other three indicators had their null accepted. This was an indicator that the three indicators had an influence of performance of Galana-Kulalu Food security project.

5.2 Discussion

The study revealed thatresource management was an important factor influencing the performance of Galana-Kulalu food security project. It was revealed that land resource management was statistically insignificant since chi-square value; $X^2 = 8.90$. Besides, this study show that land resource management influence project performance in Galana-Kulalu food security project. This was further supported by the checklist information that pointed out to available land resource, water resources sufficient for the area under production currently (10,000acres). Similarly, agricultural inputs resource management was found to be statistically insignificant, chi-square value, $X^2 = 2.01$,and influencing project performance in Galana-Kulalu food security project,and so was water resource management which had chi-square value, $X^2 = 3.13$. From the checklist, it was discovered that the rate of fertilizer application was twice the recommended rate of 100 kilograms per acre. However, according to Morris (2007) Africa is still experiencing underutilization of fertilizer particularly N-fertilizers and low yielding seeds leading up to poor yield especially of cereal crops. The study went on to indicate that development of irrigation infrastructure was equally insignificant as it had a chi-square value, $X^2 = 6.93$. Essentially, development of irrigation infrastructure was found to influence project

performance in Galana-Kulalu food security project. These findings were in agreement withAl-Kharashi and Skitmore (2009) who argued that optimal resource allocation and utilization have the possibility of ensuring better-than-expected budget, better-than-expected schedule performance and overall project success.

The findings also showed that validity of feasibility assessment was insignificant because $X^2 = 3.03$ at 0.05level of significance. Further, the study established that validity of feasibility assessment doesinfluence performance of Galana-Kulalu food security project. This is exactly what Achilike and Akuwudike (2015) alludethat feasibility assessment can only stand the test of time if correct assumptions based on correct facts are employed in the study. Further, management should see the conduct of feasibility assessment as prerequisite to project implementation alongside competent, honest and suitable personnel to oversee the feasibility studies. This statement was supported by interview responses who asserted that Galana-Kulalu food security project had competent local staff whose skills are constantly being enhanced. Besidesquestionnaire respondents alluded to the relevance of feasibility studies with a statistically insignificant chi-square value, $X^2 = 3.26$ at 0.05level of significance.

On the other hand, it was revealed that despite the importance and relevance of feasibility studies, other critical factors in play are likely to negatively affect the project if not considered. According to Achilike and Akuwudike (2015), such include downright dishonesty, sheer incompetence and employment of unsuitable staff. As such, reliability of feasibility assessment did not influence project performance in Galana-Kulau food security project in Kilifi County. Reliability of feasibility assessment was found to be significant with a chi-square value, $X^2 = 40.51$. This was the case with accuracy of results of feasibility assessment which was found to be significant because X2= *39.45*and indicated no influence on project performance of Galana-Kulalu Food security project. From the interview responses, it was evident that the feasibility study results could not be relied upon during project implementation to a greater extent. The best illustration was the alteration in design and location of the water intake water, general nature of the soil testing results and the water volumes in the river.

The study found that the variable budget development was insignificant since chi-square value, $X^2 = 2.04$ at 0.05 level of significance. Further the study found that projects requirements were accurately identified during budgeting and that influenced performance of Galana-Kulalu food

security project. This is in line with Moira (2017) who propounds that prior to setting up budgets, project requirements must be accurately identified, documented and verified with all stakeholders and communicated to involved parties. From the findings, the study noted that budgeting for surprises, building in contingencies during budgeting influences project performance in Galana-Kulalu food security project.The study also found out that risk management strategies were insignificant as chi-square value, $X^2 = 2.72$ at 0.05 level of significance. This is in agreement with Moira (2017) argument that during budgeting considerations should be put on factor outside of the project managerôs control, like external environmental considerations likely to affect pricing of resources, supplies, labor, financing, currency exchange and elements of weather for agricultural projects. Interview respondents indicated that flooding of River Galana and subsequent destruction of the water intake point and the shifting of the river channel were unanticipated acts of god and greatly affected performance of Galana-Kulalu food security project.

Further the findings show that procurement laws and procedures influence project performance in Galana-Kulalu food security project.It also showed that are statically insignificant since chi-square value, $X^2 = 4.64$. These findings agree with the assertion by Kennard (2006) that procurement procedures can potentially reduce costs, shorten timescales and enhance stakeholder relationships besides reducing risks and improving overall project performance. The findings indicated that the indicator budget management was insignificant because chi-square value, $X^2 = 1.01$ and thus influences project performance in Galana-Kulalu food security project.KPIs are important budget monitors able to inform budget utilization and expenditure deviation from the budget. Moira (2017)argues that budget overruns and budget cuts are born out of poor budget management and are a litmus test for a successful or unsuccessful project.

Study findings established that stakeholder identification, stakeholder engagement, and project ownership influence performance of Galana-Kulalu Food security project in Kilifi County except project needs assessment. It was revealed that stakeholder identification influences project performance in Galana-Kulalu food security project and remains statistically insignificant with chi-square value, $X^2 = 8.26$ at 0.05 level of significance. From the study, it is evident that stakeholders mapping was done prior to project initiation which according to Reed et al (2009), encompasses stakeholder identification, stakeholder differentiation and categorization; and inter-

stakeholder relations. On the other hand, stakeholder engagement was found to be statistically insignificant sincechi-square value, $X^2 = 8.18$. In concurrence, Missonier and Loufrani-Fedida (2014) allude that the emergent and dynamic nature of stakeholder relationships means that their roles, nature and relations evolve simultaneously with the trajectory and definition of the project.

Further the findings show that project ownership influences project performance in Galana-Kulalu food security project and is insignificant with a chi-square value, $X^2 = 8.18$.Olsson and Berg-Johansen (2016) define a project owner as a stakeholder who has control and profit responsibility and has incentives with which to maximize the value creation pertaining to the project. Essentially, a project owner bears the incentives for weighing project costs against benefits for a particular project.In agreement with study findings, Berg-Johansen (2015) considers government projects and argues that different stakeholders have different responsibilities with regards to project cost and project benefits. As such, the term project owner Responsibility for project cost is solely the prerogative of a governmental agency, tasked with providing the new infrastructure in line with traditional project management perspective on cost, time and according to specification. Project owners hence are found in these government agencies.

From the study findings, project needs assessment did not have any influence on performance of Galana-Kulalu food security and project. It was further revealed that this indicator was statistically significant as chi-square value $X^2 = 10.31$.Rojas and Figueroa (2018) emphasize on the relevance of the priorities set by the main stakeholders and insists that that should form the principal criteria for project selection. Where needs assessment was lacking in procedure or content or both, it is highly unlikely that projects interventions metstakeholdersô needs.

5.3 Conclusions

The study concluded that resource management influences project performance in Galana-Kulalu food security project. Level of utilization of water, land and agricultural inputs resources influenced project performance in Galana-Kulalu food security project. The study established that there exist small disputes among stakeholders that affect full utilization of resources consequently influencing project performance in Galana-Kulalu food security project.

Similarly, the study deduced that validity of feasibility assessment andrelevance of feasibility assessment influences project performance in Galana-Kulalu food security project. The study established the role played by feasibility assessment in project implementation of such a magnitude, however general the study may have been. However, reliability of feasibility assessment and accuracy of feasibility assessment do not influence project performance in Galana-Kulalu food security project. This was evident in the study by the discrepancies recorded between the expected and the actual project outcome based on feasibility assessment results.

Further, it was also revealed that financial stewardship influences project performance in Galana-Kulalu food security project since budget development, risk management strategies, procurement laws and procedures and budget management influence project performance in Galana-Kulalu food security project. There were grey areas that out to have been covered, such as failure in planning around emergencies and unexpecteddisruptions on the systems and infrastructure of the project. This caused unnecessary delays. Besides, there are crucial machines and equipment that were yet to be delivered at the time of study, or had been supplied way beyond the scheduled time or were supplied earlier than scheduled. Budget cuts and slow cash remittance from treasury is causing disputes between the contractor (Green Arava) and NIB and causing serious delays on project implementation. Moreover, there seemed to have been no proper plan and budget allocation for some crucial activities such as maize variety trials, which only came after the first harvestyield fell short of expected yield.This was further illustrated by the lack of basic amenities like health facilities, schools, staff housing, storage facilities (silos), electricity for machine operations and water purification plant for domestic use, five years into project implementation.

The study also revealed that stakeholder identification, stakeholder engagement, and project ownership influence project performance in Galana-Kulalu food security project. While stakeholders were adequately identified, there lacked proper stakeholder mapping which would help the project manager in stakeholder classification according to relevance, and in determining when and where to have them involved in the project. Preference was accorded members of the national project steering committee comprised of government ministries and agencies, the contractor and implementing agency to the local coordinating committee members who include host county leadership and local communities. While this does not necessarily imply isolation on

the part of the project leadership, there could be underlying factors that were yet to be resolved that prompted lack of involvement on the part of some stakeholders.

5.4 Recommendations

The study recommends that:

1. A greater involvement of host county governments of Kilifi and Tana River in the project activities especially that agriculture is a devolved function would move a long way in enhancing local stakeholder involvement in addition to resolving disputes on resource utilization and allocation.

2. Amendments should be done to the project design considering the discrepancies between the feasibility assessment results and the actual project implementation results on a number of issues, particularly on the nature of River Galana and its ability to sustain the project as envisioned in the feasibility study.

3. The government considers setting up a special fund at the treasury for the project in order to avoid the long bureaucracies at treasury from claims appraisals to approvals and disbursement of funds to the project. The long procedures at treasury are causing serious disruptions on the projectôs budget leading up to contactor defaults that cause massive project delays. This should go hand in hand with increasing the number of contractors from the current one. This will enhance quality delivery and cut on implementation time. In the same breath, the project should invest in critical amenities like health facilities, staff houses, schools and connection to the national grid as envisioned in the feasibility assessment in order to improve staff performance and cut on operation costs.

4. The project leadership should find a way of enhancinginvolvement of the national project steering committee and the local coordinating committee in the project activities. Besides, the project leadership should consider reconstituting these two critical committees to ensure balance and inclusivity of all stakeholders and to align their expectations with the objectives of the project aimed at achieving ópproject ownershipôon the part of key stakeholders for project sustainability.

5.5 Suggestions for further studies

The researcher identified the following potential study areas in future:

1. The impact of feasibility studies on the implementation of flagship projects in Kenya.
2. This study was done at Galana-Kulalu food security project. There are a number of flagship project within the five coastal counties that can be studied for comparison of findings.

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APPENDICES

APPENDIX A: Letter of Transmittal

Mulupi, Levi Murasi

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Email: mmurasi29@gmail.com

DATE: 5November 2018.

The General Manager/CEO

National Irrigation Board (NIB)

Unyunyizi House, Lenana Road

P.O Box 30372, 00100, NAIROBI.

Dear Sir,

RE: DATA COLLECTION

I am a student undertaking a post graduate degree course in Project Planning and Management at the University of Nairobi, Mombasa Campus (Malindi Centre). As part of the requirement for this program, I am required to undertake a research. My research topic is ñPerformance determinants of flagship projects in Kenya: the case of Galana-Kulalu food security project in Kilifi County.ò

I am requesting you to allow me undertake my research at the Galana-Kulalu food security project as well as data collection. The information gathered will be treated with utter most confidence. The data collected will purely be for academic purposes.

Thank you.

Yours faithfully,

Signé é é é é é é é é

Mulupi, Levi Murasi

APPENDIX B: Letter of Transmittal – Self Introduction

MULUPI, LEVI MURASI

0722146426

Dear Participant,

My name is Mulupi Levi Murasi and I am a student undertaking a post graduate degree course in Project Planning and Management at the University of Nairobi. To fulfill the requirements for the completion of this course, I am carrying out a study examining performance determinants of flagship projects in Kenya: the case of Galana-Kulalu food security project in Kilifi County. I am inviting you to participate in this research study by completing the attached questionnaire and answer the questions sincerely.

In you choose to participate in this research, please answer all the questions as honestly as possible. Participation is strictly voluntary and you may decline to participate at any time. The data collected will be for academic purposes only.

Thank you.

Yours faithfully,

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Signé é é é é é é é ..

APPENDIX C: Research Questionnaire

Please tick or fill in the blank spaces where appropriate to you

SECTION A: BACKGROUND INFORMATION OF THE RESPONDENTS

1. What is your gender? (*Please tick*)

Male [] Female []

2. What is your age? (*Please tick*)

18 ï 35 years [] 36 ï 55 years [] Above 55 years []

3. What is your highest level of education? (*Please tick*)

Primary School [] Oôlevel [] Certificate/Diploma [] Bachelorôs Degree [] Others[]

If others please specifyé é

4. For how long have you lived in Kilifi County (*Please tick*)

Native [] 1 ï 3 years [] 4 to 6 years [ ] Over 7 years []

SECTION B: RESOURCE MANAGEMENT

5. Do you think that the level of utilization of resources (land, water agricultural inputs& irrigation infrastructure development) influenced field level maize productivity?

   YES []

   NO []

6. Please tell me whether you agree or disagree with the following statement by **Ticking (√)** in the appropriate space.

	Statement	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
A	From the onset, there were disagreements on land utilization and investment priorities.					
	Fertilizer was excessively over					

B	utilized leading affecting field level maize productivity					
C	Available water for irrigation at Galana-Kulalu food security project is determined by the nature of the Galana River.					
D	Additional investment in irrigation infrastructure will avail additional irrigation water to the project.					

7. Was there participatory prioritization of water use in the irrigation project among project stakeholders?

   YES []

   NO []

List the additional irrigation infrastructure required.

SECTION D: QUALITY OF FEASIBILITY ASSESSMENT

8. Do you think feasibility study was conducted prior to project launch?

   YES []

   NO []

9. Do you think a project of such a magnitude would require more than one feasibility study?

   YES []

   NO []

10. Please tell me whether you agree or disagree with the following statement by **Ticking (√)** in the appropriate space.

		Strongly				Strongly

	Statement	Disagree	Disagree	Undecided	Agree	Agree
A	Feasibility study results were dependable enough to inform decisions during planning					
B	Feasibility study results enabled project implementation.					
C	Feasibility study results were consistent.					
D	Feasibility studies measured every parameter for accuracy prior to committing money, time and resources.					

11. Are there discrepancies observed between feasibility studies results and actual project implementation results so far?

    YES []

    NO []

List the discrepancies observed

SECTION D: FINANCIAL STEWARDSHIP

12. Do you think projects can run efficiently and effectively without budget management?

    YES []

    NO []

13. Do you think budget cuts are an indication of a failing project?

    YES []

    NO []

14. Please tell me whether you agree or disagree with the following statement by **Ticking (√)** in the appropriate space.

	Statement	Strongly	Disagree	Undecided	Agree	Strongly

		Disagree				Agree
A	Projects requirements were accurately identified prior to setting up budgets					
B	Contingencies were built in during budgeting, factoring in things beyond the control of the project manager.					
C	Budget overruns were caused by lack of full implementation of procurement laws and procedures					
D	Revision of project costs delay project delivery					

15. Do you think procurement laws and procedures were fully followed in the project?

    YES []

    NO []

Explain your answer

16. Do you thinkStakeholdersô input was considered during budget preparation?

    YES []

    NO []

SECTION E: NEEDS ASSESSMENT

17. Do you think participatory needs assessment enhances project ownership and involvement of stakeholders?

    YES []

    NO []

18. Please tell me whether you agree or disagree with the following statement by **Ticking (√)** in the appropriate space.

	Statement	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
A	Project Stakeholder were identified and mapped during stakeholder analysis					
B	Stakeholder engagement was done in the course of project implementation					
C	Stakeholders have a sense of ownership for the project					
D	Needs assessment was done prior to project planning					

List the important stakeholdersô needs

Explain briefly

19. Could you say that needs assessment done was participatory?

    YES []

    NO []

Explain briefly

20. Do you think needs assessment should have been done differently?

    YES []

    NO []

Please explain your answer.

APPENDIX E: Interview Questions

1. What is the relationship between NIB (as the implementing agency) and the County government of Kilifi on project ownership and issues around irrigation governance?

   é .

   é .

   How has this relationship affected project performance?

é .

é .

2. How did you manage competing interests on land utilization and investment priorities among stakeholders?

   é .

   é .

3. What do you think about the level of utilization of resource utilization especially land, water and inputs?

   é .

   é .

   How has it affected project performance?

   é .

   é .

4. What would you say about the extent of participatory prioritization of the use of resources among stakeholders?

   é

   é

   List the stakeholders involved.

   é

   é

5. What do you think about Galana Riverôs ability to sustain optimum production of irrigated maize?

   é

   é

6. How does the project stand to benefit from additional investment in irrigation infrastructure?

   é

   é

   List the areas of irrigation infrastructure investment you deem necessary.

   é

   é

7. What would you say about the relevance of feasibility studies in informing decisions during planning and implementation of the project?

é é
é é

8. Tell me about the Key Performance Indicators (KPIs) for this project

é é
é é

9. What has significantly affected the implementation of Galana-Kulalu food security project?

é é
é é

10. What is your opinion about project interventions being in agreement with the needs expressed by the community during needs assessment?

é é
é é

11. What is the level of implementation of the project at the moment?

é é
é é

12. What is the sustainability plan for Galana-Kulalu Food security project?

é é
é .

THANK YOU FOR TAKING TIME.

APPENDIX D: Checklist

Researcher: Mulupi, Levi Murasi

Masters Student at University of Nairobi, School of Continuous and Distance Education

Department: Extra Mural Studies, Mombasa Campus (Malindi Centre)

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SITE ______________________________Date of observation _________________________

NOTE: The researcher will fill out the checklist with the help of the Resident Engineer NIB.

S/N	Item Description	Unit of Measure	Quantity	Remarks
1	Available land	Acreage		
2	Used Land	Acreage		
3	Daily water pumped	Cubic meters		
4	Daily water usage for irrigation	Cubic meters		
5	Other daily water within the project	Cubic meters		
6	Alternative water users other than the project	Average users/day near the project area		
7	Soil water conservation	Acreage under mulch		
		Number of plots with surface runoff		
8	Fertilizer usage	Kilograms/Acre		
9	Seeds trials	Acreages under trial seeds		
		Number of seed varieties under trial		
10	Water pumps	Pieces		
11	Pump usage	Average volume/day		
12	Reservoirs	Number		

THANK YOU FOR TAKING TIME.