PARTICIPATORY MONITORING AND EVALUATION, CAPACITY BUILDING OF STAKEHOLDERS AND PERFORMANCE OF FISH FARMING PROJECTS: A CASE OF ECONOMIC STIMULUS PROJECTS IN NYERI COUNTY, KENYA

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DECLARATION

This thesis is my original work and has not been presented for an award in any other University.

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This work is dedicated to my wife Dorcas, children Abby, and Ashley.

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ABBREVIATIONS AND ACRONYMS

CDFC	:	Constituency Development Fund Committees
CPTC	:	Constituency Projects Tender Committee
DFO	**:**	District Fisheries Officer
ESP	**:**	Economic Stimulus Program
FAO	**:**	Food and Agriculture organization
GOK	:	Government of Kenya
ICT	:	Information Communication and Technology
JSMCS	**:**	Joint Stakeholder Management Committees
PM&E	**:**	Participatory Monitoring and evaluation
MOPND	:	Ministry of Planning and Development
MOU	**:**	Memorandum of Understanding
PM&E	**:**	Participatory Monitoring and evaluation practices
PSM	:	Project stakeholders Management
SABS	**:**	Stakeholder advisory boards
SPMC	:	Stimulus Project Management Committee
UNDP	:	United Nations Development Programme

ABSTRACT

This study sought to establish the mediating influence of capacity building on the relationship between the PM&E and the performance of fish farming projects in Nyeri County in Central Kenya. The specific objectives were: to examine the extent to which stakeholder participation in M&E during project design influences the performance of fish farming projects; to assess the extent to which stakeholder participation in M&E during project implementation influences performance; examine the extent to which stakeholder participation in utilization of M&E results influences the performance; determine how the combined influence of PM&E influences the performance, and to establish the mediating influence of capacity building on the relationship between PM&E and the performance. This study adopted a pragmatic research paradigm for a mixed research method in a concurrent research design. The study targeted all the eight fish farming projects funded by the ESP programme in Nyeri County and the sample size was calculated based on Yamane (1967) formula. The study adopted both probability and non-probability sampling techniques. The sample size is 271 respondents comprising of 247 farmers, 8 project managers and 56 committee members from a population of 653 stakeholders. Structured questionnaires were administered to collect quantitative data from selected farmers, focus group discussions were conducted to collect qualitative data from the constituency project management committee members while interviews were administered to project managers. The instruments were tested for validity and reliability through the content validity index (CVI=0.833) and the Cronbach Alpha's internal consistency index (a=0.795) for reliability. Pearson's correlation and regression models were used to analyse quantitative data while qualitative data was analysed using content analysis. The study found out that the level of stakeholder participation during project design was average (M=3.38), average during implementation (M=3.45) and average during utilization of M&E results (M=3.43) .The study established a significant influence of stakeholder participation in M&E during project design ($t=10.02$, $p<0.05$), during implementation ($t=10.07$, $p<0.05$), in utilization of M&E results ($t=8.38$, $p<0.05$) and combined PM&E ($t=10.88$, $p<0.05$) on performance of fish farming projects. Further, capacity building had a partial mediating influence on the interaction between PM&E and performance of fish farming projects. The study recommends that fish farming projects should increase the level of stakeholder participation in M&E at all stages of PM&E ranging from project design, implementation and utilization of M&E results so as ensure capacity building and consequently project performance. The study provides a capacity building model for strengthening the relationship between PM&E and performance of fish farming projects.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

The Global economic crisis of experienced in 2008 has been considered to have been the worst financial crisis to have been faced since the 1930s great depression. This crisis was evidenced by job losses, poverty and food insecurity according to IMF, 2010 report. According to International Labour Organization, the crisis resulted to global unemployment level of 178 million in 2007 and shooting up to 212 million in late 2009. This included 75 million youths, an increase of more than 4 million. In Kenya, the employment challenge has been growing with the youth being the main casualty, the rate stands at 40 % up from 12 % in 2009 (ILO, 2012).The crisis also left a number of people without enough food to eat on a regular basis high, at over 800 million with over 60% of the world's undernourished people living in Asia, and a 25% in Africa. The proportion however, is greater in Africa (33%) than Asia (16%). According to FAO (2012) there are 22 countries, 16 of which are in Africa, in which the undernourishment prevalence rate is over 35%.

Despite the fact that Kenya is considered by economists as the best developed economies in the region of East Africa, the country is still a low income, ranking 128th amongst 169 countries in the United Nations development programmes human development index. Consequently, 79% of the population in Kenya resides in the rural areas of the country, relying on agriculture for its income. Evidently, nearly half the country's 40 million people are poor and unable to meet the daily nutritional requirements. According to World Bank report (2010), the rural economy is dependent on smallholder agriculture producing 75% of the total agricultural output.

To alleviate these challenges, global economies resulted to Economic Stimulus Programmes. These are interventions of financial relief provided by governments in form of funds provided to weaker sectors of an economy such as infrastructure and agriculture (Burtless, 2010).These programmes were implemented with varied performances in the specific projects, sectors and countries in the United Kingdom, Malaysia and South Africa (IMF, 2010).

In Kenya, The Economic Stimulus Program (ESP) was launched in 2009. This was after the economy of the country marked a decline growth rate from 7.1 percent to 1.7 percent (Government of Kenya, 2009). It was meant to stimulate the growth of the economy all over the country by supporting projects in education, health and sanitation, food production, environment, local government, industrialization and fishery sectors. In the fisheries sector, the focus was creating employment and income opportunities, improving food security to alleviate poverty enhance sustainability of fish farming by constructing fish ponds in every constituency at a unit cost of Kshs.40,000. During the 2011/2012 accounting year, the Ministry of Fisheries Development was allocated Ksh 2.686 billions in an attempt to implement fish farming under the ESP in 160 constituents, Nyeri County among them, (GOK, 2009).

1.1.1 Performance of projects

Performance of a project has been an area of great concern eliciting debate among stakeholders such as scholars, investors, donors and governments. As a result a variety of performance measures have been fronted for evaluating the performance of a project (Singh, Gkritza, and Sinha, 2007). Identifying appropriate measures of performance of projects has been sought so as to inform government agencies determine the most efficient allocation of resources.

Many performance measures have been proposed and used to evaluate the performance of projects. However, not all measures apply to each type of project. Factors such as geographic location, type of investment, and purpose of investment may determine which performance measures are best suited for each project. As a result of this discourse, performance measures have been agreed upon in terms of net change in income, employment and output. This has been in consideration of usefulness to the public, usefulness for decision-making the purpose of project, type of project, and impact area (Gkritza, Labi, and Sinha, 2007). The argument is that the measures of success such as economic viability for the state, internal rate of return and payback period, should all be aligned with indicators that the project stakeholders are comfortable with, in terms of application and utilization of results. Therefore, for the purpose of this study, performance is taken as the net change in income, jobs created, output in food in form of fish, quality of fish, completion rate and project sustainability are as outlined as the objectives of ESP in the fisheries sector (MOFD 2014).

1.1.2 Participatory Monitoring and Evaluation in Fish Farming Projects

Participatory Monitoring and Evaluation (PM&E) at a stakeholder perspective is a generally new concept was only popularized in early 1990s (Kadzikano and Chishawa, 2001). PM&E is a process whereby stakeholders are involved in self-assessment, generation of knowledge, definition of M&E objectives and indicators, collect and analyze data, and undertake actions informed by lessons learnt from the process (Rossman, 2012). Further, PM&E offers stakeholders opportunities to participate in M&E during design, implementation, and utilization of results in an endeavor to better the outcomes of the initiatives implemented by either Government or private businesses.

Recently, PM&E has become more prominent as opposed to traditional methodologies of M&E in the emerging economies especially in Africa (Tana, Onyango, Ochola and Omolo, 2012). In traditional monitoring and evaluation the process was based on judgmental reports by external experts engaged to evaluate the project against the objectives rather than involving all stakeholders throughout the process of generating objectives, defining indicators and crafting local solutions. PM&E is brought about by evaluation of change through activities undertaken by all stakeholders involved in the initiative and its outcomes. Further, studies argue that the other role of PM&E is to utilize M&E information collected by stakeholders for the purposes of making critical decisions to improve project performance (Hinchliffe, 2005).

In Kenya, the practice of PM&E has evolved through time since the 1960s as evidenced several interventions in Sessional Papers. For instance, the findings of a study by Chitere and Ireri (2004), record that it was very elaborate in the District Focus for Rural Development that became operational in 1983. Other landmark events in the evolution of PM&E include the Physical Planning Act in 1996, The Local Authority Service Delivery Action Plan (LASDAP) in 2001 and Constituency Development Fund (CDF) established in 2003. To achieve the objectives of ESP, the programme was to be implemented through PM&E whereby, farmers and fisheries officials were to constitute an implementing agency of the projects at the constituency level (GoK, 2013).

This study sought to investigate the link that exists between PM&E and performance of fish farming projects in Nyeri County. Schreiber, Bearlin, Nicol and Todd (2004) recommend studies on different aspects of monitoring and evaluation practices in government projects. They further stressed on the efficacy of combining quantitative and qualitative indicators of M&E in fish farming projects. In Asia and Africa alike, PM&E has been concerned with the selection of the appropriate parameters of fish farming projects. The emphasis here has been the determination of the role stakeholders in the projects. Rather than concentrate on performance of fish farming projects, researchers suggest that improving fish farming can uplift the wellbeing of the fish farming communities and by extension the whole economy (Oakley, 2008). This study sets out to pursue this, by assessing the contribution of PM&E in terms of the overall performance fish farming projects in Nyeri County.

1.1.3 Capacity building of Farmers in Fish Farming Projects

The concept of capacity building has different meanings to different people. However, in general capacity building relates to strengthening or enhancing an organization's or individual's capacity to achieve goals. This concept emerged in the lexicon of international development during the 1990s. It means an investment in human resources, institutions and practices that aid the countries in the region achieve development goals (World Bank, 2010). Being a new build-up of capabilities, capacity building is practically meant to develop the capabilities of people, communities and organizations. This incorporates analyzing their environment in order to determine their problems, complications, requirements, opportunities and also set strategies to cope with the issues (ILO, 2012).

Globally, the initiative to the understanding of stakeholder capacity building or development was undertaken by The United Nations Development Programme (UNDP). Accordingly, it defined stakeholder capacity building as a long term continual process of development involving all stakeholders including local authorities, ministries, NGOs, stakeholder members, professionals and academics among others. Deborah (2006) and Kaplan (2000) agree that stakeholder capacity building employs the use of resource capabilities, organizational and a country's human resources. Consequently, the aim of stakeholder capacity building is to deal with the problems

relating to policy and development methods while at the same time considering potential limits and the needs of the people concerned.

Independent Kenya has embraced capacity building by aggressive training and private sector involvement in government funded projects. This training ranges from short courses, certificates, diplomas offered in colleges and up to doctoral degrees at university levels. The ESP programme was meant to be implemented through capacity building of farmers in fish farming technologies such as pond construction, stocking, feeding, harvesting and post-harvest handling, (GOK, 2009). During the implementation of the ESP, capacity building of fish farmers was to be conducted by extension officers who visited the projects sites where farmers were trained in groups. A government report revealed inadequate capacity of fish farmers and the extension workers which consequently retarded the growth of the fisheries sector. This inadequacy was rated at a paltry 40 percent (MOFD 2014). The report recommends an investigation on how capacity building has been carried out in government projects. The study further reveals the complexities involved in fish farming such as pond fertilization and food provision and thus the need for training in competencies required for the efficient and effective management of fish projects. They report a significant relationship between training and adoption of technologies by farmers in Nigeria and Bangladesh respectively. The current research therefore found the need to carry out a similar studies in Kenya especially upon the implementation of the Economic Stimulus Programme in the fisheries sector.

1.1.4 Economic Stimulus Programme in the Fish Farming Projects in Nyeri County

Nyeri County is one of the beneficiaries of the Economic Stimulus Program (ESP), launched by the government in 2009. The ESP program supports projects in the education, health and sanitation, food production, environment, local government, industrialization and fishery sectors. The Kenyan ESP in fisheries sector has four objectives namely, to create jobs, produce food and generate income enhance sustainability of fish farming at the constituency level.

The ESP projects are managed at the constituency level. Stimulus Project Management Committees (SPMCs) are charged with the responsibility of implementing the projects through a PM&E process. The SPMCs comprise of representatives from implementing respective line Ministries of Agriculture (Department of Fisheries) the Constituency Development Fund Committees (CDFC) and the fish farmers (MOPND, 2012). The projects are therefore managed through a participatory, empowering process to design, implement and shared utilization of M&E results.

The fish farming performs a vital role in the Kenyan economy. The sector provides employment and income to over 500,000 Kenyans involved in fish farming and closely related activities in several relatively poor areas (FAO, 2014). Kenya has an immense potential for fish farming in the agricultural rural zones (Ngugi *et al,* 2007). These reports have greatly informed the implementation of ESP in fish farming projects in Kenya. The performance of fish farming projects greatly improved after the roll out of ESP but to varying degrees in different Counties varies. For instance, in 2013, the department of fisheries recorded the following performance in Nyeri County.

Despite the equal government expenditure of ESP fish farming projects per constituency, in 2012, Nyeri County was declared the best, ahead of areas earlier perceived as leading in production and consumption such as Kisumu and Homa Bay (GOK, 2009 and MOFD, 2014).

1.2 Statement of the Problem

Economic wellbeing of a country's citizenry is a key to development. The Global economic crisis of 2008 is the worst financial crisis and was manifested in unemployment, poverty and food insecurity. In Kenya, nearly 50% the country's population is poor, food insecure and 40% unemployed. Despite previous economic recovery interventions such as the District Focus for Rural Development (DFRD) of 1983, Physical Planning Act in 1996, The Local Authority Service Delivery Action Plan (LASDAP) in 2001 and Constituency Development Fund (CDF) in 2003, unemployment, poverty and food insecurity remain major problems in Kenya. To remedy this, the government introduced Economic stimulus programme that was envisaged to be implemented through Participatory Monitoring and evaluation. Some studies reveal the contribution of PM&E to performance of projects while others argue

that PM&E is a waste of resources and a public relations exercise. Despite its documented success, it has been observed that PM&E has been inadequate in ESP due to complexities involved in the projects. There is evidence that capacity building can enhance the performance of PM&E processes. Therefore, there is need to investigate the mediating influence of capacity building on the link between participatory project monitoring and evaluation and performance of fish farming projects in Kenya. In 2012, despite equal ESP expenditure of fish farming projects per constituency, Nyeri County was declared the best with 17.2% new jobs created, 68.1% increase in income, and 71.35% increase in fish production. This was by far better than counties earlier perceived as leading in fish farming such as Homa Bay where the rate of adoption was rated at 11.23%. Using the case of Nyeri County where PM&E was used in ESP fish farming projects, the study aimed at investigating how PM&E as utilized in the ESP programme; influences capacity of project participants and project performance. It seeks to prescribe a new capacity building model for the future development of initiatives alongside informing the theory and practice of PM&E.

1.3 Purpose of the Study

The purpose of this study was to establish the influence of capacity building on the relationship between participatory monitoring and evaluation and performance of fish farming projects in Kenya: A case of Economic Stimulus Projects in Nyeri County. In this case aspects of PM&E namely; stakeholder participation in M&E during project design, stakeholder participation in M&E during project implementation, stakeholder participation in utilization of M & E results were operationalized as independent variables. Further capacity building of stakeholders was the mediating variable while performance of fish farming projects was the dependent variable.

1.4 Objectives of the Study

This study objectives to;

1. Examine the extent to which stakeholder participation in M&E during project design influences the performance of fish farming projects in Nyeri County.
2. Assess how stakeholder participation in M&E during project implementation influences performance of fish farming Projects in Nyeri County.
3. Investigate the extent to stakeholder participation in utilization of M & E results influences the performance of fish farming projects in Nyeri County.

4. Determine how the combined influence of PM&E influences the performance fish farming Projects in Nyeri County.
5. Establish the mediating influence of capacity building on the relationship between PM&E and the performance of fish farming Projects in Nyeri County.

1.5 Research Questions

The study attempted to answer the following research questions

1. To what extent does stakeholder participation in M&E during project design influence performance of fish farming projects in Nyeri County?
2. How does stakeholder participation in M&E during project implementation influence performance of fish farming Projects in Nyeri County?
3. To what extent does stakeholder participation in utilization of M&E results influence the performance of fish farming projects in Nyeri County?
4. How does the combined influence of participatory monitoring and evaluation influence the performance fish farming Projects in Nyeri County?
5. To what extent does capacity building mediate on the relationship between participatory monitoring and evaluation and performance of fish farming projects in Nyeri County?

1.6 Hypotheses

This study tested the following hypotheses:

1. **H_A: 1** Stakeholder participation in M&E during project design has a significant relationship with the performance of fish farming projects in Nyeri County.
2. **H_A: 2** Stakeholder participation in M&E during project implementation has a significant relationship with the performance of fish farming projects in Nyeri County.
3. **H_A: 3 S**takeholder participation in utilization of M&E results has a significant relationship with the performance of fish farming projects in Nyeri County.
4. **H_A: 4** Combined influence of participatory monitoring and evaluation has a significant relationship on the performance fish farming projects in Nyeri County.
5. **H_A: 5** Capacity building significantly mediates on the relationship between PM&E and performance of fish farming projects in Nyeri County.

1.7 Significance of the Study

This study is significant in promoting performance of projects both in the fish farming and in other fields of agriculture and other sectors. It will to provide information that can help accelerate fish production growth, thus producing more food, creating opportunities for employment and increase income generation among the youth, women and other members of the society.

This study findings are particularly beneficial to fish farmers and agricultural services personnel as it will provide greater insights on project performance especially toward perusing agribusiness in a sustainable manner. The Directorate of Fisheries may benefit as the information may contribute in policy formulation for the purposes of design, implementation and utilization of M&E results of fish farming projects. Participants will be educated by the findings on the need to seek services such as training from fisheries officers through participation in PM&E. The trainers of fish farmers will include all stakeholder needs into their training manuals in order to better build the capacity of the participants.

Government officials charged with the role project planning are will gain from the findings if they incorporate the aspects of PM&E in their designs and consequently deliver better performance of programmes and policies. PM&E consultants may also utilize the findings to develop tools incorporating tested PM&E aspects. Future researchers may obtain data useful for further studies and developing guidelines for better performance of projects.

1.8 Limitations of the Study

The study was limited in terms of previous studies that could be used to compare the findings, there existed limited empirical studies that examined the mediating influence of capacity building on the relationship between PM&E and performance of fish farming projects. However the study was able to link the relationship of individual independent variables and performance of fish farming projects with findings of previous studies that examined similar or closely related variables such as sustainability and business performance.

The other limitation concerns the source of the data. To establish the performance of fish farming projects the study collected data from the farmers although data from the project managers seemed to be to be more reliable. To mitigate this limitation, the study used both sources to validate the data obtained.

The study also experienced difficulties in the translation of some of the key terminologies into the local language among respondents not having a good understanding of English. In these cases, the target respondents with lower levels education were in advance previously and terminologies interpreted for them so as to minimize non-response rate.

Another limitation of this research was the reliance on self-administration of the questionnaire to a larger extent, which could affect the integrity of the data provided. This was overcome by integrating with the use of focus group discussions to collect data helping to reduce response biases that this might have introduced. However, this further qualitative data whose analysis is guided by fewer universal rules and standardized procedures than statistical analysis and would ordinarily raise questions as to the validity of the findings based on qualitative data (Cho and Trent, 2006; Golafshani, 2003). To overcome this, the study employed mixed methods, which ensured that its findings were dependable, valid and assured reliability.

1.9 Delimitations of the Study

This study was delimited on the mediating influence capacity building of stakeholders on the relationship between PM&E and the performance of fish farming projects of the ESP programme in Nyeri County, Kenya. It was carried out in Nyeri County because, this counted was rated the best performing in ESP programme in Kenya. Further, this county functional fish farming projects in all the 8 sub-counties eliciting a great disparity performance. These projects were also found appropriate for the study since they were implemented through a PM&E process that was aimed to build capacity of stakeholders as an intermediate outcome and thus so a mediating variable.

It targeted the 8 officials who work as project managers and provided vital and therefore served as key informants. It's also targeted fish farmers and implementing committees (SPMCs). The employed mixed method approach and cross sectional descriptive survey. To arrive at the appropriate sample for the study, employed simple stratified

random and purposive sampling techniques. A questionnaire, interview guide, focus group discussion guide were considered appropriate to collect both qualitative data.

1.10 Assumptions of the Study

The study assumed that the implementation of the ESP fish farming projects in Nyeri was done through PM&E as envisaged by the ESP policy. It is also assumed that all respondents selected are the most appropriate for the study. It was also assumed that the respondents selected fully cooperated by duly completing questionnaires and participating in data collection.

1.11 Definition of Significant Terms used in the Study

Capacity building of stakeholders refers to the efforts that strengthen and enhance an individual's or institution's capacity to achieve their goals. It involves to empowering people and organizations and practices that will together analyze their environment and notice their problems, complications, requirements, opportunities and also set strategies to cope with the issues.

Economic Stimulus Programmes are attempts by governments to financially stimulate an economy through monetary or fiscal policy changes to kick start a lagging or struggling economy so as to boost positive effects such as job creation, income generation and food production.

Fish Farming Projects is the construction of fish ponds, production and acquisition of fingerlings, stocking, feeding, harvesting and marketing of fish.

Participatory Monitoring and Evaluation is a collective action process in which stakeholders in a project collaboratively get involved in monitoring and evaluation issues throughout the life of the project. They therefore take active M&E roles during the design, implementation and utilization of M&E results.

Performance of fish farming projects is the ability of a fish project to create jobs, produce food and increase household income in terms of number of jobs created, amount of fish produced for food in kilograms and income generated from fish farming in Kenya shillings and sustainability of the fish farming projects.

Stakeholder participation in M&E during project design refers to the active role played by fish farmers and fisheries officials during the planning stage of a project in terms of choice of M&E indicators, development of tools and choice of M&E tools.

Stakeholder participation in M&E during project implementation refers to the involvement of fish farmers and the fisheries officials in gathering, presentation and analyses of M&E data during the implementation of a project.

Stakeholder participation in utilization of M&E results refers to how actively fish farmers and fisheries officials participate in documentation, reporting and sharing of information gathered from M&E.

1.12 Organization of the Study

The study thesis is organized around five chapters, namely, introduction, literature review and methodology. The introduction comprises of the background to the study, statement of the problem, purpose of the study, research objectives, research questions, research hypothesis, significance, limitations, delimitation and assumptions of the study and definition of the significant terms. Chapter two, which constitutes the literature review, summarizes the study variables and their relationships. It begins with a brief description of the study concepts, namely the concept of performance of fish farming projects, PM&E and capacity building of stakeholders. Also included in chapter two are theoretical framework, conceptual framework and summary of literature. Chapter three contains research paradigm, research design, target population sample size and sampling procedures, research instruments, data collection procedure, data analysis techniques, ethical issues and operationalization of variables. Chapter four presents the results of the study interpretation of findings and discussions of the results. Finally, chapter five summarizes the findings of the study in relation to the objectives. This chapter also covers conclusions; recommendations for theory, policy and practice of monitoring and evaluation; contribution of the study to knowledge; limitations of the study; and suggestions for further research. The chapter further gives recommendations for improvement before drawing conclusions of the study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter explores literature in line with the influence of PM&E on performance of projects. To achieve this efforts have been made to review the concepts of performance of fish farming projects, PM&E and capacity building; relate the link of capacity building on the relationship between PM&E and project performance. The study also summarizes reviewed literature so as illuminate the gaps to be filled by the current study. It also contains the theoretical and conceptual frameworks for the purposes of underpinning the study.

2.2 Performance of Fish Farming Projects

The concept of project performance has been an area of great concern to all stakeholders. There is great consensus on the need to evaluate the performance of every project so as establish the worth of intervention. The greatest debate has been what can be considered as the appropriate measures for project performance. As a result a variety of performance measures have been advocated for. Studies agree on the robust link between investment in projects and economic development (Singh, Gkritza & Sinha, 2007). Identifying appropriate measures of performance of projects has been sought so as to inform government agencies determine the most efficient allocation of resources. The aim of implementing projects is to improve the quality of life by uplifting the development measures in terms of activity choices, job choices, income amenities and stability. (Weisbrod and Forkenbrock, 2001).

Many other performance measures have been proposed and used to evaluate the performance of projects. However, not all measures apply to each type of project. Factors such as geographic location, type of investment, and purpose of investment may determine which performance measures are best suited for each project. Studies on government economic projects performance have agreed on the indicators of performance net change in income, employment and output. This has been in consideration of usefulness to the public, usefulness for decision-making the purpose of project, type of project, and impact area (Gkritza, Labi, and Sinha, 2006).

Tracing the global investments in interventions ESPs interventions reveals investments of 1.4 % of gross domestic product (GDP) in the United Kingdom, about 6 % in the United States, over 12 % in China and 9.1 % in Korea (Arpaia, 2010). Elsewher, the G20 countries comprising of France, Russia, UK, Brazil, Mexico and Indonesia invested less than 2% (World Bank, 2010). The performance of the ESP interventions was varied. China lowered the benchmark lending rate by five times (Park & Lommen, 2010). In Indonesia, more than 1.2 million out of 3.7 million jobs were created while 23% retention and creation of jobs was reported in Korea (Asian Development Bank (ADB), 2010 In Germany, adjustment of working time was realized (IMF, 2010). The Brazilian ESP provided direct support to employment at 16 % of the labour force (World Bank, 2010).

The overall performance of global ESP was marked by an overall growth in their real GDP in 2010, after a huge decline in 2008 and 2009, retreating from its 0.6 % drop in 2009. Even in developed economies where the crisis hit the hardest, the output growth recovered from -3.2 % in 2009 to 2.3 % in 2010 (World Bank, 2010).Studies based among the advanced economies such as the US reveal that, ESP is recorded to have raised GDP growth by more than 1% in 2009, while the recovery of European and Japanese economies was less than 1 %.

In the developing economies ESP interventions led to GDP growths from 2.4 % in 2009 to 6.3 % in 2010. China and India showed overwhelming recovery at 8.7 % and 6.7 % respectively in 2009 (IMF 2010). Studies on the performance of ESP projects in Sub-Saharan Africa reveal good performance. Overall, it by grew by 2.1 % and rose to 4.75 % in 2010 and to 6 % in 2011.Notably, ESP interventions have yielded varied results on growth of job opportunities as was the case on GDP growth in SSA. South Africa, for example, reported its employment opportunities decline by 2,473,000 jobs during the 2009 - 2010 financial year (Kasekende, Brixova & Ndikumana, 2010).

This is evidence of disparity in performance of ESP projects and is furthermore based only on other macroeconomic parameters that do not have participatory inputs. In a nutshell this therefore calls for investigations in ESP initiatives that are based on PM&E.

The fore mentioned are global World Bank studies carried out in 2010, concentrating on the overall performance of ESP in terms of national economic recovery in the respective countries. The objective of the studies was to evaluate the impact of different government ESP interventions and included a primary hypothesis for testing that Economic Stimulus had a significant impact on the road to recovery from the global economic crisis. The assessment framework was based on econometric approaches using multivariate regression analysis to measure ESP as the dependent variable against the performance as the principal independent variable (in terms of real Gross Domestic Product). In order to carry out the surveys a framework of indicators were established based on the main categories and employing a scoring or ranking system to enable quantitative analysis of the results. Data collection was carried out by country teams, each of which used the same methodologies at the national level through technical assessments of government records. Survey data from the various country teams was forwarded to the central team for processing and analysis, using both tabular analysis and regression analysis techniques (World Bank, 2010). This notwithstanding, they have not dealt with sectoral performance of ESP programmes, a gap that was filled by conducting a study in a single sector (fisheries) in Kenya using various data collection methods.

International Fund for Agricultural Development (IFAD) investigated government funded fish farming projects in Uganda, China, USA, Israel and Japan on their contribution in reduction of poverty. The studies sourced data from government records such as evaluation reports, mid-term and terminal reports. During the studies, primary data was sourced for the purposes of verifying available government records and make autonomous judgements on the outcomes of the initiatives. These studies did not collect quantitative data and the study was therefore qualitative and generally focused on a delimited set of issues identified during the desk research. Data was collected using such methods as face to face interviews, focus group discussions project implementation committees and direct observations (Government of Uganda, 2008). The studies did not investigate the primary beneficiaries of the programme such as the farmers, a gap that this study intends to fill.

The main concern in FAO studies on fish farming has been the on the challenges facing performance of fish farming projects (FAO, 2014). Delgado, Wada, Rosegrant, Meijer

and Ahmed (2003), report that developing countries have more than doubled total fish production since 1973 (FAO, 2014). In other studies in developing countries, fish farming have led to notable improvement on food supply, income and job opportunities (Fakoya *et al,* 2010). These findings warrant further investigations addressing alternative approaches so as to reduce poverty and hunger and contribute to the overall economic development by implementing and sustaining fish farming projects (IFAD 2012).

There are major empirical on findings on the viability of fish farming as found out in countries such as Israel where over half of the fish consumed as food countrywide was emanated from fish farming projects. Similarly, 25% of food in China, 11% in India, and 10% in Japan was derived from fish farming projects and consequent products. Fish projects were also notably a major source of income to small scale farmers and created job opportunities especially in rural settings. The findings are almost similar to results from studies conducted at Kafue Fish Farm in Zambia and other farms in Malawi, Zimbabwe, Nigeria and Ghana, (Roderick, 2002; Feder, Just & Ziblerman ,2005).

The findings of most studies on fish farming projects are that social networks and institutions are the major contributors towards development of fish farming projects in rural areas (Halwart & Gupta, 2004). These studies have taken cases of fish farming in other parts of the world most of which are not pond projects funded by governments. This proposed study sought to fill this gap by studying rural fish farming projects in Nyeri, Kenya. Another major finding by these authors is that with sufficient fiscal policy and funding, fish farming projects can considerably contribute to rural development in countries where fish farming is neither a way of life nor a prevalent activity. This made the current study investigate an area where there was government support in a region where fish farming was not originally a tradition such as Nyeri County in Kenya.

2.3 PM&E and Performance of fish farming projects

The concept of Participatory Monitoring and Evaluation (PM&E) is grounded on a knowledge generation, self-assessment and collective action process where stakeholders collaboratively evaluate issues, collect data analyze it and take action depending on what they gather through the process (Rossman, 2012). Further, (PM&E)

provides implementing agencies a myriad of prospects for bettering the projects performance pursued by both the public and private outfits.

Recently, PM&E has become more prominent as opposed to traditional methodologies of monitoring and evaluation in developing countries especially in Africa (Ochola, Omolo, Onyango and Tana, 2012). In traditional monitoring and evaluation the process was based on judgmental reports by external experts engaged to evaluate the project against the objectives rather than involving all stakeholders throughout the process of generating objectives, defining indicators and crafting local solutions (Coupal, 2001). PM&E is an outcome of monitoring and evaluation of change through activities undertaken by all stakeholders involved in the initiative and its outcomes. Further, studies argue that the other role of PM&E is to also utilize M&E information collected by stakeholder not only to gauge whether project objectives have been met , to what extent and also for the purposes of making critical decisions to improve project performance (Hinchliffe, 2005).

The practice of PM&E in projects has progressed greatly over the past few decades. The origins can be drawn back from general participation, advocated for and promoted by non-governmental organizations (NGOs) between 1950 and 1970. In a study focusing on FAO, ILO and UNRISD funded projects, (Rudqvist and Woodford-Berger, 2006) sampled in 121 water projects, the findings were that PM&E is a key recipe to economic benefits of a project. The main drive of the study is that the findings and lessons are grounded on experiences of various donor agencies and reviews of literature review. A limitation is that the data was based almost exclusively on reviews of existing documents, and not on field-based evaluations jointly with primary stakeholders a gap that this study intends to fill.

2.3.1 Stakeholder participation in M&E during project design and Performance of Projects

Various authors agree that stakeholder participation in M&E during project design influences the setting of objectives, development of M&E tools and the design of M&E framework (Marsden, David & Oakley, 2008). In many fish farming projects in the past, where measurable objectives were specified, basic challenges were experienced. The researchers agree that gathering of data on fish farming is challenging, especially

in countries where large scale forms of fish farming are predominant. The findings also reveal that only Malawi and Nigeria both in Sub-Saharan Africa operate well-designed national PM&E systems. This prompts a study in a country like Kenya where national statistical system for fish farming data is considered insufficient.

World Bank (2010) reports that stakeholder's participation in M&E during project design has been identified as the major drawback to the performance of development initiatives. The study reports that stakeholder's participation in M&E during project design is an enabler to the poor rural populations as they endeavour to utilize their social capital to solve their own problems especially those that they identify with (FAO 2012).

Cook and Kothari (2001) observe that stakeholder's participation in M&E during project design can be manipulative or even harmful for those to be empowered. In a study targeting government projects in Sub Saharan Africa, a sample of 70 respondents out a population of 118 project owners through purposive random sampling was investigated. The respondents were identified during the field study. The study revealed that stake holder participation disrupts attention away through discursive practices and encourages the inherent potential for the application of the concept for an unjustified exercise of power by project participants. They called attention to the possibility that even so called participatory approach in project design may fail to attend to the unique needs of some groups for example, women, marginal and or excluded groups in terms of ethnicity, caste, income and age. This study aims at filling this gap by selecting respondents using authoritative formulae and from a known sample frame and sampling units and investigating their demographic variables such as gender, age level of education and income of the stakeholders.

In a study investigating participation of households in the design of M&E frameworks of government sponsored projects, Oganda, (2012), employed Propensity Score Matching (PSM) to measure the impact of household's participation in project decisions. A random sample of 318 households was interviewed using a detailed semi-structured questionnaire. The sampled households were randomly interspersed in the study area and across the stakeholder regimes. The analysis used cross-sectional data from a survey of Kakamegas government sponsored projects Kenya in 2010. The selected projects were specifically community forest associations (CFAs). Findings

revealed that participation by households is influenced broadly by socio-economic and institutional factors, and has a positive impact on the performance. The proposed study attempted an investigation in fish farming projects, a sector that has been identified as a linchpin to economic recovery and the interventions in both sectors are implemented through a PM&E process.

2.3.2 Stakeholders Participation in M&E during Project Implementation and Performance of Fish Farming Projects

Analysis on the studies on the dynamics of stakeholders participation in M&E during project implementation in an urban upgrading government projects in South Africa, report challenges in mobilizing and organizing people collectively based on horizontal ties and common interests in the context of poverty and dependence urban contexts. The studies concentrated on the challenges to PM&E (Botes and van Rensburg, 2000). This current study investigated the relationship of participation in project implementation in government projects in rural areas where majority of the poor, unemployed and food insecure live.

Scientists hold that the approach to stakeholder's participation in M&E during project implementation has a relationship with its outcome. It is noted that ensuring a greater participation calls for effective linkages between government, the implementing agency and the general project participants. For instance, the intervention in Malawi involved only a small majority selected from the large pool of participants. This was coupled with lack of rapport with the existing extension officers or any effort put in place an agreed working timetable. This greatly influenced the projects performance negatively (Marsden and Oakley, 2010). A baseline study on how farmers should be involved should be conducted, and subsequent surveys carried out to monitor progress (Delgado, 2003). This study intends to investigate PM&E approaches in fish farming in another region, in this case Kenya and establish its influence on performance of fish farming projects.

Mathé (2012) conducted an investigation on stakeholder's participation in M&E during project implementation of fish farming systems in Montpellier, France. They study was based on fish farming pond systems and concentrated on the influence of participant categories. The study used surveys and focus groups discussions to investigate the

social representations of stakeholders at various stages of the projects. Their opinions about potential or real contributions towards fish farming were taken into consideration. However, the technical evaluation of their contribution was assessed by the researchers themselves. The study investigated the merit of a participatory approach based on the Principle, Criteria and Indicator (PCI) method, in order to come up with appropriate performance indicators for fish farming projects. This method allowed a premises for participation, allowing the stakeholders to rank and validate a list of indicators and their related outcomes. To fill this gap the current study investigated how stakeholders participate validating M&E indicators during project implementation was investigated as stipulated in the ESP manual.

Studies opine that in most African countries, where stakeholder participation in fish farming is not legally protected, performance tends to be stalled. Lack of stakeholder's participation in M&E policy has been pointed out as a main impediment to commercial fish farming projects. (Fakoya *et al* 2001). Ogunlaru (2000) highlights the nonexistence of a legal structure for the fish farming industry as a drawback its performance. In Nigeria strategies to stimulate fish farming were outlined in the National Agricultural Policy which also spelt out the relevant stakeholder roles. However, conflicts in their interpretation during implementations and little political will to follow up affects the fish farming industry. Mwangi (2008) identifies the main challenges to fish farming growth in Kenya as poorly coordinated promotion programmes in fish farming among the various stakeholders. These findings prompted the current study to investigate stakeholder participation in M&E during project implementation.

2.3.3 Stakeholder Participation in Utilization of M&E Results and Performance of Projects

According to Codd (2011), stakeholder participation in utilization of M&E results refers to the level stakeholder involvement in documentation of M&E data and disseminating for the purpose assessing what works and what doesn't and in essence make amends for better project performance.

Studies in Uganda investigated the utilization of M&E results in agricultural stimulus projects. The study was an impact assessment and relied on logical framework developed by the evaluation team, a set of indicators and a project operational manual.

Originally, the M&E team was to include evaluators seconded from government M&E offices working on a short period as consultants by utilizing a tested monitoring system. M&E was conducted by the government body as an independent agency at both half way and the end of the programme. The study reported the need to combine quantitative indicators of success with more qualitative measures when monitoring and evaluating projects (GOU, 2008). This is possible when evaluation is participatory in nature. However, the findings were sent directly to the government offices where the consultants felt accountable to. This study filled this gap employing a pragmatic paradigm that allowed use of both qualitative and quantitative methods.

A study was conducted in Kiambu County on how pond fish farmers participate in the utilization of M&E results of their projects and how this influences economic performance. Thirty four respondents were purposively selected from one hundred and two (102) Economic Stimulus Package (ESP) participants in terms of project sites. Information was gathered through an interviews. Secondary data was further used to corroborate primary findings and was acquired from projects records. Both descriptive and inferential analysis was undertaken to find out whether project location and mediating variables had significant influence on project performance. The findings revealed that PM&E through accessible record keeping is significant to the economic sustainability of the projects (Wanda, 2013). This study investigated PM&E as mediated by capacity building on the performance of fish farming projects.

Studies have been in order to evaluate how M&E results are utilized in project management. The findings are that there is need for active involvement by the participants if these initiatives will be effective. Farmers should write their own reports and bring them up-to-date them on a regular basis. Reports should be prepared primarily in local terms, even if it requires that they are converted into standard forms at the end (Hishamunda, 2001).

From the above, it is clear that different studies agree on the need for stakeholder participation in M&E. The success or failure of fish farming development projects and national plans should not only be evaluated by evidence of how people are farming fish. PM&E should be a major subject of the institutional context for fish farming

development by tracing it through out all the stages of an intervention (Wetengere, 2009).

2.4 Capacity Building of Stakeholders and Performance of Fish Farming Projects

The concept of capacity building has different meanings to different people. However, in general capacity building relates to strengthening or enhancing an organization's or individual's capacity to achieve goals. This concept emerged in the lexicon of international development during the 1990s. It means an investment in human resources, institutions and practices that aid the countries in the region achieve development goals (World Bank, 2010). Being a new build-up of capabilities, capacity building is practically meant to develop the capabilities of people, communities and organizations. This incorporates analyzing their environment in order to determine their problems, complications, requirements, opportunities and also set strategies to cope with the issues (ILO, 2012).

Studies have reported that capacity building of stakeholders is one of the intermediate results of PM&E. This is because, as stakeholders get involved in planning how to inspect an intervention, monitoring and tracking the progress of its implementation, getting involved in the reports generated to establish how the desired change has occurred, their capacity is built. Through PM&E, a project invests in people, institutions and practices that will together enable countries in the region to achieve their development objectives (World Bank, 2010). Capacity building is meant to develop the capabilities of people, organizations and communities, analyze their environment and notice their problems, complications, requirements, opportunities and also set strategies to cope with the issues (ILO, 2012).

Samah and Aref (2011) reports benefits accruing from PM&E as learning new skills, gaining information, helping others, increasing social contact, and fulfilling obligations – than less involved individuals. The study also notes that people who take place in putting up stakeholder groups and organizing their activities learn and gain knowledge. This is an indication of the close relationship between PM&E and capacity building.
PM&E allows project participants to design their own evaluations and as a consequence become independents in solving their own problems (Codd, 2011). And as Hilhost and Guijt (2006) contend, capacity building results to self-sufficiency and self-assurance

amongst program participants such that they are able to pursue project objectives effectively. From these studies, it is clear that among other products such as empowerment of the stakeholder members, political cohesion, capacity building is one on the greatest outcomes of the PM&E.

Capacity building of farmers and extension workers has a relationship with the performance of the fisheries sector. This is because fish farming has certain complexities such as the provision of young fish to stock ponds, pond fertilization and food provisions require considerable sophistication. The inadequacy in provision of extension services has been a major challenge to development of fish farming in Kenya (MOFD, 2011).

In a research to assess the influence of capacity building on fish farming in Ekiti State, Nigeria, Ajieh (2004), investigated the data circulated to fish farmers, characteristics of fisheries officers, and farmers' contact with the farmers and viability of the farms. A structured questionnaire was used to collect information from the farmers and a sample size of 90 fish farmers was selected from the six local government projects. Gross Margin analysis was used to compute the viability of the initiatives. It suggested that fisheries officers should strengthen their energies in reaching out to the farmers and disseminating useful information to them in order to assure farmers' viability (Ajieh, 2004). This study did not investigate the relationship between capacity building and this viability with other variables of performance of fish farming projects such PM&E, a gap that the current study filled.

In Bangladesh, (Saker, Chowdry and Itohara, 2006) carried out in-depth surveys in farms using a common close ended questionnaire for all sites. These surveys explored the relationship capabilities and adoption of technologies by farmers. They concluded that farmers' competencies in fish farming can be enhanced through proper training so as to impact new knowledge, teach better skills and bring about more effective performance in the production of food in fish industry. This study considered capacity building as a standalone determinant, a gap that was filled by analyzing the mediating influence of capacity building on the relationship between PM&E and performance of fish farming projects.

In an investigation in the Songhai-Delta , a simple random sampling technique was used in selecting 15 trainees from each of the 3 senatorial districts in the state to give a total of 45 respondents from the list of 75 trainees. In this study, Okwu and Ejembi (2005), reported that capacity building farmers helps understand and practice the skills required in the adoption of technology and fills the deficit situation in the knowledge and skill level of the practicing farmers as well as the availability of appropriate applicable information, the utilization of which makes the farmers better practitioners.

Studies have cited lack of technical capacity among participants as a major reason for the low output of fish ponds in Kenya. The lack has been observed at all levels, from the lowest-level extension agent through university levels (Veverica, *et al*, 2000). Bamba and Kienta (2000) studied a USAID funded programme in Guatemala and Panama, South America and pointed out that poor fish farming capacity among fish farmers and extension agents greatly influenced the performance of fish farming projects. The study only sampled two projects and also did not clearly investigate how other factors influenced project performance, a gap that this study wishes to fill.

Munialo (2011) observed that most fish farming project, concentrated on maximizing output rather than solving the local problems**.** Before a would-be fish farmer could successfully produce fish economically, participants require special training in fish pond management value addition, and other post-harvest handling skills. Mwangi (2008) reported that insufficient capacity of extension staff as a result of with practical fish farming skills as the main challenge facing the performance fish farming in Kenya. Ngugi *et al* (2007) was also in agreement that capacity related factors towards impeded aquaculture in Kenya. The studies however did not attempt to investigate how significantly capacity of stakeholders influenced performance of fish farming projects.

2.5 PM&E, Capacity Building of Stakeholders and Performance of Fish Farming Projects

Building stakeholder capacities is one of the products of PM&E and is regarded as a more accurate measure of stakeholder participation outcomes than other success indicators prescribed by outside experts. The knowledge and skills resulting from participatory evaluation process is capacity and is an in indicator of change (Lennie, 2005). Fraser *et al*. (2006) observe that engagement of locals helps build stakeholder

capacity to handle their issues. In their studies, they observed that stakeholder capacities can be enhanced by employing local languages when pursuing evaluation practices and then utilizing scientific tools to extend the evaluation findings from the local level to wider areas. The studies further revealed that participatory processes are a means of reducing tensions among participants otherwise responsible for resource-based conflicts. As a consequence various stakeholder end up learning to work together towards a common objective.

There is evidence of interest in assessing the local or regional performance of a project, program or policy. Weisbrod and Forkenbrock (2001) in an assessment of the social and economic effects of projects in Washington noted that economic impacts are easily misrepresented. Performance of any project is different from the valuation of individual user benefits, and is also different from broader social performance. The user benefits and social impacts may include the valuation of changes in amenity or quality of life factors (such as health, safety, recreation, air or noise quality). The study concurs with the case of Singh, Gkritza, and Sinha (2007) that project benefits are as a result of other social benefits such as Stakeholder knowledge and increased capacity among the locals.

Literature reveals concerted efforts on empowerment of project participants through PM&E, a practice that has been greatly advocated for by NGOs (Oakley & Marsden 2004). The findings of this report are based on reviews of documents prepared by the implementing agencies such as government ministries, and not on field-based investigations from primary beneficiaries such as farmers.

2.6 Theoretical Underpinnings

The study was majorly based on the Theory of Change. It is being further complemented by other theories, namely: the Outcome theory, the Learning and Knowledge Utilization theories. Project performance is underpinned on the Keynesian theory of economic stimulus improved as the theory of exceptions as its underlying theory. These theories are further discussed as under.

2.6.1 Theory of change

Theory of Change is an outcomes-based, participatory technique that has advanced from 1990s into a laborious instrument for scheduling, assessment, and capacity

building as the building blocks required bringing about a given long-term goal of an intervention (Taplin, Clark, Collins and Colby, 2013). It was developed at the Aspen Institute Roundtable on Stakeholder Change by methodologists led by Huey Chen and popularized by Carol Weiss in the 1980s and refined as the practice of outcome mapping. Its key strength is its keenness to midterm changes such as capacity building and focusing on measurable achievements (Chris *et al*, 2011). Rather than engaging in the conventional forward oriented reasoning advocated in other models, it works backwards to develop a pathway to change (Brest, 2010). This theory was therefore used to investigate project performance as the measurable achievements of fish farming projects and the midterm outcome of capacity building.

The ESP in Kenya and fish farming projects in particular is a public policy intervention intended to provoke radical change by alleviating poverty, creating employment, and improve food security as a PM&E intervention. The ESP objectives have a participatory evaluation focus on the contribution of cross-sectoral capacity building as an intermediate phase and a bridge towards the intended change in economic terms. Therefore this theory is well placed as basis of this study which aims to track changes of the PM&E intervention in the ESP fish farming projects.

2.6.2 Outcome Theory

To further measure the results in terms of the objectives of ESP in fish farming projects, the study is also guided by the outcome theory advocated by Duignon (2008). This theory provides an integrated perspective on the functioning and optimal design of outcomes systems which attempt to measure results, goals, objectives, targets and such to attribute to interventions.

This theory is applicable in this study because the ESP fish farming projects in Kenya has the kind of activities postulated by the theory. The theory helps to ground and deal with specifying, measuring, attributing and holding players (in this case the stakeholders) to account for changes in outcomes. The ESP engages in performance measurement, which can be evaluated through this theory. The theory also gives guidelines for visual presentation and dissemination of information gathered. When properly applied in the ESP, the outcome theory can help analyze the economic

solutions and avoid expending unnecessary effort in futile exercises associated with many poorly constructed outcome systems.

However, the theory is seen at times as over-simplified and yet over complicated which makes PM&E difficult. The theory also has a problem in the presentation and preparation of indicators which are presumed in the achievements at particular levels of outputs because some indicators may be seen as indicators at the same time as outcomes therefore presenting the problem of which indicators really are attributable to immediate outcome. Despite the mentioned shortcomings, the Outcome Theory can be applied in the ESP projects where PM&E approach is used to clearly define indicators and outcomes.

2.6.3 Learning Theories and Knowledge Utilization Theories

Generally, a combination of learning theories and knowledge utilization theories is considered appropriate when trying to investigate the outcomes of PM&E. Learning theories are numerous and include the following: cognitive, humanist, behavioral, and constructivist theories (Raby & Viola, 2007). This is also the case with knowledge utilization theories, for example, problem-solving, enlightenment, knowledge-driven, strategic, and deliberative theories (Lemieux-Charles & Champagne, 2004).

Learning theories and knowledge utilization theories are considered strong for this study as discussed by Weiss (2000) in the sense that stakeholders consider learning is a part and parcel of PME (Bowen & Martens, 2006; Forss *et al*., 2002; Rebien, 2011; Taut, 2007), other studies take learning as a pivotal activity in participatory processes (Greene, 1988).

Despite the aforementioned strengths, some scholars have pointed on some of the weaknesses of learning theories (Reeve & Peerbhoy, 2007). Knowledge adoption and capacity building are demonstrated to be part of PM&E (Baker & Bruner, 2006; Bowen & Martens, 2006) even though uncertainty stands out on their pivotal stand point (Lennie, 2005).

Researchers identify the learning processes as the intermediate result of PM&E (Preskill *et al*., 2003), others refers to this result as capacity building (Taut & Brauns,

2003), (Preskill & Torres, 2000), and (King, 2007) as is one of the variables to be investigated in this study. This therefore makes Learning and knowledge utilization theories applicable for the investigation of capacity building as the intermediate learning outcome of capacity building from participating in M&E.

2.6.4 The General Theory of Employment, Interest and Money

To ground the study on performance of the ESP projects, the General Theory of Employment, Interest and Money whose original proponent is John Maynard Keynes in 1936 was used. He advocated for government spending as the solution for economic development. Economists have used this theory in studies to investigate the influence of various types of government projects on reduction of unemployment, poverty and food insecurity. Some results are that a number of government programmes have been reducing household incomes, and reducing the incentives for business to employ (IMF, 2010). Other ESPs studied in Sub Saharan Africa have revealed positive results in economic recovery (Kasekende *et al*, 2010). This theory has its major strength in relating government efforts and solutions to economic problems such as providing jobs. Its major weakness can be traced from the fact that it does not accommodate other economic parameters such as inflation. This theory has as a result been improved by the formulation of the theory of exceptions (Krugman 2011) as an explanation to the disparity in the performance of stimulus projects.

2.6.5 Theoretical Framework

Despite the weaknesses explicitly identified in the Theory of Change, it was used to as a basis of this study owing to its profound strengths. The flaws identified called for an alternative theoretical framework to respond to these weaknesses. The study was based on a framework that integrates the Theory of Change, the Outcome theory, the Learning and Knowledge Utilization theories and the Keynesian theory of economic stimulus; all of which have certain limitations with the theory of exceptions as an underlying theory to study performance. Literature reviewed records that the theory of Change is a trans-disciplinary theory that integrates certain ideas resident in the other theories including the aforementioned.

The practice of PM&E has been recorded to generate many changes (Bowen & Martens, 2006; Forss, Rebien, & Carlsson, 2002; Taut, 2007). These changes include capacity

building (Baker & Bruner, 2006; Bowen & Martens, 2006), participatory practice's (Bradley, Mayfield, Mehta, & Rukonge, 2002), utilization of monitoring and evaluation results (Rebien, 2011) project performance (Greene 1988); learning, understandings, ownership of results) and by Cousins *et al*. (2014); goal achievement/ performance). Therefore a framework integrating the fore mentioned theories is deemed appropriate to investigate the relationship between the variables of this study.

2.7 Conceptual Framework of P M & E, Capacity Building and Performance of Fish Farming Projects

The conceptual framework guiding this study is shown in Figure 2.3 illustrating the relationships between the independent, mediating, mediating and dependent variables.

This study investigated five major relationships as represented in the conceptual framework of the study in Figure 2. This study aimed at assessing the extent to which PM&E influences performance of fish farming projects. PM&E has been operationalized in indicators that include; stakeholder participation in M&E during project design, stakeholder participation in M&E during project implementation, and stakeholder participation in utilization of M&E results.

Project performance was conceptualized to include: number of jobs created; amount of food produced in kilograms of fish and the income derived from the fish projects in Kenya shillings as outlined as the desired outcomes of the ESP in fish farming projects. This is also in line with the criteria of usefulness to the project owners, utilization for decision-making, the purpose of project, type of project, and impact area of a project.

Further, the study operationalizes capacity building of stakeholders as the level of acquired skills, the strength of local networks and the ability to solve their local problems. This is because capacity building is midterm outcome of a PM&E practice and rightfully then a mediator to outcome (performance).

Finally, the study established the joint influence of PM&E as mediated by capacity building on performance so as to prescribe a model for the practice of project monitoring and evaluation.

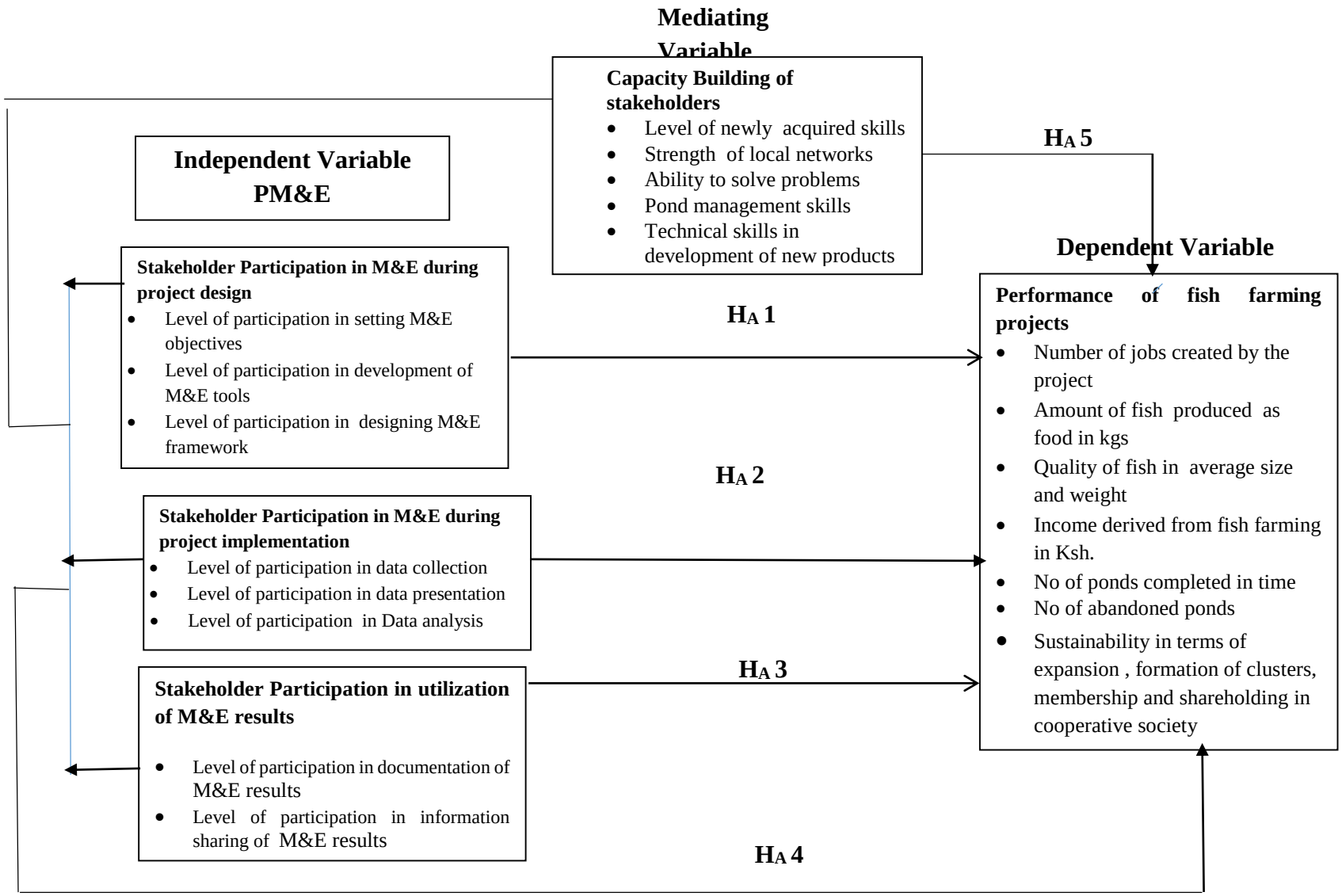

Figure 1: Conceptual Framework of PM & E, Capacity Building of Stakeholders and Performance of Fish Farming Project

Table 2.1: Summary of Gaps in the Literature Reviewed

Study Variable	Researcher (Year)	Objective	Methodology	Findings and conclusions	Gaps in knowledge
Performance of Fish farming Projects	Weisbrod and Forkenbrock (2001)	To assess the social and economic effects of projects in Washington	A survey of road project in an urban set up	Economic impacts are easily misrepresented	To investigate user benefits such as increased capacity among the locals
Performance of Fish farming Projects	Kasekende, Brixova,Ndikumana, (2010)	To investigate the performance of ESP projects in Sub-Saharan Africa	Used case studies to gather data through technical assessments of government records	ESPs don't have the same degree of effects.	To investigate the primary beneficiaries of the programmes
Performance of Fish farming Projects	Delgado, Wada, Rosegrant, Meijer and Ahmed (2003)	To analyze the challenges facing sustainability of fish farming	Data was gathered through desk review of available documents , impact assessment by the Government, appraisal reports, mid-term review and supervision reports	Fish farming has substantial influence on food availability, income and jobs	A study on sectoral performance of ESP programmes Performance to be evaluated in terms of PM&E indicators and not real Gross Domestic Product
Performance of Fish farming Projects	Rudqvist and Woodford-Berger, (2006)	The role of citizen participation on economic development	Findings and lessons are based on the experiences of donor agencies and reviews of general literature and existing documents	PM&E is a key recipe to economic benefits of a project	data to base on field-based evaluations jointly with primary stakeholders

Stakeholder Participation in M&E During Project Design	Botes and van Rensburg, (2000)	analyzing the dynamics of PM&E in an urban upgrading government project in South Africa	A case study of one city in an urban context	PM&E challenged by conflicting interests groups, gate-keeping by local elites, and alleged lack of public interest in getting involved	investigation of PM&E in government projects in rural areas where majority of the poor, unemployed and food insecure live
Stakeholder Participation in M&E During Project Implementation	Oganda (2012)	investigating participation of households in government sponsored projects	employed Propensity Score Matching (PSM) to measure the impact of household's participation in project decisions	Participation by households is influenced broadly by socio-economic and institutional factors, and has a positive impact on the performance.	Study to be carried in Fish projects and compare with Stakeholder forest associations (CFAs)
Stakeholder Participation in Utilization of M&E Results	(Mathé , 2012)	investigated the advantage of using a participatory approach in order to identify relevant social indicators for fish farming pond systems	Used case studies based on the Principle, Criteria and Indicator (PCI) method	Participatory approach provides a basis for discussion, allowing the stakeholders to rank and validate impacts	The ranked indicators was correlated with performance indictors resulting from a PM&E approach

Stakeholder Participation in Utilization of M&E Results	Ajieh (2004)	influence of capacity building on fish farming	Gross Margin examination was employed to compute the viability of fish farming	Extension agents should intensify their efforts in getting into contact with farmers and disseminating vital data to improve fish farming viability.	Carried out the traditional fishing communities. It only used profitability as the only measure of performance.
Capacity Building in Fish Farming Projects	Okwu and Ejembi (2005)	Essentials of a successful farmer training programme in Agricultural Extension in Nigeria.	Simple random sampling employed to arrive at respondents	Capacity building farmers helps understand and practice the skills required in the adoption of technology	Technical capacity among participants is a major reason for the low output Supports hypothesis that capacity building influences performance
Capacity Building in Fish Farming Projects	Hilhost and Guijt (2006)	An investigation of PM&E process in strengthening governance and empowerment at the local level in World Bank-supported projects	Mixed-study methodology: interviewed stakeholders that had participated, participants observation and document reviews	PM&E enhances capacity building, empowerment and consequently enhances the performance, efficiency and sustainability of interventions	New study tested the supported hypothesis

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives the methodology which was employed in the research. It explains the research paradigm, research design, target population, sample size and sampling procedures, research instruments, data collection methods, methods of data analysis and operationalization of variables.

3.2 Research Paradigm

This study adopted a pragmatic research paradigm as the main philosophical underpinning. This paradigm assumes that knowledge arises from actions, situations, and consequences rather than antecedent conditions (Creswell, 2012). The major concern in this paradigm is that applications works towards solutions to problems. In this case, Instead of methods being important, the problem is most important than the rather. Researchers are therefore required to use all approaches to understand the problem.

This philosophical underpinning was preferred since it allows mixed methods approach by permitting the researchers freedom to choose the methods, techniques, and procedures of research that best meet their needs and purposes of the research problem in question. According to Morgan (2007) and Patton (2002), a pragmatic research paradigm allows focusing attention on the research problem in social science research and then using pluralistic approaches to derive knowledge about the problem. Pragmatism also provides a good philosophical basis for social science research since it is not committed to any one system of philosophy and reality. Since pragmatists believe that knowledge is not only developed through careful observation and measurement of the objective reality that exist (quantitative approach) but by also seeking an understanding of the world by developing subjective meanings from the researchers own experiences and those of his subjects on the situation under study (qualitative approach).

This philosophy therefore allowed the study to use both quantitative and qualitative methods of investigation because of the nature of the constructs that were investigated in the study, namely project performance, PM&E and capacity building which required that certain elucidations be derived. Therefore, both constructivists' and positivists'

viewpoints were applied in the study. Since this study aimed at deriving benefits from combining different knowledge systems (Olsson, Folke, and Berkes, 2004), a pragmatic paradigm helped understand how the relationship between PM&E and the performance of fish farming projects is mediated by capacity building.

This study adopted a mixed method of study an approach to investigation that connects both qualitative and quantitative procedures in a study. Therefore, it is more than simply gathering and analyzing the two types of data. This mode also allows the use of both methods together such that the general strong point of a research is greater than either of the two (Creswell, 2012).

3.2.1 Research Design

Since this study was a mixed method research (Onwuegbuzie &Turner 2007), it used a convergent parallel mixed method design so as to simultaneously collect both quantitative and qualitative data, merge the data, and use the results to understand a research problem(Creswell & Plano Clark, 2011). The justification for this design is that one data collection method compliments the other, and that this gives a better insight of a study results (Tashakkori & Teddlie, 2010). In this case, quantitative data emanating from the numerous questionnaires in this study gathered from the selected fish farmers gave strengths to rid- off the weaknesses of qualitative responses gathered from the few responses in this case interviews and focus group discussions held with implementing committees (SPMCs). At the same time, qualitative, in-depth observation of a few respondents offered strength to quantitative data that does not adequately provide detailed information about the context in which individuals provide information. Therefore out the available concurrent designs prescribed by Brannen, and Muskat, (2012) , possibilities: (1) QUAL + quan or (2) QUAL + QUAN or (3) QUAN + qual or (4) QUAN + QUAN or (5) QUAL + quan or (6) QUAL + QUAL and since the quantitative component of the study being dominant, option 3 (QUAN + qual) was considered appropriate. The data collected was converged after analysis for the purpose of comparison as preferred by Creswell (2012)

The researcher therefore gathered both quantitative and qualitative data, analyzed both sets of data independently, matched the results from the analysis of the two sets of data, and elucidation as to whether the findings conform or dispute each other. This direct

assessment of the two sets of data provided a meeting point sources of data so as to conclude if the two databases produced similar or dissimilar results.The design, also referred to as a complementarity mixed methods study (Lee & Greene, 2007) allowed the researcher to converge the quantitative and qualitative data by integrating it for the purpose of analysis.

3.3 Target Population

The study was conducted in Nyeri County in Central Kenya which is one of Counties that ESP was implemented in fish farming through a PM&E process. The county is subdivided into 8 sub-counties namely; Nyeri Central, Tetu, Kieni West, Kieni East, Mathira West, Mathira East, Othaya and Mukurweini. In each these sub counties, a fish farming project was implemented by a SPMC (Stimulus Project Management committee) headed by a Project manager who is a fisheries officer.

There are therefore eight fish farming projects managed by 8 stimulus project implementation teams (SPMCs). Each SPMC is made up one fisheries officer and 6 farmers making a total of 7 members in each SPMC. In total, the study targets a population of the 645 farmers, the 56 SPMC members from the 8 projects and the 8 project managers, which forms the sampling frame for the study.

Table 3.1: Distribution of target population by Projects

Project	Fish Farmers	Project Managers	SPMC Members
Tetu	96	1	7
Kieni East	74	1	7
Kieni West	86	1	7
Mathira East	96	1	7
Mathira West	75	1	7
Othaya	69	1	7
Mukuruweini	79	1	7
Nyeri Central	70	1	7
Total	645	8	56

Source: Department of Fisheries Nyeri County (2016)

3.4 Sample Size and Sampling Procedure

This section describes the sample size and sampling procedures used in the study.

3.4.1 Sample size

To get a practical sample size for farmers, computations were done using the formula by Yamane (1967).

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

Where: n = Sample Size

N = Population Size

e = Level of Precision

This sample size assumed 95% level of confidence, a precision of 7.5% and a variability 50%. The computation produced:

$$n = \frac{645}{1 + 645(0.05)^2}$$

$$n = 247$$

This resulted to a sample size of 247 farmers to be selected from the 8 projects. Further, the study selected the 8 project managers targeted in the study meaning that a census was carried out on them. Lastly the 8 SPMCs were selected for the study where similarly, a census was also carried out.

3.4.2 Sampling Procedure

To arrive at an appropriate sample for the farmers the research employed stratified random sampling technique. According to Luca (2014), stratified random sampling suited this study in terms of reduced sampling error, control over design and selection of the sample within each stratum, more representativeness of the population characteristics, reduced travel and other costs of data collection. In order to obtain a stratified random sample, the sampling frame was first divided into eight sub-populations, or strata in this case the projects. Next, a random sample was selected from each stratum. The goal of stratified random sampling was to select a sample in such a way that the targeted fish farmers had equal chances of being selected in the same proportion as they exist in the population (Kothari 2004, Creswell, 2014).

Simple random sampling technique was employed using a computer-aided random selection from the list of farmers which was used as the sampling frame. Taking the sample size of 247 and assuming that the proportionate sample size and the population (247/645 = .38*Cluster N) Table 3.2 shows the sample size by sub-county based on their respective population sizes.

Table: 3.2 Sample size for farmers

Project	Fish Farmers	Sample Size
Tetu	96	37
Kieni East	74	28
Kieni West	86	25
Mathira East	96	37
Mathira West	75	28
Othaya	69	26
Mukuruweini	79	30
Nyeri Central	70	36
Total	645	247

To identify the selected farmers, their details were then derived from the list of beneficiaries in the register kept by the constituency fisheries officer (project manager). This aided in arriving at the physical addresses of the farmers from which the researcher drew a map that enabled accessing the respondents during the actual data collection.

Further, this study employed purposive sampling design to select participants for the purposes of collecting qualitative data for the study. First, all the SPMCs were 8 SPMCs were selected to participate in the study using a census. Finally all the 8 project managers were similarly selected to serve as key informant respondents.

3.5 Research Instruments

Three research instruments were employed in this study; a questionnaire for farmers, a focus group discussions guide for SPMCs and an interview guide for project managers. The questionnaires were administered to the 247 farmers selected and comprised six sections, namely: Section A had close ended questions which sought to find out the

demographic characteristics of the farmers in terms of age, gender, level of educations and occupation. Section B investigated the first independent variable (stakeholder participation in M&E during project design) in terms their level of participation in setting M&E objectives, development of M&E tools and designing the M&E framework. This section had eleven questions in a five point Likert scale.

Section C investigated the second independent variable (stakeholder participation in M&E during project implementation) in terms their level of participation in data collection, data presentation and data analysis. Similarly, it had eleven questions in a five point Likert scale. Section D investigated the third independent variable (stakeholder participation in utilization of M&E results) in terms their level of participation in documentation of M&E results and information sharing of M&E results. This section also had eleven questions in a five point Likert scale.

Section E investigated the mediating variable (capacity building) in terms their level of newly acquired skills, strength of local networks, ability to solve problems, pond management skills and technical skills in development of new products. This section also had eleven questions in a five point Likert scale. Lastly, section F investigated the dependent variable (performance of fish projects) in terms their the number of jobs created, the amount of fish produced, and the amount income generated by the project, quality of fish produced and sustainability of the project.. This section also had eleven questions in a five point Likert scale.

This study further sought to gather qualitative data using a Focus Group Discussion (FGD) guide for SPMC members. The FGD guide had two sections. The first section was meant to level the ground by allowing both the researcher and SPMC members to introduce themselves. The study topic was introduced and the rules for the discussion were set. The second section comprised of the discussion topics that were set in line with the study variables, key concepts to be explored and the guide questions were used in exploring the concepts. These discussions were conducted with the 8 SPMCs, who are in charge of managing the ESP projects at the sub county level and were purposively selected, due to their technical expertise in ESP and fish farming.

Finally, this study further sought to gather qualitative data using an interview guide for project managers. The interview guide had two sections. The first section was meant to level the ground by allowing both the researcher and project manager to introduce themselves. The second section comprised of the discussion topics that were set in line with the study variables, key concepts to be explored and the interview questions were used in exploring the concepts. These interviews were conducted with the 8 project managers, who are in charge of managing the ESP projects at the sub county level and were also purposively selected, due to their technical expertise in ESP and fish farming.

Using both qualitative and quantitative data is advised since it allows the researcher to simultaneously generalize results from a sample or a population, gain deeper understanding of the phenomena of interest as well as test theoretical models and falsify them at the same time based on participants' responses (Kothari 2004, Creswell, 2012).

3.5.1 Piloting of Research Instruments

According to Murray (2003), piloting is important because it helps to improve internal validity of the research instruments before embarking on the actual data collection Thirty three farmers and four project managers and two SPMCs from the neighboring Kiambu County were randomly selected using simple random technique. This represented at least 10% of each category of the parent sample which is sufficient for a pilot study (Connelly, 2008). Responses were analysed to ensure each question produced an adequate range of responses. This process was also aimed at assessing the questions in terms of their meaning and vocabularies. The choice of the county was based on similarities with the target counties in terms of climatic conditions, cultural background, land use patterns and sizes owned per household and funding by the ESP is similar in terms of amount and criteria for access. This also ensured that the sample of respondents to be used in the pilot study was excluded from the main study by selecting them from another county other than the two target counties. Feedback from the pilot study was used to adjust the questionnaires to the intended standard. This helped to identify ambiguities of the items and vague items for standardization.

3.5.2 Validity of Instruments

Validity of an assessment is the degree to which it measures what it is supposed to measure, (Kramer, 2009). This study used mixed methods to triangulate data sources so as to check the validity of one instrument against another. Recognizing that all

instruments have limitations and biases are inherent in any single instruments, this study used triangulation of data collection instruments as a means for seeking convergence of cross qualitative and quantitative methods. Triangulation also helped mixing different types of data from different categories of respondents. The responses form one method helped develop or inform the other method. Validity of the instruments and the study in general was also strengthened by collecting both quantitative and qualitative data concurrently. (Kothari 2004, Creswell, 2012).

Further, the study assessed the content validity. According to Gay (1997), content validity is established by experts and finds out if the subjects and researchers generally agree that the instrument contains items covering all features of the variable being investigated. It assesses in a subjective manner the agreement between the discrete items and the concept through ranking by professional evaluators (Ojera, 2011). The instruments in this study were therefore evaluated by the three practionners in project monitoring and evaluation.

This assessment involved calculation of content validity index (CVI) which according to Waltz, Strickland, and Lenz (2005), is the proportion of items given a rating of quite/very relevant by both raters involved or the proportion of items given a rating of 3 or 4 by both raters involved. The assessors have to concur that any discrete item is appropriate so as to use it to compute the CVI. In this study, the 55 items were ranked to be quite or highly relevant (a ratings of 1= not relevant; 2 = somewhat relevant; 3 = quite relevant and; 4 = highly relevant) by both experts, and the CVI computed to be 0.818 as shown in table 3.3. Researchers have indicated that a CVI of 0.70 or higher is acceptable (Oso, 2013; Waltz, Strickland, & Lenz, 2005). The CVI for this study was 81.18 %.

Table 3.3: Computation of CVI for a 55-Item Scale with Three Expert Raters

Expert Rater	Items rated 1 and 2	Items Rated 3 and 4	Totals
Expert Rater 1	3	9	12
Expert Rater 2	4	17	21
Expert Rater 3	3	19	22
Totals	**10**	**45**	**55**

CVI = 45/55 =.818

3.5.3 Reliability of Instruments

Reliability refers to the consistence of measurement or the extent to which the results are similar over different forms of the same instrument or occasions of data collection and the extent to which measures are free from errors (McMillan and Schumacher, 2001). To ensure reliability, a pilot study was conducted and results obtained from the pilot instruments were analysed to determine whether or not they capture the required data. The instruments were pretested with a total of 25 respondents which is at least 10% of the parent sample before the actual data collection process. These were drawn from a different population, but one that had experienced a similar intervention.

To achieve this, split-half method of estimating the reliability was used. The pilot instruments were divided into two and the precision of scores obtained to indicate how closely participants' scores on the instrument correspond to their real characteristics. To ensure internal consisteny the scores were subjected to Cronbach's alpha coefficient. Bryman (2011) holds that this instrument can be used to identify items that can be used to measure a particular variable and those that should be eliminated. A test score of 0.7 is prescribed as a cut off or benchmark for items to be included in the study (Cronbach and Richard, 2004). High correlation between the findings of both tests indicates a high reliability of the instrument and was computed as follows.

A= (k/ (k-1)*[1-S (s2i)/s2sum]

Where;

K= the number of discrete items

S2i = the variances of discrete items

S2sum= the variance of the total sum of all the items

The final outcomes of the reliability test are represented in Table 3.4.

Table 3.4 Reliability of research instruments

Variable	Cronbach's alpha	No of items
Stakeholder participation in M&E during project design	0.781	11
Stakeholder participation in M&E during project implementation	0.814	11
Stakeholder participation in utilization of M&E results	0.832	11
Capacity building	0.781	11
Performance of fish farming projects	0.767	11
Mean	0.795	11

As shown in table 3.4, stakeholder participation in M&E during project design yielded a Cronbach's Alpha of 0.781 (11 items), stakeholder participation in M&E during project implementation yielded a Cronbach's Alpha of 0.814 (11 items), stakeholder participation in utilization of M&E results yielded a Cronbach's Alpha of 0.832 (11 items), capacity building, yielded a Cronbach's Alpha of 0.781 (11 items),while performance of fish farming projects yielded a Cronbach's Alpha of 0.781 (11 items). The reliability results show that all the overall alpha coefficient for the variables within the range that is considered reliable using the Cronbach's Alpha shown in Table 3.5.

Table 3.5 Cronbach's alpha

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.7 \leq \alpha < 0.9$	Good
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Very Poor

These findings therefore made the research instrument considered reliable for the study.

3.6 Data Collection Procedure

A number of steps were undertaken to collect the actual data. First, permission was sought from Board of Postgraduate studies of the University of Nairobi and the National Council for Research Technology. Eight research assistants were recruited and trained on the aspects of handling respondents and the ethical conduct of research. The questionnaires and the items in the key informant interview guide and FGDs were cross checked to ensure that they contain what the objectives intend to achieve. This step was followed by subjecting these instruments to a pilot run. Feedback from the pilot study

was used to adjust the questionnaires to the intended standard. The researcher then visited the selected fish farmers and fisheries offices where, after establishing a rapport, explained the intention of the study.

After being granted permission by the farmers and the officials, questionnaires were hand delivered to the respondents in respective projects. Arrangements will then be made on possible dates of collecting the filled questionnaires from the respondents. Further, the study conducted FGDs with the members of the SPMCs. These discussions run between 90 minutes and two hours and were conducted by the researcher.

3.7 Data Analysis Techniques

This section presents quantitative and qualitative data analysis techniques. Quantitative data analysis expounds on the contents of the questionnaire that was used for the purposes of quantitative data collection. The initial stages of data analysis involved encoding of questionnaire responses and entry in an excel spreadsheet for cleaning. The data was consequently imported to Version 17. 0 of SPSS package (Statistical Package for the Social Sciences) software.

Data was then explored for normality, linearity and homogeneity to decide on the probable statistics if relevant assumptions were met. Since most of the assumptions for the parametric tests were met, the study utilized both descriptive and inferential statistics amenable to parametric analysis.

For analysis of Likert responses, the study used a 5-point equidistance scale (Carifio and Perla, 2008) that provided the ranges between the points as follows: Strongly disagree ($1 < SD < 1.8$); Disagree ($1.8 < D < 2.6$); Neutral ($2.6 < N < 3.4$); Agree ($3.4 < A < 4.2$) and Strongly Agree ($4.2 < SA < 5.0$).

Every variable under investigation was investigated using Likert items that were aggregated into a composite Likert scale, which produced a quantitative measure of the variable in an interval scale. This procedure was developed by Likert (Allen and Seaman, 2007) who recommended the use of such aggregated score for advanced data analysis procedures. In this study, the aggregated Likert items describing the variable contributed a maximum composite score and measured the level of the variable in interval scale.

To establish the relationship between the independent variables and the dependent variable the study used simple regression models because the dependent variable which is the performance of fish farming projects is continuous, as recommended by Lucky, (2012). Multiple linear regression models were run to establish the mediating effect of capacity building of stakeholders on the relationship between PM&E and performance of fish farming projects using step-by-step method (Field, 2009).The models were presented using linear equations. Multiple regression analysis is a useful tool for examining the impact of multiple factors on a single outcome of interest. This model gives better prediction from multiple predictors, avoid depending on a single predictor and non-optimal combinations of predictors. Multiple regression models also allow the examination of more sophisticated research hypotheses than is possible using simple correlations.

Since most of the assumptions for parametric tests were met, the study utilized both descriptive and inferential statistics to enable parametric analysis. Whereas descriptive statistics involved the use of central tendency (mean, mode and median), standard deviation and variance; the inferential tests employed the use of Pearson correlation (r) and regression analysis to test the relationships between the study variables.

3.7.1 Analysis of Influence of stakeholder participation during project design and performance of fish farming projects

The study sought to establish the influence of stakeholder participation during project design on performance of fish farming projects. Stakeholder participation during project design was measured in term of level of participation in setting M&E objectives, development of M&E tools and designing M&E framework. Performance of fish farming projects was measured in terms of jobs created, fish produced and quality of fish, income derived and sustainability of the project. This is expressed in the following equation.

Equation 1

$Y= \beta_0 + \beta_1 X+\varepsilon$ Where

Y- Performance of fish farming projects

β_0 = the intercept

β_3 = Regression coefficients shows the change in the value of Y from a unit change in X

X- Level of stakeholder participation during project design

ε = Random error

3.7.2. Analysis of Influence of Stakeholder Participation during Project Implementation.

The study sought to establish the influence of level of stakeholder participation during project implementation on performance of fish farming projects. Stakeholder participation during project implementation was measured in terms of participation in data collection, data presentation and data analysis. Performance of fish farming projects was measured in terms of jobs created, fish produced and quality of fish, income derived and sustainability of the project. This is expressed in the following equation.

Equation 2

$Y= \beta_0 + \beta_1 X+ \varepsilon$ Where

Y- Performance of fish farming projects

β_0 = The intercept

β_1 = Regression coefficients shows the change in the value of Y from a unit change in X

X- Level of stakeholder participation during project implementation

ε = random error

3.7.3 Analysis of Influence of Stakeholder participation in utilization of M&E results and Performance of fish farming projects

The study sought to establish the influence of Stakeholder participation in utilization of M&E results and performance of fish farming projects. Utilization of M&E results was measured in terms of participation in documentation and information sharing of results. Performance of fish farming projects was measured in terms of jobs created, fish produced and quality of fish, income derived and sustainability of the project. This is expressed in the following equation.

Equation 3

$Y= \beta_0 + \beta_1 X+ \varepsilon$ Where

Y- Performance of fish farming projects

β_0 = The intercept

$2z\beta_1$= Regression coefficients shows the change in the value of Y from a unit change in X

X - Level of utilization of M&E results

ε = random error

3.7.4 Analysis of combined PM&E on Performance of fish farming projects

The study sought to establish the influence of combined PM&E on performance of fish farming projects. Combined PM&E was measured in terms of stakeholder participation during project design, stakeholder participation during project implementation and stakeholder participation in utilization of M&E results. Performance of fish farming projects was measured in terms of jobs created, fish produced and quality of fish, income derived and sustainability of the project. This is expressed in the following equation.

Equation 4

$Y= \beta_0 + \beta_1 X+\varepsilon$ Where

Y- Performance of fish farming projects

β_0 = The intercept

β_1 = Regression coefficients shows the change in the value of Y from a unit change in X

X- Combined PM&E

ε = Random error

3.7.5 Analysis of Mediating Influence of Capacity building of stakeholders on the Relationship between PM&E and Performance of fish farming projects

To investigate the mediating influence of capacity building between the predictor variable and the dependent variable, the three models were formulated in line with the recommendations of Baron and Kenny (1986). Model 3.1 was employed as the base model to determine the relationship between independent variable (PM&E) and dependent variable performance of fish farming projects. Model 3.2 estimated the relationship between the mediating variable (Capacity building) and the independent variable (PM&E). Finally, Model 3.3 was estimated to determine whether there was complete, partial or no mediation between the predictor and the dependent variables.

Model 3.1: Regression model of combined PM&E (X) predicting performance of fish farming projects (Y)

$$\gamma = \beta_0 + \beta_1 X_1 + e$$

Model 3.2: Regression equation of capacity building (M) predicting performance of fish farming projects (Y)

$$M = \beta_0 + \beta_1 X + e$$

Model 3.3: Regression equation to test whether the influence PM&E is insignificant when capacity building (M) is controlled for while there is a significant relationship between capacity building (M) and performance of fish farming projects (Y) when PM&E is controlled.

$$Y = \beta_0 + \beta_1 M + \beta_2 X + e$$

The decision making criteria was in line with the suggestions of Baron and Kenny (1986) as shown in table 3.6

Table 3.6 Mediation Decision Making Criteria

	Outcomes	**Conclusions**
1	When β_1 is significant in equation 3.1	Complete Mediation
	When β_1 is significant in equation 3.2	
	When β_1 is not significant and β_2 is significant in equation 3.3	
2	When β_1 is significant in equation 3.1	Partial Mediation
	When β_1 is significant in equation 3.2	
	When β_1 is significant in equation 3.5 but β_1 is not significant in equation 3.6 and β_2 is significant in equation 3.3	
3	When β_1 is not significant in equation 3.1	No Mediation
	When β_1 is not significant in equation 3.3	
	When β_1 is significant in equation 3.1 and equal to β_1 in equation 3.3 and β_2 is not significant in equation 3.3	

Source; Baron and Kenny (1986)

In a complete mediation, β_1 in Equation 3.1 and 3.2 must be significant but insignificant in Equation 3.3, and $\beta_2$must be significant in Equation 3.6. For partial mediation, β_1 in Equations 3.1 and 3.2 must be significant but β_1 in equation 3.2 should be significant but β_1 should not be significant in Equation 3.3 and β_2 should be significant in equation 3.3. In no mediation, β_1 in Equations 3.1 and 3.2 must not be significant, but β_1 should be significant in equation 3.7.

Table 3.7 Summary of Hypotheses of the Study, the Models, Statistical Analysis and Interpretation Results

Hypotheses	Model	Statistical Analysis	Interpretation of Results
H_1:Stakeholder participation in M&E during project design has a significant influence on performance of fish farming projects	$Y=\beta_0+\beta X+\varepsilon$ Where: Y= performance of fish farming projects X=Stakeholder participation in M&E during project design	Pearson r correlation coefficient: Linear regression r, R^2, p and t Values	The model establishes the variation in performance of fish farming projects resulting from Stakeholder participation in M&E during project design
H_2: Stakeholder participation in M&E during project implementation has a significant influence on performance of fish farming projects.	$Y=\beta_0+\beta X+\varepsilon$ Y= performance of fish farming projects X = participation in M&E during project implementation	Pearson r correlation coefficient: Linear regression r, R^2, p and t Values	The model establishes the variation in performance of fish farming projects resulting from Stakeholder participation in M&E during project implementation
H_3: Stakeholder participation during utilization of M&E results has a significant influence on performance of fish farming projects	$Y=\beta_0+\beta X+\varepsilon$ Y= performance of fish farming projects X= Stakeholder participation during utilization of M&E results	Pearson r correlation coefficient: Linear regression r, R^2, p and t Values	The model establishes the variation in performance of fish farming projects resulting from Stakeholder participation during utilization of M&E results

H_4: Joint PM&E has a significant influence on performance of fish farming projects	$Y=\beta_0+\beta_1X_1+B_2X_2+\beta_3X_3+\varepsilon$ Y_1= performance of fish farming projects, X_1= Stakeholder participation in M&E during project design, X_2 = Stakeholder participation in M&E during project implementation, X_3 = Stakeholder participation during utilization of M&E results	Pearson r correlation coefficient: Linear regression r, R^2, p and t Values	The model establishes the variation in performance of fish farming projects resulting from joint PM&E
H_5:The joint influence of PM&E on performance of fish farming projects project is mediated by Capacity building	$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4(M)+\varepsilon$ Y= performance of fish farming projects, X_1= stakeholder participation in M&E during project design , X_2= stakeholder participation in M&E during project implementation X_3= stakeholder participation in utilization of M&E results, M= capacity building	Pearson r Correlation Coefficient: Linear Regression Analysis R^2,p and t values Stepwise regression	The model establishes the variation in performance of fish farming projects resulting from joint PM&E, when mediated by capacity building

Where:

Y =Dependent variable

X_1…..The first predictor

X_2….The second predictor variable

X_3…..The third predictor variable

M…..The mediating variable (the fifth predictor variable)

β_0……Y –Intercept (the constant term)

β_1…...The coefficient the first predictor variable

β_2……The coefficient the second predictor variable

β_3……The coefficient the third predictor variable

β_5…….The coefficient of the joint variables (independent and mediating (M) the interaction term between the independent variable ((X_1* X_2* X_3) and the mediating variable (M)

3.8 Qualitative Data Analysis

The study employed an inductive approach for the purposes of qualitative data analysis. This means that where the actual data collected was used to form the structure of analysis without following a pre-determined framework. First, the FGD guide was pre-organized by overall theme and data was collected so as to make it easier to review individual responses to items identify the main ideas. Data was processed manually using a thematic content analysis method that followed a focus by question approach. The approach analysed the SPMCs responses to individual items in the interview guide and identified themes, their consistencies and differences. The responses were then summarized and parallels drawn. The analysis allowed themes and categories to explicit themselves from the data, and were regularly adjusted as new categories evolved.

In the next step of qualitative data analysis, the interviews and FGDs were transcribed from tape to paper, the written transcript was reviewed for completeness. As this was done, the study took care was taken to retain the verbatim responses so as to ensure that the translations to be as close and give the best reflection of the original discussions.

The study further made notes for each of the transcribed data in the script margins of words and short phrases that summed up what had been recorded in the text. This enabled the preparation of the preliminary open coding framework. In an effort to remove duplications and overlapping, the responses were put down into a new set of pages and subsequently summarized into categories. The categories were at this stage collapsed into eleven categories. These eleven categories were then used to divide all the discussions' responses.

To sum up the qualitative data analysis, the responses were discussed with experts in the field for the purposes of verification, validation elimination of possible researcher biases. This enabled the interpretation of the verbatim responses under every theme corresponding to a specific objective. On this premise, all the qualitative study findings were interpreted for every study objective.

3.9 Ethical Considerations

This study adhered to ethical by undertaking the following measures. A research permit was sought from the Ministry of Education Science and Technology (MoEST), National Commission for Science, Technology and Innovation (NACOSTI). It is only after the approval is given that data collection process commenced. On top of this participation in both quantitative and qualitative components of the study by all participants was voluntary, confidential and anonymous. The respondents were cognizant about the objectives of the study and then requested to contemplate on taking part. This informed consent was intended at defending the research participants on issues of personal exposure and confidentiality. The identities of the participants was therefore not be divulged in the whole study course. Participants were given the freedom to answer to any inquiries or withdraw from the process at any point.

This study did not harass or offer inducement to participants, contact them at unreasonable time and place, subject them to any attempt to prolong the duration of interview or observation beyond the previously agreed duration unless the participants freely propose this as an option.

3.10 Operationalization of Variables

The operationalization of Variables is as shown in Table 3.8.

Table 3.8: Operational Definition of Variables

Objective	Variables	Indicators	Measurements	Measurement scale	Study Approach	Tools of Analysis	Specific tools
1.To examine the extent to which stakeholder participation in M&E during project design influences the performance	**Independent Variable** stakeholder participation in M&E during project design	Level of participation in setting M&E objectives Level of participation in development of M&E tools Level of participation in designing an M&E	Number of meetings attended Frequency of meetings Level of involvement in discussions Level of control over decisions	Interval Interval	Mixed method	Measures of central tendency Measures of dispersion Tests of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis
	Dependent Variable Performance of fish farming projects	Number of jobs created by the project Amount of fish produced as food in kgs Quality of fish in average size and weight Income derived from fish farming in Ksh. No of ponds completed in time No of abandoned ponds Sustainability in terms of expansion ,	Level of employment Level of food security average size and weight Level of income generated Completion rate Failure rate Expansion rate Level of membership	Interval Interval Interval	Mixed method	Measures of central tendency Measures of dispersion Test of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis

Objective	Variables	Indicators	Measurements	Measurement scale	Study Approach	Tools of Analysis	Specific tools
		formation of clusters, membership and shareholding in cooperative society	Share capital contribution				
2. To assess how stakeholder participation in M&E during project implementation influences performance of fish farming projects	**Independent Variable** stakeholder participation in M&E during project implementation	Level of participation in data collection Level of participation in data presentation Level of participation in Data analysis	Level of participation in pond construction Level of participation in fish husbandry Level of participation in harvesting and marketing of fish	Interval Interval Interval	Mixed method Mixed method	Measures of central tendency Measures of dispersion Tests of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis
	Dependent Variable Performance	Number of jobs created by the project Amount of fish produced as food in kgs Quality of fish in average size and weight Income derived from fish farming in Ksh. No of ponds completed in time No of abandoned ponds Sustainability in terms of expansion , formation of clusters, membership and	Level of employment Level of food security Level of income	Interval Interval Interval	Mixed method Mixed method	Measures of central tendency Measures of dispersion Test of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis

Objective	Variables	Indicators	Measurements	Measurement scale	Study Approach	Tools of Analysis	Specific tools
		shareholding in cooperative society					
3. To assess how stakeholder participation in utilization of M&E results influences performance of fish farming projects	**Independent variable** stakeholder participation in utilization of M&E results	Level of participation in documentation of M&E results Level of participation in information sharing	Level of participation in choice of M&E indicators Level of participation in in data collection Level of participation in in utilization of M&E results	Interval Interval Interval	Mixed method Mixed method	Measures of central tendency Measures of dispersion Tests of relationship	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis
	Dependent Variable Performance of fish farming projects	Employment Food security Income.	Level of employment	Interval Interval Interval	Mixed method	Measures of central tendency Measures of dispersion Test of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis
To determine how the combined influence of participatory monitoring and evaluation influences the performance of fish farming projects	**Dependent Variable** Performance of fish farming projects	Number of jobs created by the project Amount of fish produced as food in kgs Quality of fish in average size and weight Income derived from fish farming in Ksh. No of ponds completed in time	-Level of food security	Interval Interval Interval	Mixed method Mixed method	Measures of central tendency Measures of dispersion Tests of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis

Objective	Variables	Indicators	Measurements	Measurement scale	Study Approach	Tools of Analysis	Specific tools
		No of abandoned ponds Sustainability in terms of expansion , formation of clusters, membership and shareholding in cooperative society					
	Independent Variable Participatory Monitoring and Evaluation (PM&E)	stakeholder participation in M&E during project design stakeholder participation in M&E during project implementation stakeholder participation in utilization of M&E results	Level of stakeholder participation in M&E during project design Level of stakeholder participation in M&E during implementation Level of participation in utilization of M&E results	Interval Interval Interval	Mixed method Mixed method	Measures of central tendency Measures of dispersion Tests of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis
5. To establish the extent to which joint influence of capacity building and participatory monitoring and evaluation influences the performance of fish farming projects	**Dependent Variable** Performance of fish farming projects	Employment Food security Income.	Level of employment Level of food security Level of income	Interval Interval Interval	Mixed method Mixed method Mixed method	Measures of central tendency Measures of dispersion Tests of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis
	Independent variable	Level of acquired skills	Informed decision making	Interval Interval	Mixed method	Measures of Central Tendency	Mean

Objective	Variables	Indicators	Measurements	Measurement scale	Study Approach	Tools of Analysis	Specific tools
	Capacity building	Strength of local networks Ability to solve problems	Application of acquired skills in fish farming - level of information about ESP.	Interval	Mixed method	Measures of dispersion Tests of Relationships	Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis
	Independent Variable Participatory Monitoring and Evaluation (PM&E)	stakeholder participation in M&E during project design stakeholder participation in M&E during project implementation stakeholder participation in utilization of M&E results	Level of stakeholder participation in M&E during project design Level of stakeholder participation in M&E during implementation Level of participation in utilization of M&E results	Interval Interval Interval	Mixed method Mixed method	Measures of central tendency Measures of dispersion Tests of relationships	Mean Standard Deviation Pearson's product-moment correlation coefficient Regression Thematic content analysis

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents analysis of the questionnaire return rate and profile of the respondents in terms of their relationship to the projects. It also presents analysis of test for multicollinearity and analysis of Likert-scale data. The main study findings are organized in subsections presented under each study objective. The subsections are performance of fish farming projects, stakeholder participation in M&E during project design, stakeholder participation in M&E during project implementation, stakeholder participation in utilization of M&E results, the mediating influence of capacity building on the relationship between PM&E and performance of fish farming projects.

4.2 Questionnaire Return Rate

The study administered 247 questionnaires on self- administration basis to the sampled fish farmers by physically visiting the farms in an endeavour to get a higher response rate. This process took a period of three months and was carried out by the researcher with the aid of three research assistants who were previously trained for a day. As a result, 226 questionnaires representing 90.28% questionnaire return rate was achieved. Researchers agree that the higher the questionnaire response rate, the more reliable survey estimates. A response rate that is greater than 70% is adjudged sufficient. The response rate of 90.28% was therefore adjudged to be appropriate and so further analysis was considered plausible (Dillman, 2000).

This high questionnaire return rate was attributed to the fact that trained research assistants visited the selected respondents where, after establishing a rapport, explained the intention of the study administered the questionnaires and collected them on the same day. In cases where the respondents were fisheries officials and could be busy on that date, arrangements were then be made on possible dates of collecting the filled questionnaires from the respondents.

The study then conducted 8 interviews with the project managers. Further, 4 focus group discussions were held comprising of SPMCs members of the sampled fish farming projects during the scheduled meetings. Each focus group constituted 7 members who served as the implementing agency.

4.3 Demographic Characteristics of Respondents

This section presents the respondents in terms of their demographic characteristics. This was assessed in terms of gender, age, level of education and occupation. This was aimed at investigating how the project participants were distributed along their demographic characteristics and how this was in line with the ESP policy guidelines.

4.3.1 Gender of the respondents

This study investigated the participants in the fish farming projects in terms of whether they were male or female. Generally the findings were that majority of the participants were male while females formed the minority.

The results of the analysis are presented in Table 4.1

Table 4.1: Gender of the respondents

Gender of the respondents	Frequency	Percentage
Female	70	31.0
Male	156	69.0
Total	**226**	**100.0**

According to Table 4.1, the study revealed that 70 (58.5%) of the respondents were female while 156 (69.0%) were male. This indicates that there were more males than females in uptake of fish farming projects activities in the project. These findings are in agreement with earlier studies that majority of the fish farmers are men. In a study conducted in Kirinyaga, this was because fish farming requires ownership of land (Ngugi, et al, 2014**).** Similary, Nyeri County is a patriarchal society where land ownership is mostly in the hands of men and in some cases construction of ponds by females required consent from their male counterparts (Maina, 2014). This finding was also contrary to the findings of Okali (2006) found out that women were more likely to indulge in small projects such as fish pond farming.

4.3.2 Age of the respondents

This study further investigated the participants in the fish farming projects in terms of age. This was meant to find out the uptake of the fish farming projects in terms of their age brackets. Generally the findings were that majority of the participants were above 40 years of age.

The results of the analysis are presented in Table 4.2

Table 4.2: Age of the respondents

Age of the respondents	Frequency	Percentage
Below 20 years	2	.9
21-30 years	7	3.1
31-40 years	42	18.6
41-50 years	70	31.0
Above 50 years	105	46.5
Total	**226**	100.0

Table 4.2 shows the findings of the ages of the participants in terms of five age categories. The vast majority of the respondents 175 (77.5%) were above 40 years with only 51(22.6%) representing the youth with ages ranging from 40 years and below. Again, despite the ESP's policy to prioritize involving young people by engaging them in gainful employment and generate income (MOFD, 2011), this objective was not fully achieved. These findings were in contrast to those of Polson and Spencer (1991), that age was positively correlated with adoption of fish farming technologies with younger farmers being more likely to try new technologies than older farmers and similarly ended up harvesting more fish per year than the older farmers.

4.3.3 Level of education among the respondents

This study further investigated the level of education among the project participants. This was measured in terms of participants' highest academic qualifications. This was meant to establish the participants' ability to acquire of employees' skills in fish farming. The study found out that majority of the employees had secondary education as their highest academic qualifications followed by diploma, then primary education and lastly with very few having postgraduate education .This information is summarized on Table 4.3.

Table 4.3 Level of education among the respondents

Level of education	**Frequency**	**Percentage**
Primary education	32	14.2
Secondary education	101	44.8
Diploma	71	31.4
Degrees	21	9.3
Post graduate	1	0.4
Total	**226**	**100.0**

According to Table 4.3, the study revealed that level of education among the participants was generally high with a majority 194 of the respondents representing 85.9% with secondary education and above and only a partly 32 representing 14.2 % of the respondents. Since fish farming is a technologically based project with activities ranging from pond construction, feeding, harvesting and post-harvest handling, the level of education was likely to have an implication on participation in the project. A study by Mwangi (2008) also revealed that formal education is positively correlated to the probability to adopt farming technologies. The author attributed this to the fact that much of the fish farming technologies were communicated to farmers through pamphlets, newsletters, trainings and seminars, which were conducted in the English language. Similarly, Solomon & Kerere (2013), concur that education can have an impact on the adoption of fish farming since it aids farmers to understand the technology that is required.

4.3.4 Occupation of the respondents

The study sought to establish the occupations of the project participants. This was meant to establish the participants' ability to devote time and attention in fish farming projects' activities. The study found out that majority of the participants were farmers with other engagements in the agricultural sector followed by farmers with other engagements in the formal sector, then farmers with full employment in the informal and informal sectors and lastly full time farmers with no other engagements. This information is summarized on Table 4.4.

Table 4.4 Occupation of the respondents

Occupation	Frequency	Percentage
Farmer with full time employment in the formal sector	14	6.19 %
Farmer with other non-agricultural engagements in the informal sector	14	6.19%
Farmer with other agricultural engagements in the formal sector	61	26.99%
Fish farmer with other farming activities in the agricultural sector	118	52.21%
Full fish farming with no other engagements	19	8.41%
Total	**226**	**100.0**

On the other hand, the study revealed that only 19 (8.41%) of the respondents were full time fish farmers with no other engagements. This represents the number of residents who could fully dedicate all their time in the project activities and consequently increase their chances of a better performance. Further, a vast majority 193 (94.59 %) were engaged in other activities out which 19 (8.41%) in full time employment in the formal sector, 14 (6.19%) engaged in non-agricultural engagements in the informal sector, 14(6.19%) engaged in agricultural engagements in the formal sector and 118 (52. 21% engaged in with other farming activities in the agricultural sector. These findings were similar to those of Ngugi et.al (2007) who found that very few fish farmers in Kenya take as full time employment.

4.4 Tests for Statistical Assumptions and Analysis of Likert-Type Data

This section investigates the significance of multicollinearity in regression analysis, the different methods of remedying multicollinearity situations and test results for multicollinearity and normality analysis. The section further discusses the use of Likert scale in data analysis.

4.4.1. Test for Multicollinearity

The test for multicollinearity was an effort to assess the non-independence of independent variables. This is a prerequisite in regression analysis. Multicollinearity, exists when two or more independent variables are inter-correlated. The concern in scholarly work is not its presence but the effect it yields on the analysis (Baguley, 2012). Pedace (2014) agree that multicollinearity has significant effect only when the correlation coefficient of the interacting independent variables is equal to or greater than 0.7. Whereas multicollinearity has no effect on the overall regression model and associated statistics, it is unreliable if a researcher is interested in assessing the effects of individual independent variables on the dependent variable when performing multiple regression, unless their degree is small or the sample size is very large (Baguley, 2012).

When high multicollinearity occurs, the independent variables tend to share substantial amounts of information and compete to explain a similar variance making it difficult to assess the effect of an individual variable on the dependent variable (Kutner et al., 2004). Futher, extrapolation has chances of resulting to misleading judgements since the parameter estimates may be unstable and standard errors on estimates inflated leading to inaccurate tests of significance for the independent variables and biased inference statistics (Ohlemuller et al., 2008).

However, this may be remedied by either dropping one of the collinear variable (Gujarati and Porter, 2009), combining or transforming the highly correlated independent variables into a single variable (Allison, 1999) or removing multicollinearity source variables (Zainodin et al., 2011). It may also be overcome by detecting, quantifying and adjusting the regression coefficients for the effects of multicollinearity in a data base using principal components analysis (PCA) technique (Lafi and Kaneene, 1992) or by modifying the method of least squares to allow biased estimators of the regression coefficients to remedy the multicollinearity problem using ridge regression technique (Kutner et al. 2004).

Unless remedied, most statistical programmes will estimate the effect of an individual independent variable by holding the other correlated variable constant, ignoring the shared variance between them. This effectively reduces the variability of the independent variable of interest and its influence, the effective amount of information available to assess the unique effects of the variable, the effective sample size for the effects of individual independent variables and the statistical power for estimating the individual independent variable (Baguley, 2012). A small effective sample size tends to be less similar to the population than a large sample size leading to problems of stability of estimates (Baguley, 2012). In this study, pair-wise collinearity of the independent variables was performed and the resultant correlation matrix is presented in Table 4.5.

Table 4.5: Multicollinearity Matrix of Independent Variables

Variables	**Capacity Building**	**Demographic Characteristic**	**PM&E in Project design**	**PM&E in Project Implementation**	**PM&E in Utilization of Project Results**
Capacity Building	1	-.113	.684	.515	.389
Demographic Characteristic	-.113	1	-.178	-.125	-.067
PM&E in Project design	.684	-.178	1	.450	.650
PM&E in Project	.515	-.125	.450	1	.414
PM&E in Utilization of M& E Results	.389	-.067	.650	.414	1

Table 4.5 shows that when capacity building was correlated with stakeholder participation in M&E during project design, it produced 0.684, 0.515 with stakeholder participation in M&E

during project implementation and 0.389 with stakeholder participation in utilization of M&E results.

Stakeholder participation in M&E during project design and stakeholder participation during project implementation produced 0.450, 0.650 with stakeholder participation in utilization of M&E results while the correlation between stakeholder participation +during project implementation and stakeholder participation in utilization of M&E results was 0.414. All the correlations were below 0.7, the lower limit for significant multicollinearity of independent variables (Pedace, 2014), it indicated that the independent variables shared no significant amount of information that would make them compete to explain a variance in the dependent variable. It was thus possible to assess the influence of each independent variable on the dependent variable (performance of fish farming projects projects) without the risk of factoring in shared variance between the independent variables. The research concluded that the independent variables were independent of each other and appropriate for entry in the regression analysis model.

4.4.2 Test for Normality the responses on the performance of fish farming projects

The study further determined whether the responses on the performance of fish farming projects were normally distributed .This was fundamental in order to determine the appropriate tests to be conducted and make sure that assumptions of normal distribution were not violated (Shapiro and Wilk, 1965).

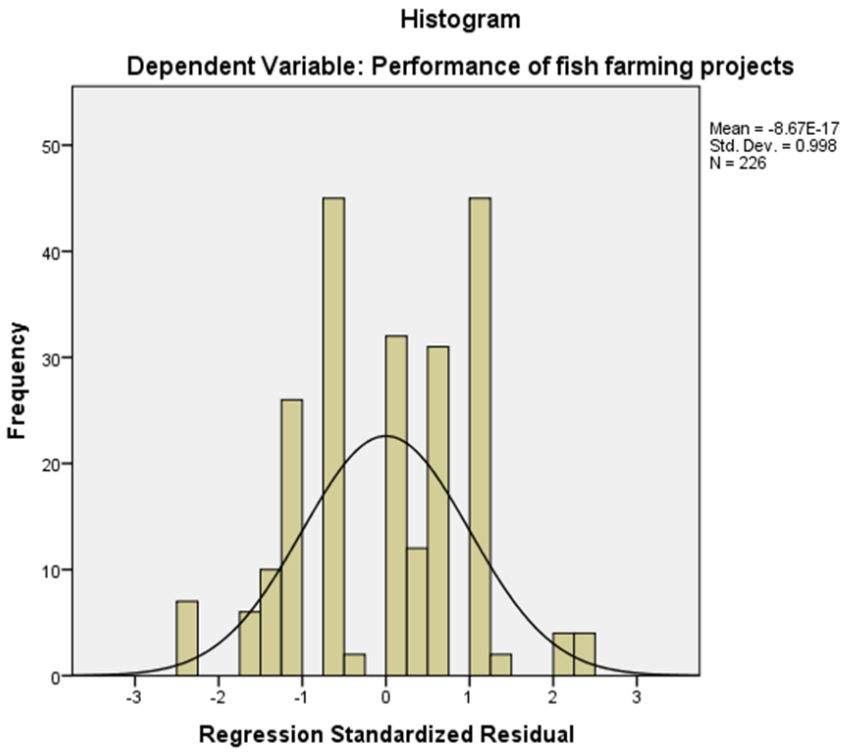

Figure 2: Histogram showing the distribution of performance of fish farming projects Responses

The figure 3 shows that there were minimum deviations from normality in which case the overall distribution appeared normal. From the histogram, the distribution is symmetrical and does not look seriously peaky or flat. This shows that the distribution was normal. A visual inspection of histograms thus showed performance of fish farming projects responses were approximately normally distributed among all respondents. The distribution was, therefore, considered normal. This is also consistent with the central limit theorem that that postulates that as the sample sizes get larger, the less the assumption of normality matters. (Elliott and Woodward, 2007; Field, 2013). According to Elliot and Woodward (2007), for large sample sizes (40 or more), central theorem can be assumed, and as such the use of parametric procedures can still be justified.

4.4.3 Analysis of Likert-Scale Data

The study used questionnaires with multiple Likert items arranged into groups each addressing one of the seven variables under study. Each Likert item produced a response from an ordinal

5-point Likert response categories; Strongly Disagree = 1, Disagree = 2, neutral = 3, Agree = 4 and Strongly Agree = 5. For each variable, an aggregate score was derived by summing up the scores of the Likert items detaching a particular variable to compute an interval Likert scale (Cariffio and Perla, 2008). This data was then subjected to regression analysis. As Cariffio and Perla (2008) and Creswell (2012) prescribed , parametric tests can be performed on summed up scores of Likert scale data (that assumes interval scale) provided that the data is of appropriate shape and size and multiple categories are formulated within a scale with equality of variance. Norman (2010) while agreeing with them on the application of the methods on Likert data argued that sample sizes, normality and ordinal- level measurement could not hinder the use of parametric methods due to their robustness. He concluded that the methods could be used without the fear of coming to the wrong conclusion.

4.5 Performance of Fish Farming Projects

This section presents a descriptive analysis of performance of fish farming projects identified as the dependent variable. Specifically, it evaluates the means of the individual questionnaire responses, the mean of means of all items extricating the variable and the performance of fish farming projects. Performance of fish farming projects was identified as dependent on three PM&E components namely, agreed upon by Pollnac, Crawford and Gorospe (2001) to include; stakeholder participation in M&E during project design, stakeholder participation in M&E during project implementation, and stakeholder participation in utilization of M&E results.

In this study, the indicators of performance of fish farming projects were analyzed using number of jobs generated by the projects, amount of food produced in kilograms of fish, the income derived from the fish projects in Kenya shillings, the quality of fish produced, the time taken to complete the projects, and the sustainability of the projects as outlined in the desired outcomes of the ESP in fish farming projects. This is also in line with the criteria of performance of project as used by Gkritza, Labi, and Sinha (2006).

The mean of the individual items was calculated to level of performance, the mean of means was calculated to assess the extent to which the respondents agreed with the level of performance of fish farming projects while frequencies and percentages. The mean of the individual items was calculated to assess the degree to which a proportion of respondents agreed with view expressed in the item, the mean of means was calculated to assess the extent

to which the respondents agreed with the level of performance of fish farming projects. The results of analysis of means and the mean of means are presented in Table 4.6.

Table 4.6: Performance of Fish Farming Projects

SN	INDICATOR	N	SD	D	N	A	SA	M	SD
1.	Increase in number of jobs	226	38 (16.8%)	49 (21.7%)	39 (17.3%)	80 (35.4%)	19 (8.4%)	2.97	1.262
2.	Increase in amount of food produced in kilograms of fish	226	31 (13.7%)	47 (20.8%)	58 (25.7%)	61 (27.0%)	29 (12.8%)	3.04	1.243
3.	Increase in income of the people engaged in fish farming activities	226	36 (15.9%)	36 (15.9%)	65 (28.8%)	76 (33.6%)	13 (5.8%)	2.97	1.170
4.	Quality of fish produced	226	31 (13.7%)	47 (20.8%)	58 (25.7%)	61 (27.0%)	29 (12.8%)	3.04	1.243
5.	Sustainability of the fish farming project	226	32 (14.2%)	48 (21.2%)	63 (27.9%)	76 (33.6%)	7 (3.1%)	2.90	1.111
	Composite Mean							**2.98**	**1.14**

As shown in Table 4.6 35.4% of the respondents agreed that increase in jobs the influenced the performance of fish farming projects. The findings revealed a mean of 2.97 and the standard deviation was 1.262. The study further found that 33.6% of the respondents agreed that sustainability of the project influenced the performance of fish farming projects with a mean of 2.90 and a standard deviation of 1.11. All the responses were recorded on a 5-point Likert scale. The results produced a measures of central tendency with the mean of 2.98 and standard deviation 1.41.

Focus group discussions and interviews revealed that the performance fish farming projects was good. This observation was clearly voiced by participants in the fish projects.

> *"Infact, you cannot serve in this committee if you don't know this work. My farm is a demo plot for my colleagues. With the opening of the factory, I have been making something good from fish" SPMC member .*

> *"I always have fish 24hrs. Call me any time and will bring you whatever amount" SPMC member .*

"The issue is not the fish; soon it will be where to take it or what do with it. But now that the factory is opened at Wamagana, work is only about fish. Why spend on other jobs. Fish is the best job these days."SPMC member.

"The report so far is good. We can't complaint about this intervention. We are doing well. We are better than others, they are always calling to find out how we do it." Interviewee.

These findings are also in agreement with previous studies agree on the robust link between investment in ESP projects and improvement in the quality of life in an area by increasing income, job choices, activity choices, stability, and amenities (Singh, Gkritza, and Sinha, 2007) and (Weisbrod and Forkenbrock, 2001).

This also concurs with the findings of (Kasekende, Brixova and Ndikumana, 2010) who reports that the performance of ESP projects in Sub-Saharan Africa reveal good performance. However, in these studies, information was gathered by project teams, using similar approaches adopted from the national level through technical assessments of government records. The data was then dispatched to the national team for where it was analyzed in tabular and regression analysis. They however did not investigate the primary beneficiaries of the programme such as the farmers (World Bank, 2010). The findings are almost similar to results from fish farms in Zimbabwe, Zambia, Nigeria, Malawi and Ghana, Roderick (2002) who studied and found out that majority of ESP fish farming projects reported performances of average and above.

4.6 Stakeholder Participation in M&E during Project Design and performance of fish farming projects

The first objective in this study was examine the relationship between stakeholder participation in M&E during project design and performance of fish farming projects. To achieve this, the study first established the level of stakeholder participation in M&E during project design, established its correlation with the performance of fish farming projects and then conducted a regression analysis.

4.6.1 Stakeholder Participation in M&E during Project Design

This subsection investigates the level of stakeholder participation in M&E during project design and performance of fish farming projects by examining the questionnaire items

investigating the levels. The level of Stakeholder Participation in M&E during Project Design operationalized as the first independent variable and for the purpose of this study it was measured by the level of participation in setting M&E objectives, level of participation in development of M&E tools and the level of participation in designing M&E framework suggested (Coupal, 2001).

These indicators were evaluated by eleven (11) questionnaire items and the findings presented further in two sub-sections. The first sub-section provides descriptive analysis of the findings while the second subsection presents a discussion comparing findings with past studies. It specifically evaluates the means of the individual items, the mean of means, and the level as expressed in focus group discussions. The mean of the individual items examined the degree to which a proportion of respondents agreed with view expressed in the item. The mean of means and the mean of the aggregate scores revealed the extent to which the respondents agreed the level participation in M&E during the design of the projects and presented in Table 4.7

Table 4.7 Stakeholder Participation in M&E during Project Design

SN	ITEM	N	SD	D	N	A	SA	M	SD
1.	Stakeholders participation in setting M&E objectives	226	18 (8.0%)	48 (21.2%)	48 (21.2%)	64 (28.3%)	48 (21.2%)	3.34	1.248
2.	Stakeholders participation in development of M&E tools	226	17 (7.5%)	37 (16.4%)	50 (22.1%)	71 (31.4%)	51 (22.6%)	3.45	1.218
3.	Stakeholders participation in designing M&E framework	226	15 (6.6%)	40 (17.7%)	52 (23.0%)	71 (31.4%)	48 (21.2%)	3.43	1.195
	Means of means							**3.41**	**1.22**

As shown in Table 4.7, 35.4% of the respondents agreed that stakeholders participated in setting M&E objectives. The findings revealed a mean of 3.34 and the standard deviation was 1.248. The study further found that the respondents agreed that stakeholder's participation in setting M&E objectives influenced the performance of fish farming projects. All the responses

were recorded on a 5-point Likert scale. The results revealed that the level of stakeholder participation was average with a composite mean of 3.41 and standard deviation 1.22.

Focus group discussions and interviews revealed that level of stakeholder participation in M&E during project design was good as it was boosted by elections of stimulus project management committees SPMCs. These committees were constituted at preliminary stages of the project. The members were first trained by ministry officials upon which basis they designed the projects together. This contributed to their ability to participate in M&E part of which was their mandate as outlined in the ESP policy.

> *'The first thing we heard about this project was an invitation of people interested in fish farming to a meeting. On the same day we attended, elections were held and a committee was formed. They then started asking us when we want to do what.' SPMC Member.*

> *"I can bear witness that stakeholders fully participate in the design of M&E tools. My work as the project manager is just to convene meetings. The participants define what we will inspect when and how. There couldn't have been a better way involve stakeholders in M&E. "INTERVIEWEE.*

4.6.2 The relationship between Stakeholder Participation in M&E during Project Design and Performance of Fish Projects

The study further conducted a correlation analysis between the two variables. To start with stakeholder participation in M&E during project design was correlated with performance of fish farming projects. All the correlation were deemed significant at a set value of 0.05 the results are presented in Table 4.8

Table 4.8: Correlation Analysis of Level of stakeholder participation in M&E during project design and performance of fish farming projects

		Stakeholder participation in M&E during project design	Performance of fish farming projects
Stakeholder participation in M&E during project design	Pearson Correlation	1	.556**
	Sig. (2-tailed)		.000
	N	226	226
Performance of fish farming projects	Pearson Correlation	.556**	1
	Sig. (2-tailed)	.000	
	N	226	226

**. Correlation is significant at the 0.05 level (2-tailed).

The Pearson correlations between the variables are shown in Table 4.8 show that the study found that stakeholder participation in M&E during project design was moderately and positively correlated with performance of fish farming projects (r = 0.556, p < .05). This implies that as the level of stakeholder participation in M&E during project design, the better the performance of fish farming projects.

The study further tested the hypothesis that there is a significant relationship between the level of stakeholder participation in M&E during project design and performance of fish farming projects in Nyeri County. The null hypothesis was phrased as follows:

Ho1: There is no significant relationship between stakeholder participation in M&E during project design and performance of fish farming projects in Nyeri County

This was tested using the model

Model 1; $Y= \beta_0 + \beta X+ \varepsilon$

Where;

Y= performance of fish farming projects

X= Level of stakeholder participation in M&E during project design

β_0 = the intercept (constant term)

β_1 = Regression coefficients shows the change in the value of Y for a unit change in X

ε = random error

A linear regression analysis was conducted to examine how well stakeholder participation in M&E during project design predicted performance of fish farming projects. The model represented a value of R^2 which show the proportion of variation in dependent variable explained by the regression model. Table 4.9 show that the level of stakeholder participation in M&E during project design had a coefficient adjusted R^2=.306. This indicates that 30.6 % of the variation in performance of fish farming projects can be accounted for by the level of stakeholder participation in M&E during project design.

Table 4.9: Stakeholder Participation in M&E during Project Design and performance of fish farming projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.556[a]	.310	.306	.594	.310	100.437	1	224	.000

a. Predictors: (Constant), Stakeholder participation in M&E during project design
b. Dependent Variable: Performance of fish farming projects

Table 4.10: Coefficients of Stakeholder Participation in M&E during Project Design

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.860	.132		14.07	.000	1.600	2.120
	Stakeholder participation in M&E during project design	.377	.038	.556	10.022	.000	.303	.451

a. Dependent Variable: Performance of fish farming projects

Hence the final simple regression model can be explained as;

$Y= 1.860 + 0.556 X+ \varepsilon$

Where;

Y = performance of fish farming projects

X_1 = Stakeholder participation in M&E during project design

For the hypothesis that there is no significant influence of the level of Stakeholder participation in M&E during project design on performance of fish farming projects, results illustrated that a unit increase in stakeholder participation in M&E during project design is responsible for increasing project performance by 0.556. This relationship was found to be statistically significant with ($t=10.02$, $p<0.05$). Therefore rejecting the null hypothesis and accepting the alternative hypothesis that the level of Stakeholder participation in M&E during project design significantly influences the performance of fish farming projects.

The discussions of FGDs further revealed that projects with a favorable timetable for M&E produced better performances. This is as retorted by SPMC member in Nyeri Municipality fish project.

> *"I feel well represented in the meetings to plan the inspection of our projects. I know when and what is to be inspected and as one of the inspectors, I am always ready what then would make me fail in fishing work. I feel that stakeholders participate well". SPMC Member.*

The input was the same as expressed by another FGD participant who remarked

> "*When the project was starting, we were called for meetings well in advance. They even had experts from the government and other well-known to us. We felt the project as our own and were ready to work hard." SPMC Member.*

This finding was in line with interviews that related stakeholder participation in M&E during project design and performance of fish farming projects in Nyeri County. The discussions revealed that stakeholders' participation in terms of setting M&E objectives, development of M&E tools and formulation of M&E frameworks as the key participation opportunities that influenced design of the projects and increased projects' performance probabilities.

> *"The outcomes of the project is dependent on the extent to which you allow the participants participate in M&E from the word go. The more you let them design the inspection the more they produce on the ground since they know what is expected." INTERVIEWEE.*

These findings were in line with previous findings [FAO (2011), Marsden, David and Oakley (2008) and World Bank report, 2010] that concur that stakeholder's participation in M&E during project design as the missing element in projects and consequently attributable to limited success of many development initiatives. FAO 2012 report also agrees that stakeholder's participation in M&E during project design is an enabler for the poor communities living in the rural areas to direct their energies towards achieving locally set objectives. However the findings of this report are based on reviews of documents prepared by the implementing agencies such as government ministries, and not on field-based investigations from primary beneficiaries such as farmers. Similarly, Oganda (2012) investigated the impact of household's participation in project decisions using a detailed semi-structured questionnaire. The selected projects were specifically Stakeholder forest associations (CFAs). Findings established a significant association between community participation and sustainability of projects using quantitatively approaches.

On the contrary, Cook and Kothari (2001) observe that stakeholder's participation in M&E during project design can be manipulative or even harmful to beneficiaries. The study argued that stake holder participation disrupts attention away through discursive practices and encourages the inherent potential for the application of the concept for an unjustified exercise of power by project participants. Further, unlike in the current study the sample of the study was arrived at through nonscientific methods with no authoritative formulae and from a known sample frame and sampling units.

4.7 Influence of Stakeholder Participation in M&E during Project Implementation and Performance of Fish Farming Projects

The second objective in this study was examine the relationship between stakeholder participation in M&E during project implementation and performance of fish farming projects. To achieve this, the study first established the level of stakeholder participation in M&E during project implementation, established its correlation with the performance of fish farming projects and then conducted a regression analysis.

4.7.1 Level of Stakeholder Participation in M&E during Project Implementation

This subsection investigates the level of stakeholder participation in M&E during project implementation and performance of fish farming projects by examining the questionnaire items

investigating the levels. The mean of the individual items examined the degree to which a proportion of respondents agreed with view expressed in the item. The mean of the aggregate scores revealed the extent to which the respondents agreed on the level participation in M&E during the implementation of the projects and is presented in Table 4.11

Table 4.11 Stakeholder Participation in M&E during Project Implementation

SN	ITEM	N	SD	D	N	A	SA	M	SD
1.	Stakeholders participation in data collection	226	24 (10.6%	47 (20.8%)	69 (30.5%)	45 (19.9%)	41 (18.1%)	3.14	1.24
2.	Stakeholders participation in data presentation	226	15 (6.6%)	37 (16.4%)	68 (30.1%)	68 (30.1%)	38 (16.8%)	3.34	1.13
3.	Stakeholders participation in data analysis	226	12 (5.3%)	40 (17.7%)	65 (28.8%)	56 (24.8%)	53 (23.5%)	3.43	1.18
	Means of Means							**3.30**	**1.39**

Table 4.11 shows that 48.3% of the respondents agreed that stakeholders participated in data analysis. The findings revealed a mean of 3.43 and the standard deviation was 1.18. The study further found that the respondents agreed that stakeholder's participation data collection influenced their participation M&E during project implementation. All the responses were recorded on a 5-point Likert scale. The results revealed that the level of stakeholder participation in M&E during project implementation was average with a composite mean of 3.30 and standard deviation 1.39.

Focus group discussions and interviews revealed that level of stakeholder participation in M&E during project implementation of fish farming projects boosted by stakeholder participation in data collection, their level of participation in data presentation and their participation in data analysis.

> *"Everyone collects and writes down records of the fish farming activities. I have a book where I record everything. I can even tell when things are getting better or worse. I know when to the officer for sampling or advice. When they we read the book together and agree what to change.***"** *SPMC member.*

> *"It requires that every participant should be there to implement M&E .We try as hard to bring them on board. Some but a few do not think it is important and are wishing to do it on their own" INTERVIEWEE.*

4.7.2 Relationship between Stakeholder Participation in M&E during Project Implementation and Performance of Fish Farming Projects

The second objective in this study was examine the relationship between stakeholder participation in M&E during project implementation and performance of fish farming projects. The study first conducted a correlation analysis between the two variables. To start with the three dimensions of stakeholder participation in M&E during project implementation were correlated with performance of fish farming projects. The correlation were deemed significant at a set value of 0.05 the results are presented in Table 4.12

Table 4.12: Correlation Analysis of Level of Stakeholder Participation in M&E during project Implementation and Performance of Fish Farming Projects

		Stakeholder participation in M&E during project implementation	Performance of fish farming projects
Stakeholder participation in M&E during project implementation	Pearson Correlation	1	.559**
	Sig. (2-tailed)		.000
	N	226	226
Performance of fish farming projects	Pearson Correlation	.559**	1
	Sig. (2-tailed)	.000	
	N	226	226

**. Correlation is significant at the 0.05 level (2-tailed).

The Pearson correlations between the variables are shown in Table 4.12 show that the study found that stakeholder participation in M&E during project implementation was moderate and positively correlated with performance of fish farming projects ($r = .559$, $p < .05$). This implies that as the level of stakeholder participation in M&E during project implementation increase, the performance of fish farming projects improves.

To achieve objective two, the study further tested the hypothesis that there is a significant relationship between the level of stakeholder participation in M&E during project implementation and performance of fish farming projects in Nyeri County. The null hypothesis was phrased as follows:

H_o2: There is no significant relationship between stakeholder participation in M&E during project implementation and performance of fish farming projects in Nyeri County

This was tested using the model

Model 2; $Y= 1.665 + .593X+ \varepsilon$

Where;

Y= performance of fish farming projects

X= Level of stakeholder participation in M&E during project implementation

β_0 = the intercept (constant term)

β_1 = Regression coefficients shows the change in the value of Y for a unit change in X

ε = random error

The model represented a value of R^2 which show the proportion of variation in dependent variable explained by the regression model. Table 4.13 show that the level of stakeholder participation in M&E during project had a coefficient adjusted R^2=.559 this indicates that 55.9 % of the variation in performance of fish farming projects can be accounted for by the level of stakeholder participation in M&E during project implementation.

Table 4.13: Stakeholder participation in M&E during project implementation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.559[a]	.312	.309	.593	.312	101.589	1	224	.000

a. Predictors: (Constant), Stakeholder participation in M&E during project implementation

b. Dependent Variable: Performance of fish farming projects

Table 4.14: Coefficients of stakeholder participation in M&E during project implementation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.665	.150		11.094	.000	1.369	1.960
	Stakeholder participation in M&E during project implementation	.426	.042	.559	10.079	.000	.342	.509

a. Dependent Variable: Performance of fish farming projects

This study found out that stakeholder participation in M&E during project implementation accounts for 30.9 % of performance of fish farming projects. The results also illustrates that a unit change in in stakeholder participation in M&E during project implementation is responsible for a change in project performance by 0.559. The relationship was found to be statistically significant with ($t=11.094$, $p<0.05$). Therefore rejecting the null hypothesis and accepting the alternative hypothesis that the level of Stakeholder participation in M&E during project implementation significantly influences the performance of fish farming projects.

> *''We are the ones who do the work of putting the project in place. You have to do it yourself, otherwise if you fully rely on the officer you will fail in production. There is no way out, you keep your own books. If you do it well you get good harvests' 'SPMC Member.*

> *"It's clear that that those who do the work well to the ground get better results. In my project, I associate what we get with our level of participation. We are not wrongly judged. If we complain we are complaining about ourselves and how much we put into the work of checking ourselves." INTERVIEWEE.*

This observation was in line with the findings of Sara and Katz (1997). Despite the fact that the only evaluated on aspect of performance namely; sustainability, the study revealed that community's participation in decision making and implementation was an effective means of improving sustainability of water projects. These findings is in line with those of a team of researchers Montpellier, France who studied participation of stakeholders outcomes identified as local priorities. The approach was in form of surveys and focus groups discussions on their participation at different phases of the initiatives whereby the perceptions of the stakeholders about their influence on fish farming were investigated. The study assessed the merits of using participatory approaches so as to illuminate on applicable social indicators for fish farming pond projects. This method warranted discussion, enabling the project stakeholders to prioritize efforts and consequent outcomes such as performance of the fish farming projects. (Mathé, 2012).

4.8 Stakeholder Participation in Utilization of M&E results and Performance of Fish Farming Projects

The study persued the third objective by examining the relationship between stakeholder participation in utilization of M&E results and performance of fish farming projects. To achieve this, the study first established the level of stakeholder participation in utilization of M&E results, established its correlation with the performance of fish farming projects and then conducted a regression analysis.

4.8. 1 Level of Stakeholder Participation in Utilization of M&E results

This subsection investigated the level of stakeholder participation in utilization of M&E results and performance of fish farming projects by examining the questionnaire items investigating their levels. It specifically evaluates the means of the individual items, the mean of means, the mean of composite scores and the respondents' and the level as expressed in focus group discussions. The mean of the individual items examined the degree to which a proportion of respondents agreed with view expressed in the item. The mean of means and the mean of the aggregate scores revealed the extent to which the respondents agreed on the level participation in utilization of M&E results and presented in Table 4.15

Table 4.15: Level of Stakeholder Participation in Utilization of M&E results

S.N	ITEM	N	SD	D	N	A	SA	M	SD
1.	Stakeholders participate in the documentation of M&E results	226	30 (13.3%)	49 (21.7%)	72 (31.9%)	52 (23.0%)	23 (10.2%)	2.95	1.17
2.	Stakeholders participate in the sharing of M&E results	226	15 (6.6%)	27 (11.9%)	67 (29.6%)	79 (35.0%)	38 (16.8%)	3.43	1.10
	Mean of means							**3.19**	**1.14**

Table 4.15 shows that 51.8 % of the respondents agreed that stakeholders participated in sharing of M&E results. The findings revealed a mean of 3.43 and the standard deviation was 1.10. The study further found that the respondents agreed that stakeholder's participation documentation influenced their participation in sharing M&E results. All the responses were recorded on a 5-point Likert scale. The results revealed that the level of stakeholder

participation in M&E during project implementation was average with a composite mean of 3.19 and standard deviation 1.14.

Focus group discussions and interviews revealed that level of participation during utilization of M&E results was average and was by enhanced stakeholders' participation in documentation of M&E results and participation in information sharing of M&E results. The participants felt that they were involved in the use of inspection reports of fish farming project and that the reports are used by stakeholders to improve the fish farming projects.

> *"I keep my books well because finally am the one to use them. I know how to do it. It's not a must for the inspector to come. I will use it when it is the right time. If my records say that am not doing fine I know what to do." SPMC MEMBER.*

> *"Those who use the records for the projects do better. There are those who record only for the official purposes. The results in performance are opposite. In totality, my members now appreciate why they should use their records for the purposes of M&E." INTREVIEWEE.*

4.8.2 Relationship between the level Stakeholder Participation in Utilization of M&E results and Performance of Fish Farming

The third objective was to investigate of the relationship between stakeholder participation in utilization of M&E results and performance of fish farming projects. The study first conducted a correlation analysis between the two variables. To start with the dimensions of stakeholder participation in utilization of M&E results were correlated with performance of fish farming projects. All the correlation were deemed significant at a set value of 0.05 the results are presented in Table 4.16

Table 4.16: Correlation Analysis of Level of stakeholder participation in utilization of M&E results and performance of fish farming projects

		Stakeholder participation in utilization of M&E results	Performance of fish farming projects
Stakeholder participation in utilization of M&E results	Pearson Correlation	1	.789**
	Sig. (2-tailed)		.000
	N	226	226
Performance of fish farming projects	Pearson Correlation	.789**	1
	Sig. (2-tailed)	.000	
	N	226	226

**. Correlation is significant at the 0.05 level (2-tailed).

The Pearson correlations between the variables are shown in Table 4.16 show that the study found that stakeholder participation in in utilization of M&E results was high and positively correlated with performance of fish farming projects ($r = .789$, $p < .05$). This implies that an increase the level of stakeholder participation in M&E during project design, lead to an increase in the performance of fish farming projects.

The study further tested the hypothesis that there is no significant relationship between the level of stakeholder participation in utilization of M&E results and performance of fish farming projects in Nyeri County. The null hypothesis was phrased as follows:

H_{O3}: There is no significant relationship between stakeholder participation in utilization of M&E results and performance of fish farming projects in Nyeri County.

The model represented a value of R^2 which show the proportion of variation in dependent variable explained by the regression model. Table 4.15 show that the level of stakeholder participation in M&E during in utilization of results had a coefficient adjusted R^2=0.236 this indicates that 23.6 % of the variation in performance of fish farming projects can be accounted for by the level of stakeholder participation in utilization of M&E results. The findings are as presented in Table 4.17.

Table 4.17: Level of Stakeholder Participation in Utilization of M&E results and Performance of Fish Farming Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.789[a]	.239	.236	.624	.239	70.360	1	224	.000

a. Predictors: (Constant), Stakeholder participation in utilization of M&E results

b. Dependent Variable: Performance of fish farming projects

Table 4.18: Coefficients of Stakeholder Participation in Utilization of M&E results and Performance of Fish Farming Projects

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.997	.141		14.204	.000	1.720	2.274
	Stakeholder participation in utilization of M&E results	.345	.041	.789	8.388	.000	.264	.426

a. Dependent Variable: Performance of fish farming projects

To achieve objective three, the study further tested the hypothesis that there is a significant relationship between the level of stakeholder participation in M&E during project implementation and performance of fish farming projects in Nyeri County. The null hypothesis was phrased as follows:

$H_{O2:}$ There is no significant relationship between stakeholder participation in M&E during project implementation and performance of fish farming projects in Nyeri County

This was tested using the model

Model 3; $Y= 1.997 + 0.789X+ \varepsilon$

Where;

Y= performance of fish farming projects

X= Level of stakeholder participation in utilization of M&E results

β_0 = the intercept (constant term)

β_1 = Regression coefficients shows the change in the value of Y for a unit change in X

ε = random error

This study found out that a unit change in stakeholder participation in utilization of M&E results leads to 0.789 change in performance of fish farming projects. The relationship was found to be statistically significant with ($t=8.288$, $p<0.05$). Therefore rejecting the null hypothesis and accepting the alternative hypothesis that the level of Stakeholder participation in utilization of M&E results significantly influences the performance of fish farming projects. This observation was in line with the findings of Wanda (2013) that used secondary observation to compute the magnitude of the association between the utilization of M&E results and sustainability fish farming projects in Kiambu County. The study also further analysed to find out whether project location and intervening variables were of significant influence to sustainability of projects. Results showed that participation through accessible record keeping significant influences to the economic sustainability of the projects. M&E reports should be prepared primarily in local languages and expressions, but finally transformed into ordinary forms.

However the aforementioned studies only investigated one aspect of project performance namely, sustainability. The current study further investigated other aspects such as completion time, quality of project outputs, creation of jobs and amount of output.

4.9 Combined PM&E and Performance of Fish Farming Projects

The fourth objective in this study was examine the relationship between stakeholder participation PM&E and performance of fish farming projects. To achieve this, the study first established the level of PM&E, the study established its correlation with the performance of fish farming projects and then conducted a regression analysis.

4.9.1 Level of Combined Participatory Monitoring and Evaluation

This subsection investigated the level of combined influence of PM&E in fish farming projects. The questionnaire items investigated these levels. It specifically evaluated the means of the

individual items, the mean of means, the mean of composite scores of the respondents' and the levels as expressed in focus group discussions. The mean of the individual items examined the degree to which a proportion of respondents agreed with view expressed in the item. The means revealed the extent to which the respondents agreed on the level of PM&E and the results are presented in Table 4.19

Table 4.19: Mean Analysis of Combined Influence of PM&E

PM&E Dimensions	Mean	Standards Deviation
1.Stakeholder participation in M&E during project Design	3.38	1.19
2. Stakeholder participation in M&E during project Implementation	3.45	1.15
3. Stakeholder participation in utilization of M&E results	3.34	1.15
Mean of Means	**3.39**	**1.16**

Table 4.19 shows that the respondents agreed that stakeholder's participation in utilization of M&E results influenced their level of PM&E. All the responses were recorded on a 5-point Likert scale. The results revealed that the mean of means of the combined PM&E was 3.39 while the mean standard deviation was 1.16.

4.9.2 Relationship between Combined PM&E and Performance of Fish Farming Projects

The study went further to investigate of the relationship between stakeholder participation in Combined Influence of PM&E and performance of fish farming projects. The study first conducted a correlation analysis between the two variables. The correlation was deemed significant at a set value of 0.05 the results are presented in Table 4.20

Table 4.20: Correlation Analysis of combined PM&E and performance of fish farming projects

		combined PM&E	Performance of fish farming projects
Level of combined PM&E	Pearson Correlation	1	.588**
	Sig. (2-tailed)		.000
	N	226	226
Performance of fish farming projects	Pearson Correlation	.588**	1
	Sig. (2-tailed)	.000	
	N	226	226

**. Correlation is significant at the 0.05 level (2-tailed).

The study went further to test the hypothesis that there no significant relationship between the level of combined PM&E and performance of fish farming projects in Nyeri County. The null hypothesis was phrased as follows:

Ho_4: There is no significant relationship between the level of combined PM&E and performance of fish farming projects in Nyeri County. Table 4.18 show that the level of PM&E during had a coefficient adjusted R^2=0.343 this indicates that 34.3% of the variation in performance of fish farming projects can be accounted for by the level of combined PM&E. The findings are as presented in Table 4.21

Table 4.21: Relationship between Combined Influence of PM&E and Performance of Fish Farming Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.588[a]	.346	.343	.578	.346	118.419	1	224	.000

a. Predictors: (Constant), Combined Influence of PM&E

b. Dependent Variable: Performance of fish farming projects

Table 4.22: Coefficients of Combined PM&E and Performance of Fish Farming Projects

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.668	.139		11.986	.000	1.394	1.943
Combined Influence of PM&E	.442	.041	.588	10.882	.000	.362	.522

a. Dependent Variable: Performance of fish farming projects

To achieve the objective, the study further tested the hypothesis that there is a significant relationship between the level of PM&E and performance of fish farming projects in Nyeri County. The null hypothesis was phrased as follows:

$H_{O2:}$ There is no significant relationship between PM&E and performance of fish farming projects in Nyeri County

This was tested using the model

Model 4; $Y= 1.668 +.588X+ \varepsilon$

Where;

Y= performance of fish farming projects

X= Level of PM&E

β_0 = the intercept (constant term)

β_1 = Regression coefficients shows the change in the value of Y for a unit change in X

ε = random error

The study found out that PM&E accounts for 34.3% change in performance of fish farming projects. The results illustrated that a unit change in PM&E changes project performance by 0.588 The relationship was found to be statistically significant with ($t=10.88$, $p<0.05$). Therefore rejecting the null hypothesis and accepting the alternative hypothesis that the level of PM&E results significantly influences the performance of fish farming projects.

This observation was supported by focus group discussion and interviews findings that rated the combined PM&E and performance of fish farming projects in Nyeri County. The discussions revealed that stakeholders' participation M&E during project design, project

implementation and utilization of M&E results as the key aspects of increased project performance probabilities.

> *"In this kind of work, you have to be your own inspector. The better you inspect yourself, the better your work becomes. Participating means being there throughout the process. Those who wait for the officers to come end up with nothing to show during harvest time" SPMC Member.*

> *"We only get good results from those who are active throughout the process of inspecting the project. You need to be an inspector from when the project is being planned, started and when the outcomes are being reported.'' SPMC Member.*

> *"The purpose of having them participate is to have learn. In essence they appreciate their own problems in terms of what they can't do at that moment. We appreciate that moment they agree why not solve it ourselves. The greatest result is when they say, we have done it and it's no longer a problem." INTREVIEWEE.*

These findings are in agreement with the findings of (Codd, 2011), Hilhost and Guijt (2006) who found that PM&E allows key stakeholders to design their own projects, decide on their own and participate in M&E effectively.

Similarly,(Ajieh, 2004) in a conducted to assess the influence of capacity building on fish farming in Ekiti State, Nigeria, used Gross Margin analysis was used to determine the viability of fish farming as a result of PM&E. the study recommended intensifying PM&E would increase farmers' profitability. In Bangladesh, (Saker, Chowdry and Itohara, 2006) carried out in-depth surveys out in farms using a common close ended questionnaire. They concluded that farmers' competencies in fish farming can be enhanced through PM&E and could and bring about more effective performance in the production of food in fish industry.

This finding was consistent with the findings of Okwu and Ejembi (2005) in an investigation in the Songhai-Delta which reported that capacity building of fish farmers helps them understand and practice the skills required in the adoption of technology and fills the deficit situation in the knowledge and consequently makes the farmers better practitioners.

These findings were supported by Focus group discussions as asserted by SPMC members.

4.10 Mediating influence of Capacity Building on the Relationship between PM&E and Performance of Fish Farming Projects

This subsection investigated the mediating influence of capacity building on the relationship between PM&E and performance of fish farming projects. The study first sought to determine the level of capacity building among the participants of the projects. The study went further and used an approach comprising of four steps whereby regression models were analysed to investigate the mediating influence of capacity building on the relationship between PM&E and performance of fish farming projects.

4.10.1 Level of Capacity Building among the Project Participants

The study examined the questionnaire items investigating the levels of capacity building. It specifically examined the means of the individual items, the mean of means as expressed by the respondents. Table 4.23.

Table 4.23: Mean Analysis of Capacity Building

S.N	ITEM	N	SD	D	N	A	SA	M	SD
1.	Newly acquired skills	226	4 (1.8%)	36 (15.9%)	42 (18.6%)	63 (27.9%)	80 (35.4%)	3.80	.533
2.	Strength of local networks	226	10 (4.4%)	41 (18.1%)	47 (20.8%)	74 (32.7%)	54 (23.9%)	3.54	.400
3.	Ability to solve problems	226	16 (7.1%)	32 (14.2%)	47 (20.8%)	76 (33.6%)	55 (24.3%)	3.54	.534
4.	Pond management skills	226	9 (4.0%)	40 (17.7%)	49 (21.7%)	75 (33.2%)	53 (23.5%)	3.54	.395
5.	Technical skills in development of new skills	226	18 (8.0%)	29 (12.8%)	52 (23.0%)	59 (26.1%)	68 (30.1%)	3.58	.514
	Composite Mean							**3.60**	**0.47**

Table 4.23 shows that 63.3 % of the respondents agreed that stakeholders had their capacity increased after acquisition of new skills. . The findings revealed a mean of 3.80 and the standard deviation was .533. The study further found that the respondents agreed that stakeholder's ability to solve problems influenced their capacity in fish farming. All the responses were recorded on a 5-point Likert scale. The results revealed that the level of

stakeholder participation in M&E during project implementation was average with a composite mean of 3.60 and standard deviation 0.47.

Focus group discussions also confirmed that level of capacity building was as a result of newly acquired skills, the strength of local networks, the ability of the project participants to solve their problems in pond management skills and development of technical skills in producing new products.

4.10.2 Relationship between PM&E, Capacity Building and Performance of Fish Farming Projects

This subsection presents analysis of the mediating influence of capacity building on the relationship between PM&E results and performance of fish farming projects. To achieve objective five, the study used a four step approach in which regression analyses were conducted and significance of the coefficients examined at each step. The four steps tested the null hypothesis was phrased as follows:

Ho $_5$: There is no mediating influence of capacity building on the relationship between the level of combined PM&E and performance of fish farming projects in Nyeri County.

In step one, a test was conducted to examine if a significant relationship existed between the independent variables and the dependent variable. (Model 3.1). The findings are as shown in Table 4.24

Table 4.24: Regression analysis for Combined Influence of PM&E and Performance of Fish Farming Projects

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.668	.139		11.986	.000	1.394	1.943
	Combined Influence of PM&E	.442	.041	.588	10.882	.000	.362	.522

a. Dependent Variable: Performance of fish farming projects

The relationship was found to be statistically significant with ($t=10.88$, $p<0.05$).

In the second step, a regression analysis to assess the relationship between PM&E and capacity building was persued. In this step, PM&E were treated as the predictor variable and capacity building as the dependent variable. The results are as shown in Table 4.25

Table 4.25: Regression analysis on the Relationship of PM&E and Capacity Building

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.613	.181		8.918	.000	1.257	1.969
	Capacity Building	.473	.049	.545	9.736	.000	.377	.569

a. Dependent Variable: Combined Influence of PM&E

The results in Table 4.23 confirmed that PM&E had a significant relationship with capacity building (t=9.73, p<0.05)

In step three; a regression analysis to determine the relationship between capacity building and performance of fish farming projects was evaluated. In this step, a regression analysis was run to test whether capacity building significantly influenced performance of fish farming projects. The results are shown in Table 4.26.

Table 4.26: Regression Analysis on the relationship between Capacity Building and Performance of Fish Farming Projects

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.985	.141		14.065	.000	1.707	2.263
	Capacity Building	.320	.038	.491	8.447	.000	.246	.395

a. Dependent Variable: Performance of fish farming projects

The results in Table 4.24 confirmed that capacity building had a significant relationship with Performance of fish farming projects (t=8,447, p<0.05)

Steps 1-3 established that zero-order relationships among the variables existed. This lead to the conclusion that some form of mediation existed (either partial or full mediation). To substantiate this, the study proceeded to Step 4.

Step 4 conducted regression models, where PM& E and capacity building were treated as predictor variables as summarized in Table 4.27

Table 4.27: Coefficients of Influence capacity building on the relationship between PM& E and Performance of fish farming projects

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.433	.148		9.685	.000	1.141	1.724
	Combined Influence of PM&E	.342	.047	.456	7.285	.000	.250	.435
2	Capacity Building	.158	.041	.243	3.888	.000	.078	.239

a. Dependent Variable: Performance of fish farming projects

The results in Table 4.27 shows that both PM&E ($t=7.285$, $p<0.05$) and capacity building ($t=3.88$, $p<0.05$) significantly influence performance of fish farming projects. According to Baron and Kenny (1986), the models fulfils the requisites of a partial mediation which was the decision-making criterion based on Table 3.2 in Chapter Three. Therefore, the null hypothesis which stated that there is no mediating influence of capacity building on the relationship between PM&E and performance of fish farming projects was rejected. This shows that capacity building has a partial mediating influence on the relationship between PM&E and performance of fish farming projects. The findings were also supported by FGDs and interviews as respondents retorted;

> *"In this work, you learn on the job of supervising yourself and others. The more you are involved in all the supervisory work, the better is your project performance, those who keep off from inspection have very poor projects and nothing to show." SPMC MEMBER.*

> *"There is evidence that those who actively participate in PM&E have traits we could attribute to the level of capacity that has been built. We don't wish them to get involved just for the sake.*

Those who come with the right spirit, the results are superb."
INTERVIWEE.

These findings are in agreement with Fraser *et al*. (2006), who observed that local engagements such as PM&E builds stakeholder capacity to address their problems, learn to work together and consequently perform better in community interventions. However this study could not further compare the findings with previous ones since no study scientifically investigated the mediation role of capacity building.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMEDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusion, contributions of the study to the body of knowledge and recommendations. The summary of findings section presents summary of main findings for each study objective. On the basis of these findings, the study conclusions are made and presented under each study objective. The presented the study contribution to the body of knowledge. The chapter finally presents recommendations derived from findings, emerging policy issues and identified gaps in knowledge that are recommended for further research.

5.2 Summary of Findings

The study was designed to respond to five research objectives that were consequently formulated into hypotheses and finally tested into various test statistics. Data was analyzed both quantitatively and qualitatively. The major findings are summarized as follows.

5.2.1 Stakeholder participation in M&E during project design on performance of fish farming projects.

The first research objective of this study was to establish the influence of stakeholder participation in M&E during project design on performance of fish farming projects in Nyeri County. The study noted that the level of stakeholder participation in M&E during project design was moderate producing a mean of means of 3.38 and the standard deviation was 1.19. The research found out that there was a moderate positive linear relationship between stakeholder participation in M&E during project design and performance of fish farming projects ($r=0.556$). The influence of level of stakeholder participation in M&E during project design on performance of fish farming projects was statistically significant ($t=14.07$, $p<0.05$). It accounted for 30.6% of project performance (Adjusted $R^2 =0.306$).

5.2.2 Stakeholder participation in M&E during project implementation on performance of fish farming projects.

The second research objective of this study was to establish the influence of stakeholder participation in M&E during project implementation on performance of fish farming projects in Nyeri County. The study noted that the level of stakeholder participation in M&E during project design was moderate producing a mean of means of 3.45 and the standard deviation was 1.15. The research found out that there was a moderate positive linear relationship between stakeholder participation in M&E during project implementation and performance of fish farming projects (r=0.559). The influence of level of stakeholder participation in M&E during project design on performance of fish farming projects was statistically significant (t=11.09), p<0.05).It accounted for 30.9 % of performance of fish farming projects (Adjusted R^2 =0.309)
.

5.2.3 Stakeholder participation in utilization of M&E results on performance of fish farming projects in Nyeri County

The third research objective of this study was to establish the influence of stakeholder participation in utilization of M&E results on performance of fish farming projects in Nyeri County. The study noted that the level of stakeholder participation in M&E during project design was moderate producing a mean of means of 3.34 and the standard deviation was 1.14. The research found out that there was a strong positive linear relationship between stakeholder participation in utilization of M&E results and performance of fish farming projects (r=0.789). The influence of level of stakeholder participation in M&E during project design on performance of fish farming projects was statistically significant recording (t=14.20), p<0.05).

5.2.4 Combined PM&E and performance of fish farming projects in Nyeri County

The fourth research objective of this study was to establish the influence of combined PM&E on performance of fish farming projects in Nyeri County. The study noted that the level of combined PM&E was moderate producing a mean of means of 3.39 and the standard deviation was 1.16. The research found out that there was a moderate positive linear relationship between combined PM&E and performance of fish farming projects (r=0.588). The influence of level of combined PM&E on performance of fish farming projects was statistically significant (t=11.98), p<0.05). It accounted for 34.3 % of performance of fish farming projects (Adjusted R^2 =0.343).

5.2.5 Capacity building, PM&E and performance of fish farming projects in Nyeri County

The fifth research objective of this study was to establish the mediating influence of capacity building on the relationship between PM&E results and performance of fish farming projects. The study findings revealed that the level of capacity building was moderate producing a mean of means of 3.54 and the standard deviation was 0.199. The study used a four step approach in which regression analyses were conducted and significance of the coefficients examined at each step.

In step one, a test was conducted to examine if a significant relationship existed between the independent variables and the dependent variable. The relationship was found to be statistically significant with ($t=11.98$, $p<0.05$).

In the second step, a regression analysis to assess the relationship between PM&E and capacity building was conducted. The results in Table 4.24 confirmed that PM&E had a significant relationship with capacity building ($t=8.91$, $p<0.05$). In step three; a regression analysis to assess the relationship between capacity building and performance of fish farming projects was evaluated. The results confirmed that capacity building had a significant relationship with Performance of fish farming projects ($t=14.06$, $p<0.05$)

Step 4 conducted regression models, where PM& E and capacity building were treated as predictor variables. The results revealed that both PM&E ($t=7.28$, $p<0.05$) and capacity building ($t=3.88$, $p<0.05$) significantly influence performance of fish farming projects. This shows that capacity building has a partial mediating influence on the relationship between PM&E and performance of fish farming projects.

5.3 Conclusions of the Study

The study investigated the influence of capacity building on the relationship between PM&E and performance of fish farming projects. This was done by specifically examining the influence of stakeholder participation in M&E during the design of the project, the influence of stakeholder participation in M&E during implementation of the project and the influence of stakeholder participation in utilization of M&E results on performance of fish farming projects. It also analysed the mediating influence of capacity building on the relationship between

PM&E and performance of fish farming projects. Based on its findings, this study makes the following conclusions;

1. On the first objective the study that the level of stakeholder participation in M&E during project design was moderate. It had a moderate positive linear relationship with project performance. It accounted for 30.6% of the projects performance. The study also found that it had a significant relationship with performance of fish farming projects. The study finally concluded that stakeholder participation in M&E during project design is a significant predictor of performance of fish farming projects.
2. On the second objective the study that the level of stakeholder participation in M&E during project implementation was moderate. It had a moderate positive linear relationship with project performance. It accounted for 30.9% of the projects performance. The study also found that it had a significant relationship with performance of fish farming projects. The study finally concluded that stakeholder participation in M&E during project implementation is a significant predictor of performance of fish farming projects.
3. On the third objective the study that the level of stakeholder participation in utilization of M&E results was moderate. It had a strong positive linear relationship with project performance. It accounted for 78.9% of the projects performance. The study also found that it had a significant relationship with performance of fish farming projects. The study finally concluded that stakeholder participation in M&E during project implementation is a significant predictor of performance of fish farming projects.
4. On the fourth objective the study that the level of combined PM&E was moderate. It had a strong positive linear relationship with project performance. It accounted for 58.8 % of the projects performance. The study also found that it had a significant relationship with performance of fish farming projects. The study finally concluded that combined PM&E is a significant predictor of performance of fish farming projects.
5. On the fifth objective the study found that PM&E leads to capacity building and consequently project performance. This meant that there was some form of mediating influence. The study finally concluded that combined PM&E is a partial mediator of performance of fish farming projects. The implication is capacity building does not fully account for all the relationship between PM&E and project performance that is, some of the influence of PM&E is direct and not mediated by capacity building.

5.4 Recommendations of the Study

Based on its findings, this study makes the following recommendations.

1. The study found out that stakeholder participation in M&E during project design is a significant predictor of performance of fish farming projects. The implementing agencies such as SPMCs, should endeavour to strengthen the level stakeholder participation in M&E during project design by involving in setting M&E objectives, development of M&E tools and designing an M&E framework for the project. This can be done demystifying the M&E planning process, the tools, the need and the frame work. Consequently this would make the stakeholders participate with a purpose and not for the sake of it.
2. Projects implementers should ensure that the stakeholder are facilitated to participate in the M&E of projects during the implementation phase. In essence, they should be trained in keeping records of their project activities by collecting data, participating in data presentation and analysis. This could be achieved by allowing user friendly methods of data collection so as allow all stakeholders to participate.
3. Project stakeholders should be fully involved in the utilization of M&E results so that they own them and use them to improve performance of the projects. This recommendation is based on the finding that participation in utilization of M&E results had the strongest relationship with project performance. The finding of just an average level of utilization shows that M&E reports more likely remained as just documents with little or no chances of being utilized by the project stakeholders and consequently leading to lack of a sense of ownership. If the stakeholders own the M&E results they are more likely to learn (build capacity) improve project performance.
4. The findings that the level of combined PM&E had a positive relationship with performance of fish farming projects in Nyeri County warrants this study recommend that project implementers should endeavour to increase all the aspects of PM&E.
5. Capacity building of the project stakeholders partially mediates PM&E and performance of projects. These findings first mean that PM&E influences capacity building that, in turn, influences performance. Therefore this study recommends that PM&E should in such a way that yields capacity of project participants (in acquisition of new skills, problem solving abilities and networking) for better performance.

Secondly, since capacity building does not fully account for the relationship between PM&E and project performance that is, some of the influence of PM&E is direct and not mediated by capacity building, project designers and implementers should focus on aspects capacities that actually mediate for performance as they attempt to build capacity of the project participants.

5.5 Recommendations for Future Research

1. The study found that fish farming projects now falls in a devolved function of the County Government that is , agriculture in the dispensation of Constitution of Kenya 2010. This is a departure from the previous scenario in which the National Government was responsible for all agricultural related functions. Notably the County Governments are intervening in sustainability efforts of such projects. This study therefore recommends that future studies should examine how PM&E as crafted by County Governments associates with performance of fish farming projects.
2. There has been concerns about the commitment to the spirit and letter of participatory practice by the County governments. This study therefore recommends empirical studies into the Participatory practices such as PM&E in County government initiated projects.
3. The acquisition of new technologies in fish farming such the use of green houses, pond construction by use of earthen water proof material in place of plastic liners, value addition such as production fish sausages as a result of capacity building are areas worth investigating on the association with project performance.
4. This study also recommends that empirical studies be conducted to substantiate the direct and indirect mediating influences of capacity building between PM&E and project performance.

5.6 Contribution to body of Knowledge

This study examined the extent to which PM&E in terms of stakeholder participation in M&E during project design, stakeholder participation in M&E during project implementation and stakeholder participation in utilization of M&E results. Independently and simultaneously influence performance of fish farming projects in Nyeri County. The literature reviewed revealed very little of the individual and combined associations and their consequent

comparisons. The findings of this study especially in the comparisons will contribute significantly to the body of knowledge.

This study also assessed the mediating effect of capacity building on this relationship. Scanty findings exist beyond establishing a significant influence individual predictor variables and project performance of projects from past studies. Neither has the mediating influence of capacity building on the relationship between the PM&E and performance of fish farming projects in Nyeri County been investigated. The findings of this study thus provide significant contributions to the body of knowledge.

The findings of this study have validated the theories on which the study was underpinned. The study has proved that participation is more important when the capacity of the project participants is harnessed in the process. Specifically, the study used combination of learning theories and knowledge utilization theories to investigate the outcomes of PM&E (Raby & Viola, 2007) and (Lemieux-Charles & Champagne, 2004).Theories hold that stakeholders believe learning is a part of PME (Bowen & Martens, 2006; Forss *et al*., 2002; Rebien, 2011; Taut, 2007). Researchers identify the learning processes as the intermediate result of PM&E (Preskill *et al*., 2003), others refers to this result as capacity building (Taut & Brauns, 2003), (Preskill & Torres, 2000), and (King, 2007). This study, therefore has proved that capacity building is an intermediate of PM&E and therefore crucial for consequent performance.

The findings of this study that the level of combined PM&E is higher than the individual associations of PM&E aspects with project performance is a major contribution to the body of knowledge. Project implementers will find more beneficial to increase stakeholder participation in M&E at stages of the project life cycle for the purposes of better performance. They should indeed interrogate the areas and stages they may have previously ignored or neglected primary stakeholders such as during the design phase. Since the findings of this study is that combined PM&E is a partial mediator of performance of fish farming projects. The implication is that capacity building does not fully account for all the relationship between PM&E and project performance that is, some of the influence of PM&E is direct and not mediated by capacity building. The study provides a capacity building model for strengthening the relationship between PM&E and performance of fish farming projects.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Dear Participant,

My name is Paul Kiumbe Mburu, a student at the University of Nairobi pursuing a PhD in Project Planning and Management. I am conducting a study on the approach of participatory monitoring and evaluation and its influence on the performance of fish farming projects implemented under the Economic stimulus programme. The findings of this research will contribute to new knowledge and new research-based evidence that will inform development agencies on the participation of primary beneficiaries in M&E.

The attached questionnaire contains questions related to PM&E, capacity building and its influence on performance of fish farming projects. The information you provide will help in establishing the influence of PM&E on capacity building and consequently performance. The study will also assess the mediating influence of the demographic characteristics of project participants on the relationship between PM&E and performance of fish farming projects. .

You have the freedom to choose whether to take part in this study or not. If you choose to take part, all the information you give will be confidential and will only be used to prepare study report. The report will not disclose any names of the participants.

You have the freedom to ask any questions about the research, either to me or my research assistants. Kindly complete the questionnaire as honestly as possible.

Yours Sincerely,

Paul K. Mburu.

RESEARCHER

APPENDIX II: QUESTIONNAIRE FOR FISH FARMERS

This is a research for academic purposes. I kindly request you to take some of your time to fill the questionnaire as honestly and objectively as possible by ticking the appropriate boxes except where otherwise indicated. All information including your identity will be treated with strict confidentiality.

Date……. Name of Project /sub County……

SECTION: A : Demographic characteristics of project participants

a) Please indicate the number of farmers that fall in the following your age brackets

1=18-23 years ……

2=24-29 years ……

3=30-35 years ……

4=36- 40 years……

5=More than 40 years ……..

b) Please indicate your gender

1. Female …….
2. Male ……..

c) Indicate your highest levels of education.

1= primary education ……..

2=secondary education……

3=diploma ……

4= Degrees ……

5 =post graduate ……..

d) Indicate occupation category in terms of the following

1 = Farmer with full time employment in the formal sector
……..

2= Farmer with other non-agricultural engagements in the informal sector
.....

3= Farmer with other agricultural engagements in the formal sector ……

4= Fish farmer with other farming activities in the agricultural sector……..

5= Full time fish farmer with no other engagements…….

SECTION B: Stakeholder participation in M&E during project design

Please indicate the level to which you agree or disagree with the following statements about stakeholder's participation in M&E during project design.

Using a scale of;1= **strongly disagree,2= disagree, 3=neutral, 4=agree 5=strongly agree**	**1**	**2**	**3**	**4**	**5**
a) I was invited for meetings to plan the inspection of the fish farming projects					
b) I attended meetings to plan inspection of the fish farming project					
c) I contributed ideas during the inspection planning meetings					
d) The programme for inspecting the projects is in line with our ideas					
e) I participated in setting a time table for inspecting project activities					
f) The decisions made for the inspections were based on the stakeholders' discussions during the planning meetings					
g) The attendance in the inspection planning meetings was good					
h) The timings for the meetings to plan inspections was favorable to me					
i) We were well represented during the planning meetings					
j) I took part in development of inspection documents					
k) The documents used to inspect the project contain my input					

SECTION C: Stakeholder participation in M&E during project implementation

Please indicate the extent to which you agree on the level of stakeholder participation in the following areas.

Using a scale of;1= **strongly disagree,2= disagree, 3=neutral, 4=agree 5=strongly agree**	**1**	**2**	**3**	**4**	**5**
a) I participate in collection of information from the fish farming project					
b) I keep records of information from the fish farming project					
c) I am always consulted on the information to track the progress of the projects					
d) I observe the progress of the fish farming project					
e) I keep records on the progress of the fish farming project					
f) I participate in interpretation of information collected on fish farming activities					
g) The meaning of the information collected from the fish farms are in line with my interpretations					
h) I agree with the interpretation of the information collected from the fish farm					
i) Analysis of the data collected during inspections is done by all of us					
j) I am involved in giving the meaning of information collected from the projects					
k) I agree with the meaning of the information collected from projects					

SECTION D: Stakeholder participation in utilization of M&E results

Please indicate the level to which you agree or disagree with the following statements.

Using a scale of;1= **strongly disagree,2= disagree, 3=neutral, 4=agree 5=strongly agree**	**1**	**2**	**3**	**4**	**5**
a) I participate in preparing inspection reports of the fish farming project					
b) The project inspection reports are in line with the information we collect					
c) I am involved in the presentation of the reports on the fish farming project					
d) The inspection report makes meaning to all project participants					
e) The inspection reports are released in time					
f) I use the inspection reports in the improvement of the fish farming project					
g) I play an important role in the use of inspection reports of fish farming project					
h) We all use the inspection reports of fish farming projects					
i) The inspection reports are owned by all the stakeholders of the project					
j) I find the inspection reports useful					
k) I am always willing to share project inspection reports					

SECTION E: Capacity Building

This section will ask questions on your level of acquired skills, strength of local networks, and ability to solve your problems as a result of participating in M&E of the fish farming projects

1. To what extent do you agree with the following using the given rating scale?

Strongly agree	[5]	Agree	[4]
Not sure	[3]	Disagree	[2]
Strongly disagree	[1]		

Statement	**5**	**4**	**3**	**2**	**1**
a) My participation led to acquisition of new skills in fish farming					
b) I have ability to solve my own problems in the fish farming project					
c) I have made connections/ interactions and relationships with others in the fish industry					
d) I have the ability of training other people in fish farming skills					
e) I can make decisions related to pond management					
f) I have acquired new fish farming technologies					
g) I have capacity to use acquired knowledge so as to improve fish farming					
h) I feel equipped in fish project management skills					
i) I can make new ponds using new technology					
j) I am able to fertilize the pond using locally available materials					
k) I can use local materials to rehabilitate the project					

SECTION F: Performance of fish farming projects

This section seeks to investigate the performance of the project in terms of employment created by the fish farming project, food security (fish produced in kilograms) and income derived from fish farming, quality of output and sustainability of the project.

STATEMENT	1	2	3	4	5
a) The fish farming project has increased the number of people employed in my fish farming activities					
b) The fish project has to contributed in the production of food					
c) The project has improved the income of the people engaged in fish farming activities					
d) The project produces plate size fish (300 grammes) within the expected time (3 months)					
e) Consumers are satisfied by the quality of fish produced in the project					
f) I am able to esablish extra ponds out of my own initiatives					
g) I am a members of the Nyeri County Fish farmers cooperative Society					
h) The fish farming project has increased the number of project participants					
i) I have not abandoned any fish pond since the project began					
j) The project has increased the number of fish ponds abandoned by fish farmers					
k) I have bought shares in the Nyeri County Fish farmers cooperative Society					

APPENDIX III**: FOCUS GROUP DISCUSSION GUIDE FOR STIMULUS PROJECT MANAGEMENT COMMITTEE (SPMC) MEMBERS**

Introduction

- Give a brief description of yourself
- Introduce the study
- Ask the **SPMC** Members to introduce themselves
- Set the rules for the discussion

Discussion variable	Information to be sought	Guide Questions
Participation M&E during the design of the project	• Level of participation in setting M&E objectives • Level of participation in development of M&E tools • Level of participation in designing M&E framework	How is the M&E for the project designed? What processes are used to design the M&E framework? Who is involved in this planning? What role do the stakeholders play?
Participation M&E during the implementation of project activities	• Level of participation in data collection • Level of participation in data presentation • Level of participation in Data analysis	Who collects data on the activities in your project? Who supervises the project activities? Are Stakeholder member's parts of this? What role do stakeholders play in the data analysis process?
Participation in utilization of M&E results	• Level of participation in documentation of M&E results • Level of participation in information sharing	How is documentation of the progress activities undertaken? Who is involved in documenting the monitoring and evaluation of programme activities in your village/Stakeholder? Who distributes this?

		How do stakeholders use M&E results of the programme
Capacity building	• Level of acquired skills • Strength of local networks • Ability to solve problems	How do you rate the participating farmers' capacity to make decisions? Are the farmers able to create networks? Has the programme equipped the farmers with fish farming technologies adequately? What skills do you impart into farmers during PM&E? Is the participating farmer capable of training others in fish farming technologies? Has the programme equipped farmers with the ability to start projects of their own? Can the farmers track the performance of their ponds on their own?

		What new forms of networks have the project participant's established?
Demographic Characteristics of project owners	Gender Occupation Age Level of education	Describe the Demographic Characteristics of the project participants
Performance of the fish farming projects	No of people engaged in fish farming as a job Food is produced by the fish project income produced by fish farming Quality of fish produced Sustainability of the fish projects	How many people are engaged in fish farming projects as a way gainful employment? How much food is produced by the fish project? How much income can be attributed to fish farming in the county? What is the average time taken to complete and commission a fish pond in the project? What is the average time taken to market fish from this project? How many ponds has the project been able to complete in time?

What is the number of ponds that have been abandoned by farmers?

How many extra ponds have been established as a result of the farmers own initiatives?

How many farmers in this project that have members of the County Fish Farmers cooperative Society?

What is the projects total share capital in the County Fish Farmers cooperative Society?

APPENDIX IV: INTERVIEW GUIDE FOR KEY INFORMANTS (PROJECT MANAGERS)

Introduction

- Give a brief description of yourself
- Introduce the study
- Ask the key informant to introduce himself/herself

Question 1

How has been the performance of fish farming project since the roll out of the of ESP Program in terms of the following;

- Creation of jobs
- Production of fish in Kgs
- Generation of income from the sale of fish
- Quality of fish in terms of weight and size
- Number of ponds completed in time
- Sustainability of the fish farming project in terms of expansion, formation of clusters, membership in to cooperative society and shareholding levels.

Question 2

What has been the level of stakeholder's participation in the ESP Program of fish farming projects in the county during the following phases?

- Project design
- Project implementation
- Utilization of M&E results

Question 3

Explain level of stakeholder's capacity in the ESP Program of fish farming projects in the county in terms of the following.

- Level of newly acquired skills
- Strength of local networks
- Ability to solve problems
- Pond management skills
- Technical skills in development of new products

Please give other suggestions and comments

APPENDIX V: RESEARCH AUTHORIZATION PERMIT

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471, 2241349,3310571,2219420
Fax:+254-20-318245,318249
Email:dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.
NACOSTI/P/17/94294/14191

Date:
8th March, 2017

Paul Kiumbe Mburu
Karatina University
P.O. Box 1957-10101
KARATINA.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Participatory Monitoring and Evaluation, capacity building and performance of fish farming projects in Kenya: A case of economic stimulus projects in Nyeri County,"*** I am pleased to inform you that you have been authorized to undertake research in **Nyeri County** for the period ending **7th March, 2018.**

You are advised to report to **the County Commissioner and the County Director of Education, Nyeri County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nyeri County.

The County Director of Education
Nyeri County.

APPENDIX VI: RESEARCH CLEARANCE PERMIT

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEACH CLEARANCE PERMIT

Serial No.A 13056

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MR. PAUL KIUMBE MBURU
of KARATINA UNIVERSITY, 1794-10100
NYERI,has been permitted to conduct
research in *Nyeri County*

on the topic: *PARTICIPATORY MONITORING AND EVALUATION, CAPACITY BUILDING AND PERFORMANCE OF FISH FARMING PROJECTS IN KENYA: A CASE OF ECONOMIC STIMULUS PROJECTS IN NYERI COUNTY*

for the period ending:
7th March,2018

Permit No : NACOSTI/P/17/94294/14191
Date Of Issue : 8th March,2017
Fee Recieved :ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation