

**FACTOR INFLUENCING PERFORMANCE OF POULTRY
FARMING PROJECTS IN BURETI SUB COUNTY,
KERICHO, KENYA**

**BY
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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF
ARTS IN PROJECT PLANNING AND MANAGEMENT,
UNIVERSITY OF NAIROBI**

2014

DECLARATION

This research project is my original work and has never been presented for the award of any degree in any other university.

Signature.....

Date.....

Kipkorir Kirui.

L50/66385/2013

This research project has been submitted for examination with my approval as university supervisor.

Signature:

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DEDICATION

This project is dedicated to my son Kipkoech Baron and Chepkosgei Glettus for the support and encouragement they gave me.

ACKNOWLEDGEMENT

I wish to appreciate my supervisor, Mr Awino Joseph, resident lecturer, for his tireless effort to guide me through my research work. He was always available for me with great generosity of time, patience and academic advice. Sincerely, were it not for his support this work would not have had this success.

My respondents, the poultry farmers of Bureti sub –County, who allowed me into their premises and meeting places and took time to read and respond to the questionnaires. I am greatly indebted to them. In particular Mrs. Mutai Aurelia of Arokyet for organising for me to meet poultry farmers from her location and likewise Mr. Kirui Stanley of Roret for facilitating my meeting with his group farmers for assignment and filling in of the questionnaires. I most sincerely appreciate their immense contribution to this work.

The district livestock officer, BSC, Mrs. Maritim who provided me with the livestock data and human resource information besides taking time to fill in my questionnaires quit diligently, enabling me to make this project work possible. Together with the farmers respondents they made possible the analysis, discussion, interpretation and conclusions in chapters four and five. This would go along way in improving the poultry project performance in BSC and pave way for further research. I appreciate them all

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LIST OF ABBREVIATIONS AND ACRONYMS

BSC	Bureti Sub County
DLPO	District Livestock Production Officer
IFPRI	International Food Policy Research Institute
ILRI	International Livestock Research Institute
NALEP	National Livestock Extension Programme
NCD	New Castle Disease
PFPP	Poultry Farming Project
PP	Poultry Project
SAP	Structural Adjustment Programme

ABSTRACT

It is evident that poultry farming as a project is important in this time and age of diminishing acreage in terms of land holdings. The purpose of the study is to investigate the influence of factor, on the performance of poultry farming projects. The objectives of the study were: to determine the influence of extension service on the performance of poultry farming project in Bureti Sub County, also the influence of product market, level of education of the farmer and the cost of inputs on the performance of poultry farming project. Basic assumption of study were that all the respondents would be cooperative and provide reliable responses through the questionnaire given; that farmers selected were motivated by profit from the poultry project; that the sample used was a true representation of the poultry farming in Bureti Sub County. Literature review included the introduction, concept of extension services, small holder poultry farming to highlight the general practices of poultry keeping in various region and communities, it also covered literature on the various variable of marketing the poultry produce, the level of education of the farmers and the cost of inputs in poultry farming project. The study was also related to the theory of attribution which is a collection of interrelated ideas based on theories attempting to clarify why things are the way they are. The study was done on a descriptive survey designs, stratified sampling was used since the target population is distributed within the section of the locality; the study targeted the poultry farmers of Bureti Sub County whose population is estimated to be 302 and five extension staff officers. The sample size was 30% of the target population. The data and the information from respondents were gathered by use of questionnaire. Its significance is to help the farmer understand relationship between project growth on one hand and training, education, cost of inputs and market on the other hand. Future farmers will also get an insight of the complexes of the business. The government will also find the result of this study useful for economic planners who require knowledge and adaptive strategies for successful poultry farming. Financial institution as well will find it handy since they focus on youth and poultry farmers

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Various dynamics are currently changing the structure of the poultry sector. In 1999, Delgado *et al.* (1999) labeled the massive changes taking place in the livestock sector the "livestock revolution". The label covers the complex of trends, processes and effects that characterizes global livestock demand and supply. In brief, the growth in global demand for meat and other livestock products is tremendous - fuelled by population growth, economic growth, urbanization, changing diets and reductions in the relative prices of livestock products

The poultry industry faces the challenge of trade barriers that have been implemented in some countries such as China and India. Russia and India have introduced policies in their respective countries meant to hamper entry of the US poultry products (McArdle, 2006). In Malaysia, it is the high feed cost and new emerging diseases as the main challenges in the poultry industry (Razak, 2011), while in India the problems faced by industry are: Feed cost, Ignorance regarding biosecurity and egg and broiler highly fluctuating rates (Dr. Narayan, 2011)

Village fowl farmers in Botswana have reported that, before Newcastle disease attacks, they feed their fowl on green mulberry leaves to induce diarrhoea and claim that fowl that have been subject to this treatment do not contract the disease (Moreki, 1997). Apart from high cost of poultry feed in Nigeria, local/scavenger Chicken producers are facing challenges on how to implement bio security measures on scavenging poultry especially in the face of resurging H5N1 Virus and other emerging diseases. (Abba, 2011)

Generally, intensive poultry production has virtually collapsed in Africa. It is too easy to blame structural adjustment programmes (SAP) and, indeed, Adeyeye (1990) showed that in the pre and post-SAP periods, large scale poultry production had vastly different fortunes. The real problem appears to be the unsustainable nature of intensive poultry production systems developed in the post-independence period. This non-sustainability is due to technical, biological, institutional and socio-economic problems.

Village poultry farmers in Africa tend to start dealing with disease control once the symptoms appear in their flocks. They therefore treat symptoms instead of diseases and link specific

therapeutic preparations to specific disease symptoms. Village poultry are almost never vaccinated with standard Western-type vaccines. Very occasionally they are given antibiotics originally intended for human use (Bonfoh, 1997).

In Gambia, one preventive measure ('vaccination') traditionally used by fanners against Newcastle disease consists of blending the excreta from any wild birds with goat's milk and giving the resulting mixture to village fowl to drink. A similar use of the entrails of fowl that have died of Newcastle disease has also been reported. The entrails of the fowl are soaked in goat's milk and the resulting infusion is given orally to the birds. These practices may have some protective effect but cannot be recommended because the entrails are very likely to contain the virulent Newcastle disease virus. (Moreki, 1997)

In Uganda, marketing of local poultry is not well defined, chicken are sold to meet unforeseen expenses. The birds usually sold from the village flock are surplus males (cockerels and cocks); pullets and non-productive hens; large sized birds; old hens and sick birds. Growing chicken are sold just before the on set of the high risk Newcastle Disease (Byarugaba, 2007). There are no studies done to cover the various agro-ecological zones nor do they show consumer behaviour and market trends. The supply chain management consists of various players, right from production, wholesaling and retail. Local poultry farmers sell to the middlemen who exploit their ignorance of market prices to pay them less, (MAA1F 2004), echoed by Byarugaba (2007), the existing types of markets include:

Informal Markets: These are within the villages, possibly selling from farmer to farmer or to retailers. Often chickens are bartered for larger animals such as goats. **Primary markets:** Are generally formed by several villages within a parish. Often, they are unfenced areas with few or no facilities (perimeter fence, loading ramp, holdings and toilets). They are held on gazetted days of the week. Traders also purchase chicken from adjacent several primary markets, during the course of a week and truck them to destinations within or outside Uganda. **Secondary markets:** They normally have a larger output than that of primary markets but also lack proper weighing, loading and hygienic facilities. Traders often come with trucks to buy local chicken for immediate transportation to larger centres such as Kampala. Urban markets are found in larger towns and cities. Often there are designated areas where mobile chicken stalls are erected. Local governments tax operators of such units. Consumers from such urban markets are hotels, restaurants and some affluent city dwellers. Prices in these markets range

from UGS 35007-to 7000/- in 2005 with an average price layer difference of 2000/- (Mukiibi et al 2005).

Factors that affect marketing of local poultry include: seasonal availability of birds; transportation: retailer output; outbreaks of diseases; lack of information on prices; lack of streamlined marketing structures. Others may be socio-religious factors, which are due to plumage and sex.

A major constraint to small-scale, family-based poultry production in Tanzania is viscerotropic velogenic Newcastle disease (hereafter referred to as Newcastle disease), which is caused by a virus that is capable of causing up to 80 to 100% mortality in unprotected flocks (Sonaiya & Swan 2004). The virus spreads rapidly by means of airborne droplets produced by the coughing or sneezing of infected birds. In Tanzania, the highest prevalence of Newcastle disease outbreaks occurs in the dry season, from June to October (Yongolo et al. 2002). Factors that may influence the spread of Newcastle disease at this time of year include the increased exchange of chickens in the market (Alders & Spradbrow 2001), winds that can carry the virus in the air, and the sharing of a small number of contaminated water sources among chickens (Sonaiya & Swan 2004). Newcastle disease can be controlled by the use of vaccines. The vaccine is inexpensive and easily administered by trained villagers (Wambura et al. 2000);

Formal risk analysis has rarely been applied to individual farms in Kenya but would assist in determining the benefits of existing and proposed on-farm biosecurity measures and in highlighting gaps in our knowledge regarding the levels of hazards for farms (Kitalyi, 1998)

Training in disease diagnosis, epidemiology, environmental health and disease prevention must be provided, not only for health personnel, but for the farmers as well. Limited access to institutional services such as extension, training, credit and veterinary services affect poultry production in Kenya. (Ochieng et al, 2013). This study, therefore, seeks to investigate the factors influencing the performance of poultry farming projects in Buret Sub County, Kericho, Kenya.

1.2 Statement of the problem

Limited access to institutional services such as extension, training, credit and veterinary services affect poultry production in Kenya. (Ochieng et al, 2013). This study, therefore, sought to investigate the factors influencing the performance of poultry farming projects in Buret Sub County, Kericho, Kenya. Formal risk analysis has rarely been applied to individual farms in Kenya but would assist in determining the benefits of existing and proposed on-farm biosecurity measures and in highlighting gaps in our knowledge regarding the levels of hazards for farms (Kitalyi, 1998)

In Kericho municipality (Kenya) the number of farmer's involved in intensive commercial poultry production has been declining. The estimates are that there were about 986 farmers involved in commercial production in 2007 but only 620 farmers in 2009 (GoK 2009). In Bureti Sub-County, Poultry Project Farmers have not succeeded in the management of poultry projects. This has greatly demoralized the farmers who have invested heavily in these projects. This research study attempted to fill the gap, by investigating the factors influencing performance of poultry farming projects in Bureti Sub-County, Kericho, Kenya.

1.3 Purpose of the study

The study intended to investigate the factors influencing performance of poultry fanning projects in Bureti Sub County, Kericho, Kenya.

1.4 The research study was based on the following objectives

1. To determine the extent to which availability of extension service influence performance of poultry farming projects in Bureti Sub County.
2. To establish the extent to which the product market influence performance of poultry farming project in Bureti Sub County.
3. To assess the extent to which the level of education of the farmer influence performance of poultry projects in Bureti Sub County.
4. To investigate the extent to which the cost of inputs influence performance of poultry farming project in Bureti Sub County.

1.5 The study was based on the following research questions

1. To what extent is the availability of extension service influence performance of poultry fanning projects in Bureti Sub County?
2. How does the poultry product market influence the performance of poultry farming projects in Bureti Sub County?
3. To what extent does the level of education of the farmer influence performance of poultry farming project in Bureti Sub County?
4. To what extent does the cost of inputs in poultry projects influence the performance of poultry farming project in Bureti Sub County?

1.6 Significance of the study

The theories and practices in this study will contribute in the following ways: -

First and foremost to farmers, understanding the relationship between project performance on one hand and training, education, cost of inputs and markets on the other hand, this would contribute to a better understanding of the barriers to sound growth of poultry projects. The results of this study will highlight strategies that can be used by poultry projects farmers to overcome training and educational challenges together with market access which hinder successful growth of the poultry projects.

Secondly, the government will find results of this study useful to economic planners who may require knowledge and adaptive strategies for successful Poultry projects which can be used to identify needs for training, financing and market strategies necessary for growth of poultry projects. This would help in crafting economic policies and strategies aimed at fighting poverty and unemployment through development and encouragement of self employment.

Thirdly, financial institutions will benefit from the study since they are interested in both poultry farmers and youth in their enterprises and projects. The micro finance institutions (MFOs) would gain knowledge of how to integrate all the necessary parameters required for sustained growth of poultry fanning enterprises rather than focusing only on credit provision which would not guarantee success.

Finally, other researchers, practitioners, consultants and business students who might use this study to borrow ideas on poultry farming enterprises would find it very useful as a source of knowledge and a basis for further research

1.7 Limitations of the study

The areas that are likely to be paused challenges were the low literacy levels among the Poultry Project Farmers who were not able to read and respond to questionnaires. Use of research assistant to guide the respondent was employed.

Bureti Sub County is vast area that required elaborate arrangement to cover it as a whole effectively. Logistics of identifying and reaching them promptly were also expected challenges.

To cushion this, a map of the area, was used. This was from livestock department and liaising with divisional livestock officers, using the livestock (poultry) census information available in the web: www.buretconstituency.com (strategic plan)

Personal arrangement by the researcher to finance the research was made to sort the financial challenges and travelling. The research needed adequate time and therefore the work started in earnest with a well defined programme and schedule to sample, collect data and analyse.

1.8 Delimitation of the study

The study confined itself to the exotic poultry project farmers in Bureti Sub County. It excluded the indigenous poultry farmers which in most cases were found in every household and not practiced as a project but as a tradition by women and children. It involved only the sampled respondent although there are many Poultry Project farmers in Bureti Sub County. In focusing on factors of performance, the researcher was limited only to stated factors of extension service, level of education, marketing of poultry products and cost of inputs. This excluded other crucial factors such as quality and availability of feeds, quality of chicks, infrastructure, policy and institutional context in which livestock extension service operates. The study also targeted the current poultry project farmers and therefore exclude other experience farmers who have ceased the practice after having been involved in the past.

1.9 Basic assumptions of the study

The research study was based on following assumptions: That all respondents would be cooperative and provide reliable responses through the questionnaires distributed and within the given time. It was based on the belief that the farmers selected were motivated by profits from the poultry projects. It was assumed that sampled, sub population would be a true representative of the population within Bureti Sub County. It was assumed that the findings would be generalized to cover the whole county of Kericho. It was also assumed that keeping birds below 10 in number may not give the intended economic advantage and lack the zeal and enthusiasm on the side of the project owner.

1.10 Definition of significant terms as used in the study

Performance	This refers to the degree of success of the poultry projects in terms of management and financial returns.
Poultry farming projects	It is the art and practice of rearing domestic fowl in particular the exotic commercial birds
Level of education	The highest level of formal education that the farmer has acquired
Poultry inputs	These are materials and service that are routinely administered to the poultry (reared birds) for growth, sustainability and production
Product market	This the outlet through which the farmer sells the poultry products: Particularly eggs and meat.
Extension service	Service for the farm family and others, directly or indirectly engaged in farm production, to enable them to adopt improved practices in production management, conservation and marketing.
Veterinary service	Part of extension service which is geared towards improving and maintaining animal health. It involves disease management and parasitic control. Field days and organized demonstration for farmers on farming and livestock techniques usually on an identified and prepared farm

1.11 Organization of the study

The study is organized in the following ways:

Chapter one gives the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitation of the study, delimitations of the study, basic assumptions, definition of significant terms as used, and organization of the study.

Chapter two gives literature review from introduction, overview of smallholder poultry production, concept of extension service on performance of poultry farming project, availability of extension service in poultry farming project, influence of product market on performance of poultry farming, influence of cost of project inputs in the performance poultry projects, theoretical framework of the study, conception framework of the study and summary of literature review.

Chapter three describes research methodology which includes introduction, research design, target population, sample size and sampling procedures, methods of data collection, validity of research instruments, reliability of research instruments, methods of data analysis, operationalization of variables, ethical issues, references and appendices.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the review of literature related to the study. It starts with a general overview of the small holder poultry farming; the concept of extension education; availability of extension service in poultry projects: level of education of the farmer on the performance of poultry farming projects, product marketing and the cost of inputs in poultry projects. It also gives theoretical framework, conceptual framework; operationalization of variables and a summary of literature review.

2.2. Overview of Smallholder Poultry Production

(Livelihoods, food security and sociocultural significance)

In a traditional African context, i.e. where there are no investments in veterinary care or poultry housing and the chickens are left to scavenge on their own. poultry mortality is high and there is seldom much output to be gained from poultry keeping in rural areas (Alders & Spradbrow, 2000). Birds are usually considered to belong to the entire household and serve as gifts, as a good meal on a special occasion, or as a safety net in case of unforeseen expenditures. Under these conditions, a woman will rarely kill a bird, even if she is the one to prepare the meal, nor will she take it to the market, without having the agreement of her husband (e.g. Gueye 2003).

However, there is evidence that the situation changes when women smallholders start to invest more work and money in their poultry keeping, notably when they have become beneficiaries of a poultry development project. In such cases, when the poultry production becomes "project business", there tends to be a more clear-cut distinction with respect to ownership and decision-making in relation to the use of the birds. The poultry – and the money - then tends to remain within the context of the project and, thus, "in the hands of the women" (Altamirano, 2005); (Joensen, 2002); (Seeberg, 2003); (Riise et al., 2007); (Thomsen. 2005).

Smallholder poultry production is practised by most rural households throughout the developing world; despite the fact that its contribution to livelihoods appears to be of little nominal value when observed by researchers and other outsiders. (Kryger et al, 1990).

The "smallholder farming system" refers to the many diverse forms of production found in smallholder societies across the world (Netting, 1993).States that smallholder farming

systems are a particular kind of adaptation to scarcity; smallholders worry first of all about family reproduction and survival. Smallholder farming systems may be viewed as social systems that are part of the larger-scale political and economic context, as well as being part of specific ecological environments (Ellis & Freeman, 2005).

However, there appears to be a remarkable similarity in the role of poultry in (rural) farming systems across regions, agroecological zones and cultures e.g. (Aini, 1990); (Gueye, 2000); (FAO). Several attempts have been made to define the characteristics of different poultry production systems. Here, we present the classification developed by (Rushton & Ngongi 1998) and the (FAO 2007) "sector" classification. (Rushton & Ngongi 1998) distinguished the following types of smallholder poultry production:

The scavenging system - a form of production characterized by low inputs, with birds allowed wandering freely and scavenging for all or most of their food; The free-range system - in which poultry are provided with some supplementary feed, night-time housing water and occasionally drugs. The semi-commercial system - in which poultry are provided with feed and water and kept in fenced-in areas. (Sonaiya *et al.* 1999).

With the growing threat posed by highly pathogenic avian influenza (HPAI) in recent years, there has been an attempt to classify poultry production according to the level of biosecurity observed and the associated marketing systems (FAO, 2004); (FAO/OIE, 2007). The hierarchy expressed in this classification - higher levels of biosecurity in Sectors 1 and 2 than in the smallholder sectors (3 and 4) - cannot, however, be directly used to infer the level of risks associated with various types of poultry production. It has been shown that "commercial-scale" flocks can be at considerably higher risk of infection than "backyard" flocks, (Otte *et al.*, 2006)

Classification of poultry production on the basis of bio security level

Sector 1: Industrial integrated system with a high level of bio security and birds or products that are marketed commercially.

Sector 2: Commercial poultry production system with a moderate to high level of bio security, birds or products that are sold through slaughter houses or live-bird markets.

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The market for poultry meat is growing faster than that for any other meat product, and is projected by the International Food Policy Research Institute (IFPRI) to maintain this position in the coming decades (Delgado *et al.*, 2001). Rising demand has fuelled a structural change in the production and supply of poultry meat, with production for the global market concentrated in the hands of relatively few large companies, characterized by vertically integrated production and marketing. Smallholders in rural areas of developing countries face severe constraints to taking advantage of market opportunities and must pay high costs to

overcome market imperfections brought about by poor physical and institutional infrastructure (Delgado *et al.*, 1999).

There is a considerable degree of market segregation between broiler meat and meat from chickens from scavenging or semi-scavenging flocks. Meat from village chickens sells at a premium price, often in the range of 50-100 percent higher than broiler meat on a per bird basis, i.e. the premium may be even higher when measured in terms of weight, as the carcass weight of village chickens is often lower than that of broilers (Riise, 2005) personal communication. However, smallholders have limited means and market access with which to capture new market share, and face increased competition. (Patrick 2004) reports even higher premiums with prices of local chickens up to 3/4 times the broiler prices in Indonesia

Increasing efficiency in broiler-meat production and marketing, the elimination of trade tariffs, etc (Rola *et al.*, 2003). Smallholders in general and the poor in particular, face problems accessing credit, obtaining market information or new technologies, purchasing inputs and accessing product markets. Price fluctuations and asymmetric power relations in the market add to the list of constraints that smallholders face (Delgado *et al.*, 1999).

These processes potentially lead to the marginalization of smallholder poultry producers, but there may also be opportunities for smallholders to benefit from the surge in demand. In the Bangladesh Poverty Reduction Strategy Paper, for instance, contract farming is regarded as a promising opportunity for smallholders to escape poverty (Government of Bangladesh, 2005).

Elimination of trade barriers exposes commercial and semi-commercial producers to competition from cheap imports and affects the local commercial smallholder sector. Small-scale commercial poultry producers' associations in West Africa (e.g. Senegal and Cameroon) complain about the harsh effects of dumping cheap subsidized frozen chicken cuts from the European Union following the removal of import tariffs. It is claimed that the elimination of import tariffs has wiped out hundreds of thousands of jobs in the small-scale poultry sector in (West Africa FinalCall.com, 2007). In Cameroon alone, more than 110 000 jobs were lost over a seven year period between 1996 and 2003, and national broiler-meat production fell by almost 40 percent between 2000 and 2003 (Nguedjio, 2005). Obviously, these developments affect the livelihoods of smallholders who seek to market chicken products. The elimination of trade barriers is also regarded as a considerable risk factor for poultry producers in the Philippines (Rola *et al.* 2003) and in Indonesia (Fabioso *et al.*, 2004). (Rola *et al.* 2003) found considerable differences in the socio-economic characteristics of (informal) backyard broiler producers and (formal) contract farmers in the Philippines. Contract farmers are characterized

by higher socio-economic status, political affiliation, greater educational attainment, and greater financial capabilities with access to both formal and informal credit. Backyard broiler producers, in contrast, are generally less privileged, have no political or business affiliation, and have little or no access to formal credit due to high interest rates and their lack of collateral. The backyard broiler producers are believed to practise poultry rearing as a secondary or tertiary source of income (Rola *et al.* 2003). Despite the highly concentrated and vertically integrated production structure of the commercial broiler sector, a large proportion of broilers are sold as live birds through the wet markets because of consumer preference for fresh meat. The three major market segments that are serviced by the integrators are: wet market (50 percent), HRI (hotels, restaurants and institutions) (40 percent) and supermarket (10 percent) (Chang, 2004)

In a comparison of 80 contract farmers and 120 non-contract farmers in Lombok, Indonesia, (Patrick, 2004) found that contract farmers were significantly younger than non-contract farmers and had significantly better educational attainment, access to credit, houses, sanitation and off-farm incomes. Non-contract farmers had more irrigated land and more livestock assets than contract farmers. The area of land owned was less than 0.5 hectares for both contract and non-contract farmers

According to (Fabiosa *et al.* 2004) 90 percent of the broiler supply is from contract farmers or producers with other kinds of direct partnership with integrators. In other words, the Indonesian poultry sector is highly concentrated.

Contrary to the situation in the Philippines and Indonesia, (Ramaswami *et al.* 2006) found that in Andhra Pradesh, India, integrators deliberately select contract farmers that are of lower social standing than independent small-scale operators. Patrick (2004) reports that in Indonesia, contract farmers were also required to have electricity installed in the production facility; the initial total cost of production facilities was estimated at 20 million rupiahs or approximately US\$2 200. As describe above, the entry barrier in Viet Nam can be even higher.

In South Africa, however, (Vermeulen *et al.* 2006) found that: "Although the entry barriers are high, a limited number of smallholders are contracted to supply poultry and eggs. In the poultry industry, some large companies indicated that they have significant plans to expand smallholder involvement in their supply,

(Aklilu *et al.* 2007a) examined village poultry consumption and marketing in the Tigray region of northern Ethiopia through a longitudinal study of 131 farms, - half male-headed and

female-headed households - located in three different areas with low, high and medium market access, respectively. They found that households sell more of their poultry products, both eggs and birds, when located closer to the markets, while home consumption of eggs and birds is fairly similar in the three locations, implying that close-to-market producers have higher production output than producers located at a greater distance from the market. (Bush, 2006) concluded that: "If the poultry sector is wiped out, poor households will suffer income losses of an estimated 2-10 percent of baseline annual income (the SNNPR livelihood baseline),

2.3 Concept of Extension service on performance of poultry farming

The National Commission on Agriculture (1976) refers to extension as an out of school education and services for the members of the farm family and others directly or indirectly engaged in farm production to enable them to adopt improved practices in production, management, conservation and marketing.

The word extension is derived from the Latin roots '*ex*' meaning, out and '*tensio*' meaning stretching. Extension education is stretching out to the people who are beyond the limits of educational institutions. The concept of extension was then applied to various fields depending upon the sector which is being addressed. This has led to the development of disciplines like agriculture extension, livestock extension, home science extension, fisheries extension etc.

Education is a process of bringing desirable changes into the behaviour of human beings. These changes must be desirable to the society at large. The education is effective when it results in changes in all the following behavioural components as specified by (Paul Leagans, 1960)

Knowledge - What an individual knows? Attitudes -What he thinks? Skills (both Physical & Mental) -What he can do? Action - What he actually does? This aspect is known by the acronym KASA'

Extension involves the conscious use of communication of information to help people to form sound opinions and make good decisions (van den Ban & Hawkins, 1996). Extension is also defined as a professional communication intervention deployed by an institution to induce change in voluntary behaviour with a presumed public or collective activity (Roling, 1988). These definitions indicate that extension is for; extending educational advantages. Informing sound opinions to make good decisions. Inducing changes in voluntary behavior. (Stuart

1867) was considered as the father of University Extension for taking first practical steps and taking lectures to women's associations and working men's clubs in England in 1867-68. The term extension education was first used by Cambridge University in 1873, with an objective to take educational advantages of the university to ordinary people "Extension was borne of a need to provide innovative, informal adult education programs" As troth and (Robbins, 3987). The birth of the modern extension service has been attributed to events that took place in Ireland in the middle of the 19th century. (Jones, G.E. & Garforth, C. 1997)

The central task of extension is to help rural families help themselves by applying science, whether physical or social, to the daily routines of farming, homemaking, and family and community living. (Brunner, E. & Hsin Pao Yang, E. 1949)

The foundation of any permanent civilization must rest on the partnership of man and land (nature). According to (Ensminger, 1957), Extension involves changing attitudes, knowledge and skills of the people working with men and women, young people, boys and girls to answer their needs and wants, helping people to help themselves. Principles of "Learning by doing" and "Seeing is believing" development of individuals, their leaders, their society and their world as a whole. Working in harmony with the culture of the people. Extension education is a process and it is participatory in its approach. According to (Leagans P 1960), the sequence of steps involved in the process is: situation analysis, formulation of objectives, deciding the content and teaching methods, outcome evaluation and impact analysis and feedback and formulation of corrective action. In this way the continuous process of extension education goes on resulting in progress of the farmers from a given situation to a desirable situation. Training in disease diagnosis, epidemiology, environmental health and disease prevention must be provided, not only for health personnel, but for the farmers as well. Limited access to institutional services such as extension, training, credit and veterinary services affect poultry production in Kenya. (Ochieng et al, 2013) This study, therefore, seeks to investigate the factors influencing the performance of poultry farming projects in Buret Sub County, Kericho, Kenya.

2.4 Availability of extension service on poultry farming projects

Newcastle disease is the most important disease of poultry. Reports of mortality vary: 50% of the flock in Togo and Sudan; 70% in Nigeria, 80% in the Comoros, 90% in Zaire and upto 100% in (Sonaiya, 2007). Disease out-break, increased mortality and higher percentages of cull birds could adversely affect profitability of egg type layers. (Farooq et al, 2001) reported a significant and negative association of mortality with net profit, suggesting that increase in

mortality would result in a decrease of net profit. A higher percentage proportion of culls are a function of poor quality chicks and feed and inappropriate management or care of the flock. Similarly, higher death rates in egg type layers could be due to severe outbreak of diseases, substandard health measures and management practices, poor quality of chicks or feed and accidental deaths. Thus, due attention shall be given to infections, health care, management practices and predisposing factors in the avoidance of undue risks of mortality in chicken. Because, microorganisms deteriorating performance of chickens or resulting in morbidity or mortality could be abundantly found in and near the poultry sheds and any variation in rearing environment would provide a better chance for these microorganisms to invade chicken. Salmonellae, one of the bacterial species influencing higher losses in chicken, were abundantly found in bedding material of chicken (42%), drinkers (36%), feed (28%) and water tanks (17%) of the poultry farm (Sasipreeyajan et al, 1996). (Majid et al. 1991) also reported higher prevalence of Salmonellosis in layer flocks maintained under poor management conditions in Faisalabad. These organisms contaminate feed and drinking water and result in severe economic losses.

Formal risk analysis has rarely been applied to individual farms, but would assist in determining the benefits of existing and proposed on-farm biosecurity measures and in highlighting gaps in our knowledge regarding the levels of hazards for farms. (Kitalyi, 1998)

2.5 The extent to which the product market influence the performance of poultry farming project

The availability of markets and market information will encourage the farmers to produce goods having confidence that there exist ready customers. Any market that is inconsistent will be less attractive to the investors. Farming businessmen will prefer to invest in areas that have adequate information about the present and potential customers as well as safe markets for their products. The presence of cheap imports in the markets will in most cases discourage investors from putting their money in establishing businesses that will eventually have to unfairly compete with them. Investors will prefer to invest in businesses that are free from unfair and un-regulated competition, www.ejbs.com/recent.aspx

The poultry industry also faces the challenge of trade barriers that have been implemented in some countries such as China, India and Russia and India have introduced policies in their respective countries meant to hamper entry of the US poultry products McArdle. In Kenya, the livestock industry suffers from poor organization. There is little if any focus on the government in trying to put up systems that can lead to smooth flow of products from the

farmers to the consumers. During dry seasons, the country experiences acute milk shortages. When the country experiences good rains, there is usually an overproduction which in some cases has led to the farming businessmen draining their milk down the drains. In Kenya, egg traders have been illegally crossing the border to Uganda to buy cheaper eggs for reselling in Kenya, earning better returns in the market places, but leaving Kenyan farmers suffering from poor egg sales. This is as result of the lower cost of feeds in Uganda which enables the farmers to sell their eggs at a relatively lower price compared the Kenyan egg producers, (Kariuki, 2007). The factors that determine egg supply may vary from district to district. Therefore, another survey can be commission to determine these factors in other districts such as Murang'a and Nakuru counties which have a big poultry farming businesses. (Kang'ethe & Willy Muturi 2013)

2.6 Influence of Level of Education of the farmer on performance poultry Farming Projects

The most important prerequisite is farmers to have basic education, skills and to know basic mathematics. Even some agricultural specialist and veterinarians have not enough knowledge in mathematics, bio-statistics and "Epidemiology" - The science concerned with the study of the factors determining and influencing the frequency and distribution of disease, injury, and other health-related events and their causes in a defined HUMAN population for the purpose of establishing programs to prevent and control their development and spread. (Lordan P 2012)

Where women do not receive the needed training, especially for new types of activities, ignorance can lead to the failure of a livestock enterprise. In Sri Lanka, for instance, a newly formed women's poultry group bought day-old chicks for poultry production, all of which turned out to be cockerels. Their mistake almost caused the business to fail. (IFAD 1994)

Training in the field of paraveterinary agents and use of communication media can also provide the needed learning at a relatively low cost. (Fuller, 1994). The World Bank assisted the NGOs for the introduction of the Training and Visit or T and V Extension System to train fanners and extension workers and to pass on technical recommendations in a time-bound schedule of visits to contact fanners. (Basnyat, 1990). Too often extension agents are: under-trained, under-equipped, underemployed, under-paid and under-motivated. Furthermore, the general extension worker has a multiplicity of duties to perform, by (Mack & Femandez-Baca 2004)

For beginning farmers WSU Livestock Advisor training-begins a new 10 week series February 17, 2014. From nutrition, fencing, feeding, housing, breeding to pasture management, learn how to raise high quality poultry, sheep, beef, swine, goats, and more in a sustainable, humane way. Washington State University (WSU) Extension (2014).

Extension provides further training that increases their knowledge and skill in that area. Volunteers use what they have learned to facilitate Extension educational programming in their communities. (Texas A&M Agri Life Extension Service 2014)

Education has been defined as the process through which knowledge, skills, attitudes and values are imparted for the purpose of integrating the individual in a given society, or changing the values and norms of a society. For individuals, this process is life-long: it begins at birth and ends with death. The UNESCO International standard classification of education defines education as comprising organized and sustained communication designed to bring about learning (UNESCO, 1975)

Kenya has always placed education as a priority at all levels, promoting it as a key indicator for social and economic development. Indeed, investing in education is a critical part of Vision 2030 (GOK 2007). In agriculture, education is a key determinant of technology adoption and education levels are highly correlated with technology adoption rates. This in turn increases agricultural productivity, incomes and improved livelihoods (Olwande at al 2009).

Knowledge about the latest research efforts in the areas of genetic engineering and health management particularly as they affect the prevention of communicable diseases such as avian influenza is necessary for effective performance and increased productivity of the poultry industry. (Emir J. Food Agric. 2007).

2.7 Cost of inputs in Poultry farming projects

The cost of inputs determines the size of business that the businessmen are able to set up. When the cost is high, many farming businessmen will either opt to reduce the size of the business or close the business altogether which will result to decreased output. For the poultry business, inputs especially feeds constitute up to 70% of the total costs in many African countries. A big problem in livestock production in Africa is the high cost of feeds ingredients especially grains for intensive production. This high cost has acted as a deterrent to many potential livestock farming businessmen especially those that cannot access credit facilities from banks. It also leads to under-utilization of the available farming lands as fanners only

stock small numbers that they can be able to take care of, (Ngoupayou, 2007). Rural and urban infrastructure is one of several subsets of activities that are essential elements for African rural transformation. The existence of poor quality or inadequate infrastructure will inevitably impact negatively on the competitiveness of African agriculture through increasing internal transport costs, reducing levels of value-additions, as well as lowering transaction efficiencies in the marketing chains. The provision of adequate and cost-effective rural infrastructure will clearly, therefore, underpin the development of agriculture in general and, in particular, facilitate lower-cost production and marketing to enable countries in the region to respond to both national and international market demand. In Kenya the prices of poultry feed have gone up sharply; 50 kg of layers mash went up from KSh 2,700 last year to KSh 3200 in May 2001 so the chicken breeder is faced with a double problem, with higher prices for feeds and with lower income through reduced chicken prices. (The magazine for sustainable agriculture in East Africa Nr. 73 June, 2011)

2.8 theoretical framework of the study

According to (Tromp and Kombo 2002) theoretical frame work refers to collection of interrelated ideas based on theories attempting to Clarify why things are the way they are based on theories, introducing new view of the research problem, allowing understanding ream of the problem, allowing understanding ream of the problem, helping conceptualize the topic in the entirety and to acknowledge the problem from a broader perspective for objectivity.

This study is based on attribution theory .an explanation of motivation that focuses on how people explain the cause of their own successes and failure is called attribution theory (slavin,1986,)theoretical based during the decades between 1930-50 the field of motivation was central in psychological (Weiner ,1985) the world “ motivation” is used to describe to drive ,need or desire to do something specific or general (slavin,1986)

In theory, beliefs about the causes of success and failure, known as casual attribution, mediates between the perceptions of achievement task and final performance. Such attributions determine the motivation to try harder in the future. Low expectancy of success and helplessness, associate with lack of ability ascriptions, are assumed to retard achievements strivings, (chanler, 1996).attribution’s theorist examine causal conceptions or judging about why behaviours (his/her) behaviour or others’) (khayyer,1990).attribution theory (that seeks to understand explanations and excuses, particularly when applied to success and failure (slavin,1989)

So this theory wishes to find the way in which individuals explain and describe the cause of an event and causal factors in other words ,the term “ attribution” refers to reason of cause, that individual declares for event for a behaviour ‘s result and courses, it is a personal inference .We can clarify attribution along three dimension: locus (or source) of control, stability and controllability .however, attribution theory deals primarily with four explanations for success and failure in achievement-situation, ability, effort, task difficulty and luck (Salvin 1986),(Weiner 1985),(Khyyer, 1990),(zamani,1992).

Attribution theory is important in understanding how people, including farmers, might interpret their level of performance (on academic task, on producing farm product and so on) and how to use feedback on their performance,(slavin,1986).we often don’t make effort to think that carefully about our attribution,(brehm,1993) motivation is founds at the mans’ behaviour researcher have tested this theory is different occupational field and with various subjects as :nurses, marketing managers, individuals with different nationalities, religion, sex, riches and poor: and have measured relation between this theory and individuals characteristics (Chebat 1992),mc macollant,1995)(nurmi,1992) Weiner 1995).

We must recognize that motivation is hypothetical construct. That is, we cannot directly observe a person’s motivation- all we can observe is a persons’ behaviour and the environment ,that we suppose arouse ,direct, and sustain behaviour (Fanelli ,1977).one of the applied subject of explanations and excuses about success and failure .it has been rather definitively documented that casual attributions influence expectancy of success ,(weiner,1985) .one of the main assumption in attribution theory is that searching for understanding and conception causes of event is the chief motivation of human

In spite of these short comings, the researcher found it appropriate to use this theory since it has been tested in different occupational fields including producing farm product and the fact that it helps to interpret the level of performance and how to use feedback on their performance. It has measured relation between the theory and individual characteristics. Paying attention to motivation not only will increase psychological difficulties but also makes possible human’s growth, (zamani, 1992).

Connecting attribution theory to this study, the researcher felt that attribution played a significant role in influencing the poultry project farmers’ performance in Bureti sub-county,

Kericho County, Kenya. This research is seeking to specify the factor to which poultry project farmers (PPF) attribute their successes and failures in producing poultry products.

2.9 Conceptual Framework of the Study

A conceptual framework refers to how a researcher perceives the relationship between variables in the study and shows the relationship graphically or diagrammatically,

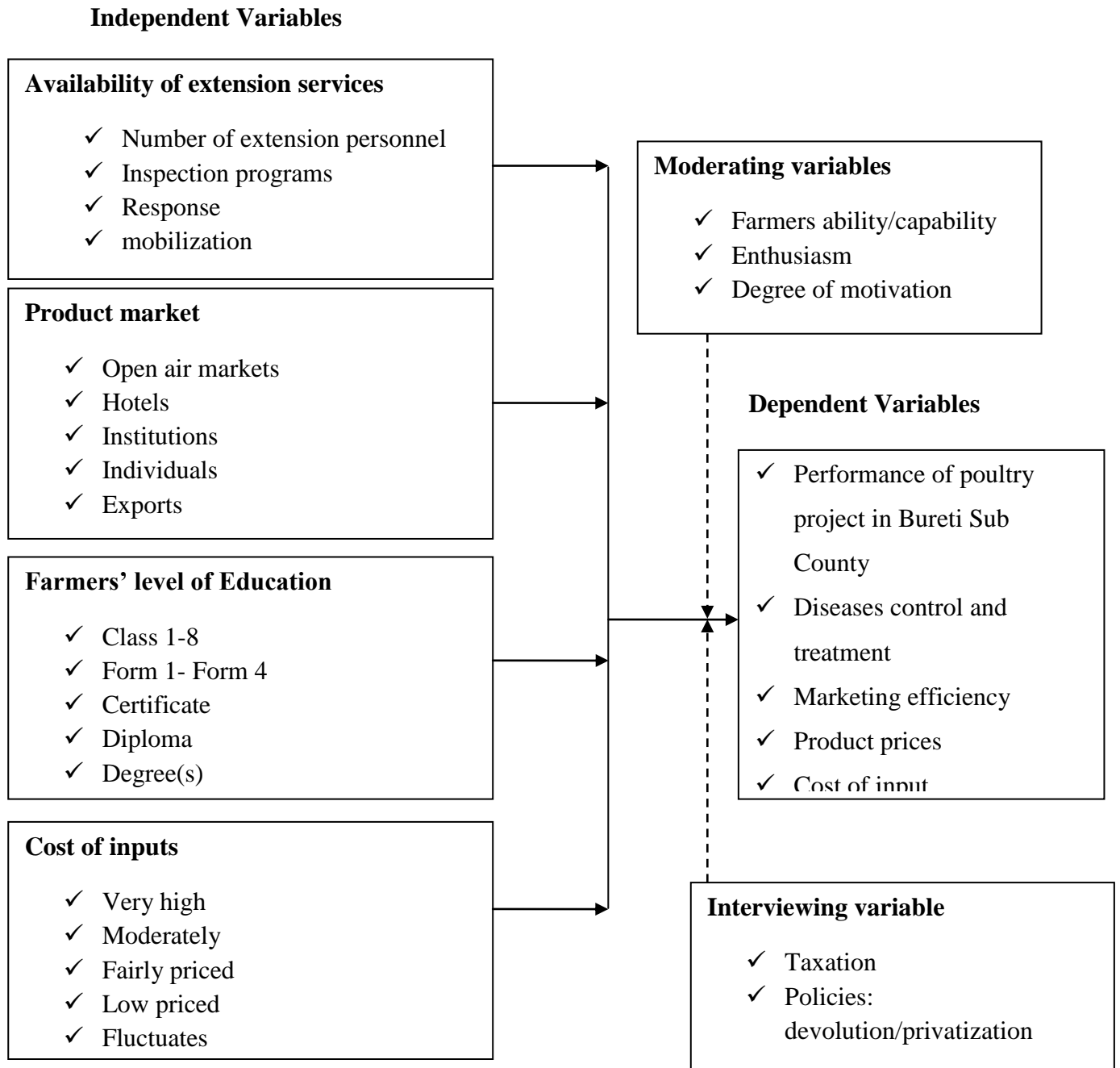


Figure 2.1: Conceptual Framework of the study

Besides the independent variables, other variables that will influence the performance include farmers' ability and motivation (moderating variables) and also the government taxation and policies (intervening variables)

2.10 Summary of literature review.

Where there are no investments in veterinary care, there is seldom much output to be gained from poultry keeping in rural areas (Alders and Spradbrow,2000).The role and importance of poultry for rural livelihoods has emerged as critical issue following the outbreaks of HPAI in Asia and Africa[WPSA,2007],[Baba,2006]

Various dynamics are currently changing the structure of the poultry sector. In brief, the Growth in global demand for meat and other livestock products is tremendous-fuelled by Population growth, economic growth, urbanization, changing diets and reductions in the relative prices of livestock products. The market for poultry meat is growing faster than that For any other meat product, and is projected by the International Food policy Research Institute [IFPRI] to maintain this position in the coming decades,[Delgado et al.,2001].It contributes to the employment opportunities in town in addition providing nutritional value to the community,[Chemjor et al 1990],the farmers, veterinarians, stockholders and all other partners involved in the production chain will have to share more responsibilities and the cooperation will be intensified.[Hafez,2013]

The modern poultry industry aims at high productions and better quality at a low cost. In the future several challenges and problems, in addition to the ones already existing, will face everybody involved in the poultry chain.(Hafez, 2013)

Livestock extension approach in Vietnam is based on principles of transfer of advanced, modern technologies via demonstration models established with key farmers, coupled with the use of inputs

Subsidies to encourage the technology transfer and adoption process,(Hoang and Nguyen 2003).The approach is a classic example of what elsewhere has been describe as Production - focused, institutionally monolithic, centrally directed and organized extension based on the premise that public sector extension structures can effectively reached down to local levels [Farrington et al.2002].Deliberate efforts should be made to impart skills in Livestock husbandry practices to livestock fanners. This as suggested by [Mbowa et al 2012]

Will entail building new information dissemination networks by strengthening the capacity to Channel veterinary extension support services via farmer groups such as co-operatives and associations. Although extension institutions and various sources of information exist in almost every developing country, the coverage of farm families is still very limited (Yahaya, 2002). Specifically, extensive contacts in information sharing such as can be found in a network is required for development of animal production. This is because it will improve the performance of locally available animal production resources within the rural system. (Sonaiya, 2004) The Extension agents' and farmers' communication factors include human relations, communication behaviour and skills and role performance. The factors according to (Waisboard, 2006), (Agbamu, 2006), (Olowu, 1989) could either enhance or jeopardize the success of a development programme. It therefore means that they are salient to effectiveness of messages.

Different types of extension services are being rendered by extension agents to poultry farmers from which these farmers derive a lot of benefits. Some of the benefits include advisory services, disease management and other production management techniques all geared towards increasing poultry production and the enhancement of their income. (Oladele, O.I., 2004). In Bureti Sub-county, no research has been done on the factors influencing performance of poultry projects yet the farmers have not succeeded in maintaining the growth of the poultry projects.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the various methods that were used to collect data and information that is necessary for the completion of the study. Basically it discussed what was to be done with the aim of obtaining valid and reliable data. It included research design, target population, sample and sampling procedures and methods of data analysis together with the ethical issues.

3.2 Research design

The study was done using a descriptive survey design to investigate the prospects of revitalizing the performance of poultry projects among the poultry farmers in Bureti Sub County, in an effort to ensure that the projects became meaningful in terms of reward and as a source of income to the farmer and the society at large.

Descriptive survey design are used in preliminary and exploratory studies (Luck & Reuben, 1992) to allow researcher gather information, summarize, present and interpret for the purpose of clarification (Orodho 2002). The study sought to uncover the nature of factors involved in a given situation; the degree in which it exists and the relationship between them, (Travers, 1969).

By involving a broad category of stakeholders, the proposed study fits within the cross-sectional subtypes of descriptive survey study designs. Stratified random sampling method was used in the study. Since the accessible population was distributed within the section of the locality, and in addition, a stratified random sample was selected from each of the section. This technique was appropriate in this case because the area is divided into three sections Bureti, Cheborge and Roret divisions.

3.3 Target population

Target population is the complete of individuals, cases or objects with same common characteristics to which the researcher wants to generalize the results of the study, (Mugenda & Mugenda 1999). In this study, the target population was the poultry farmers in Bureti sub county whose population is estimated to be 302 commercial poultry farmers, 5 extensions staff members. (Strategic plan, Annual Report 2013) BSC

3.4 Sample size and sampling procedure

This section describes the sample size and sampling procedures.

3.4.1 Sample size

Sample used in the study is made up of 91 farmers and 2 extension staff members

There were a total of 302 farmers and 5 extension staff members. The sample was calculated as follows:

$$\frac{30}{100} \times \text{target population in the sub group}$$

For farmers, the sample size is: $\frac{30}{100} \times 302 = 91$ (approximately)

Extension staff $\frac{30}{100} \times 5 = 2$ (approximately)

This gave $91 + 2 = 93$ respondents in total.

The respondents were selected randomly.

3.4.2 Sampling procedure

According (Mugenda&Mugenda 2003), a sample of 30% is sufficient to represent the target population in data collection for a research study. The study targeted commercial poultry farmers, and extension officers in the three divisions of Bureti Sub County, Stratified from the three divisions, a sub-sample was determined as shown below.

Table: 3.1 Poultry distribution per division in BSC

Division	Population of poultry	Number of poultry farmers households	Sample ration	Sample size
Bureti	50,224	148	0.3	44
Cheborge	16,580	92	0.3	28
Roret	8,830	62	0.3	19
Total	75,634	302	0.3	91

Source: Strategic Plan, Annual Report (2013) BSC

3.5.1 Data collection instruments

Two types of data were used; one for the poultry farmers and the other for extension 'staff in the field. The questionnaire which is a tool with a list of questions, in which respondents is required to respond to, were taken by the researcher to the selected farmers and extension staff. Questionnaires are more objective because they gather responses in standardized way while ensuring confidentiality. Both closed ended and open ended questionnaires were used. The close ended questionnaire was presented on the likert scale, which allowed participants to respond with a degree of agreement or disagreement.

3.5.2 Validity of data collection instruments

Validity of instrument is the degree to which it actually measures the variables it claims to measure. Validity refers to the systematic error in measurement. The validity of an instrument represents the degree to which a test measures what it purports to measure. The study addressed content validity using expert judgment, peer review and analysis of the pilot responses, in relation to the objectives of the study.

3.5.3 Reliability of data collection instruments

An instrument is reliable when it can measure a variable accurately and consistently and obtain the same conditions over time. It is a measure of the degree to which a research instruments yield consistently results after repeated trials under the same condition over time. The split-half technique was used to determine the reliability of the instruments. The same questionnaire was administered to the sample population which was randomly divided into two halves on the basis of odd and even numbers. Thereafter, the researcher used Pearson's product moment correlation co-efficient to compare the correlation between the two totals 'set' scores, a coefficient of 0.78 was achieved and considered acceptable since it's above the minimum of 0.7.

3.5.4 Piloting of the study

Pilot study was done in Bureti sub county, Kericho County. According to (Mugenda& Mugenda 2003) a protest sample of the tenth of the total sample with a homogenous characteristic is appropriate for the pilot study. Questionnaires designed for the study were administered to 1 extension staff and 9 farmers for piloting. Those sampled for piloting were not involved in the actual study.

The pilot study gave the researcher an insight of the nature of expected results when the study would be completed. The researcher checked the validity of the instruments by studying the responses to the questions and also identified gaps in the instruments in relation to the research objectives and how to address them prior to the study.

3.6 Data collection procedures

The researcher collected the primary data using a structured (closed ended) and unstructured (Open ended) questions questionnaire. The researcher dropped and picked the questionnaires from the sampled poultry farmers. Where the respondent was not able complete the filling, was be given a day or two to do so. A follow up to check if the questionnaires are dully filled was done.

3.7 Data analysis techniques

Data analysis refers to the process in which the researcher interprets the data collected systematically in order to make a sense out of it. Raw data from the field was collected using questionnaires. All the questionnaires were carefully examined to check on their completeness and consistency. A serial number was given and the number identified for each respondent" Each objective was analyzed, described ~and interpreted on the basis of responses j to its specific indicators. The data analysis involved the initial steps- of coding, editing and tabulation as a basis for further analysis. The data was used to generate and tabulate reports. It was analyzed through descriptive statistics where frequencies, percentages and totals were used. The descriptive statistics are the most appropriate for the study because they would help in description, analysis and interpretation of circumstances the way they were at the time of the study. The data collected was edited, organized and analyzed using SPSS statistical package.

3.8 Operationalization of Variables

The performance of Poultry Projects is influenced by the availability of extension service to the fanners. This includes the training, workshops, field days and demonstrations. The performance of Poultry Projects is also a function of the level of education of the farmers as this determines the attitude and the level of articulation of issues especially those relevant and contemporary ones: The cost of inputs such as feeds and drugs, efficiency of marketing the produce, such as meat and eggs greatly determines the performance of poultry projects, Un the other hand, government policies, as in taxation and devolution of extension services or privatization , (intervening valuables) may hinder or up lift the performance of Poultry Projects. The farmers' motivation and ability (moderating variables) will also play a significant role,

Table: 3.2 Operationalization of variables

Dependent variable

Objectives	Variable	Indicators	Measures	Scale
Determine Performance of poultry farming Projects in Bureti sub county	Performance of poultry farming Poultry farming projects	Production level	- Quantity of product realized	Ordinal
		- Market availability	- How marketing is done	Nominal
		- Cost of inputs	- Income/profit level	Ordinal

Independent variables

Objectives	Variable	Indicators	Measures	Scale
To determine the extend to availability of extension service farmers receive performance of poultry farming in Bureti Sub County	Availability of extension service	Response time	- How promptly farmers receive extension service	Ordinal
		- Number of extension staff	- Ratio of personnel	Ratio
		- Personnel mobilization	- Efficiency of extension personnel	Ordinal
To establish the extend to which the product market influence performance of poultry farming projects in Bureti Sub County	Product market	- Individuals - Hotels institutions - Households - exports	- marketing efficiency - income level	Ordinal Ordinal

To what extent does the level of education of the farmer influence performance of poultry projects in Bureti Sub County	Level of education of the farmer	Primary school Secondary school level tertiary	Level of education	Ordinal
To what extent to which the cost of poultry project inputs influence performance of PP in Bureti Sub County	The cost of poultry projects inputs	- Trends of cost of feeds - Cost of Drugs - Treatment Cost - Initial Cost	Cost of inputs If cost of inputs are high	Nominal

3.9 Ethical issues`

During the study, the researcher maintained high professional ethics of conduct and ensured the respondents privacy and confidentiality was safeguarded. The respondents were informed of objectives and significance of the study by a copy of the letter of authority from DLPO. Every effort was taken to ascertain that no plagiarism occurred during the research study and the intellectual property rights upheld. Potency rights and copy write laws were be observed and consciously forgery of documents and faking data among other unethical practices were completely avoided in Every step taken during the study entailed utmost human dignity and no physical or psychological harm or cruelty was triggered.

CHAPTER FOUR DATA ANALYSIS AND DISCUSSION

4.1 Introduction

The purpose of this chapter is to present and discuss the analysis of data from literature review and the data collected from the respondents who filled in the questionnaires. The structured questionnaires generated quantitative data; this was analyzed using descriptive statistics, tables and significance level. The unstructured questionnaires generated qualitative data which are analyzed through thematic and content analysis. The results of the data analysis provided information that formed the basis for discussion and interpretation which paved way for conclusion and recommendations of the study.

4.2 Questionnaire response rate

The researcher administered ninety three (93) questionnaires to randomly selected farmers in the three divisions of Bureti sub-county, namely Cheborgei, Roret and Bureti, 85 of which were returned dully filled, representing a response rate of91%.

4.3 Demographic analysis

4.3.1 Gender of the respondents

To determine the gender composition of the poultry farmers in Bureti sub- county. The respondents were asked to indicate their gender, the result are shown in the table below.

Table 4.1 Gender of the respondents

Gender	Frequency	Percentage
Male	51	60.0
Female	33	38.8
No response	1	1.2
Total	85	100.0

The result shows that there are more men, 60%. 51 out of 85 as compared to women 38.8%,33 out of 85 who practice poultry farming as a project in the sub-county.

4.3.2 Age of the respondents

The ages of respondents would show the energy level and the importance attached to the project. The respondents indicated their ages as shown in the table below.

Table 4.2 Age of the respondents

Ages	Frequency	Percentage
(18-25) yrs	7	8.2
(26-35) yrs	22	25.9
(36-45) yrs	35	41.2
(46-55) yrs	17	20.0
(Over 55) yrs	4	4.7
Total	85	100.0

The results show that majority (41.2%), 35 out of 85 of the poultry projects farmers are middle aged adults at (36 - 45) years, followed by young adults of (26 - 35) years at 26% 22 out of 85 who are energetic. Older farmers over 55 years age and young adult at (18-25) years are quite few representing only 4% and 7% respectively.

4.3.3 Years of involvement in the project

Experience as in most other areas is critical in poultry production and therefore the study aimed at establishing the years of experience the poultry project farmers have and the results are shown below;

Table 4.3 Years of involvement by the project farmers

	Frequency	Percentage
Less Than 1 year	12	14.1
Between (1-3) years	42	49.4
Between (3-6) years	16	18.8
Over 6 years	15	17.6
Total	85	100.0

The table shows that the poultry projects are relatively new in Bureti Sub county, since the majority of the respondents (49.6%) 42 out of 85 have been in it for 1 - 3 years while only 17% 15 out of 85 have practiced for a longer time of over 6 years.

4.4 Type of birds

There are many types of birds reared. To find out which are most popular, the respondents were asked to state the type of birds they keep and the table below represents their response.

Table 4.4 Types of Birds

Type of Birds	Frequency	Percentage
Layers	59	69.4
General purpose	11	12.9
Layers and Broilers	11	12.9
Broilers	4	4.7
Total	85	100.0

It is evident that majority (69.4%) 59 out of 85 of the poultry project farmers in Bureti keep layers for eggs production while quite a few (4.7%) 4 out of 85 keep broilers for meat. The rest domesticate the general purpose birds 12.9%, 11 out of 85 and a mixture of layers and broilers at an equal level of 12.9%.

4.5 Operational functions

To project on the level of commitment by those in charge of daily practices, the respondents were asked to indicate who performed the basic operational functions in the project premise. This is shown in the Table 4.5 below:-

Table 4.5 – operational functions

Performance of poultry	Frequency	Percentage
Farmer	78	91.8
Care taker	5	5.9
Extension officer	1	1.2
Private Vet	1	1.2
Total	85	100.0

As shown, the bulk of approximately 92% 78 out of 85 of the players are the farmers themselves, while only 5.9% 5 out of 85 entrust the task to the caretakers or employees. This implies that the level of attention and commitment is quite high since it comes from the project owners motivated by the target profit and future projections

4.6 Measurement of Performance of Poultry Farming Projects

Table 4.6 Performance of Poultry

Performance of poultry	Frequency	Percentage
Starters	21	24.7
Poor/losses	6	7.1
Low/No profit	9	10.6
Fair/ Little	32	37.6
Good/High	17	20.0
Total	85	100.0

Majority 37% 32 out of 85 of the farmers operates at little profits level and about 80% and a frequency of 68 in 85 do not realize high or good performance from their projects in the sub-county. Starters refer to the relatively new farmers who are yet to reach the marketing stage. The hens are yet to lay. They indicated their intentions in term of market availability. This is where they plan to sell when their time comes. The performance is measured in terms of percentage lay by layers which is the bulk of the birds reared in Bureti (Table 4.4) Broilers are sold at maturity and therefore the performance depends on the market price. The researcher focused on layer birds in this endeavour. The poor / losses category are those farmers whose records of percentage is 60% and below. This is because the production cost of poultry is at least 60% of the income from egg sales. This is agreed on by all the farmers since the feeds are commercially manufactured for commercial birds. Low profit levels are those whose (61 - 70) % of their birds lay. After ploughing back up to 60% or more, into the feeds and other expenses, little remains, hence low profit or low performance. Fair performance is those whose record of their hens lay is (71-80) %. There will be a better saving after the running cost. High performances are those operating above 80% of birds laying. The net profit will be high. This is the dream of every poultry farmer. This is the level which imparts positively in the standard of living especially when the farmer enjoys economies of scale.

4.7 The extent to which the availability of Extension Service influence performance

The respondents were asked to State the of availability of extension service on the likert scale with varying degrees by rating the given statements as Strongly agree, Agree, Neutral, Disagree, and Strongly disagree. The responses are summarized in table 4.7 below.

Table 4.7 Availability of Extension Services

Availability of extension	Frequency	Percentage
Not available	24	28.2
Neutral	10	11.8
Available ¬ prompt	25	29.4
Available &moderately prompt	17	20.0
Available &quite prompt	9	10.6
Total	85	100

The table shows that a few 10%, or 9 out of 85 of the poultry project farms access the service quite readily. Further 20%, same as 17 out of 85 access the service though not readily. The rest, up to 70% find it difficult to access the service whenever there is need or they have even given up on the same or made their own private arrangements for the service from private veterinarians. This comprise the neutral group, 11.8%

The table 4.8 below shows the relationship between performance of poultry projects and the availability of extension service.

Table 4.8 Performance of Poultry Projects versus Availability of Extension Services

Availability of extension service	Performance of poultry					Total
	starters	Poor/losses	Low/no profit	Fair/little profit	Good/high	
Not available	7	0	5	8	4	24
	29.2%	0.0%	20.8%	33.3%	16.7%	100%
Available and not prompt	5	2	2	12	4	25
	20.0%	8.0%	8.0%	48.0%	16.0%	100%
Neutral	4	1	1	1	3	10
	40.0%	10.0%	10.0%	10.0%	30.0%	100%
Available & moderately prompt	4	2	1	7	3	17
	23.5%	11.8%	5.9%	41.2%	17.6%	100.0%
Available & quite prompt	1	1	0	4	3	9
	11.1%	11.1%	0.0%	44.4%	33.3%	100.0%
Total	21	6	9	32	17	85
	24.7%	7.1%	10.6%	37.6%	20.0%	100.0%

Starters here, who were 21, refer to the new farmers who have not matured yet to collect eggs, their performance therefore could not be measured on the basis of laying percentage like the rest. The table generally indicates that in each category, the majority operates on the level of little profits. However those who access extension service and promptly, 33%, or frequency of 3 out of 9 do well in the category of high performers and followed closely by the neutral group, 30%, 3 out of 10. Where the service is not available or not promptly available it is only 16%, the least, who realize high performance. Further analysis of the performance in terms of percentage lay and extension service is show in the table 4.9 below.

Table 4.9 Ratio of Eggs to Hens in Percentage versus Availability of extension service

Availability of extension	Percentage
Neutral	34.45
Available & moderately prompt	44.55
Not available	47.16
Available & not prompt	57.65
Available & quite prompt	79.38

Again the respondents who have available and prompt service realize the highest mean percentage of lay, at 79.3% and followed by those who access thought not promptly. The neutral group experience the least performance 34%, as stated by Gchieng et al, (2013) that limited access to institutional services such as extension, training, credit and veterinary services affect poultry production in Kenya.

4.8 Influence of Product market on performance of Poultry Projects

The respondents were asked to indicate their main outlet market for their products; the results are shown below;

Table 4.10 Market outlets for poultry project farmers

Product market	Frequency	Percentage
Individuals and households	61	71.8
Hotels	4	4.7
Combinations above	20	23.7
Combination above	20	23.7
Total	85	100.0

From table 4.10 it is clear that the great majority 71.8%, 61 out of 85 sell their product to individuals and households. Minority 23.5%, 20 out of 85 sell through various points as the situation allows, from the product market point of view, Table 4.11 below shows the performance of poultry project in relation to market outlet.

Table 4.11 performance of poultry project versus market outlets

Product market	Performance of poultry					Total
	starters	Poor/losses	Low/no profit	Fair/little profit	Good/high	
Individual & household	9	1	0	7	3	20
	45.0%	5.0%	0.0%	35.0%	15.0%	100%
Hotels	11	5	9	22	14	61
	18.0%	8.2%	14.8%	36.1%	23.0%	100%
Combinations above	1	0	0	3	0	4
	25.0%	0.0%	0.0%	75.0%	0.0%	100%
Total	21	6	9	32	17	85
	24.7%	7.1%	10.6%	37.6%	20.0%	100.0%

It is shown that the leading, 23%, 14 out of 61 who experience high performances are those who sell their products (eggs) to hotels. However a greater majority 80%, 68 out of 85 of the farmers realizes poor profits or worse from their proceeds regardless of the market outlet

Further the farmers were categorized on the basin of the market outlet and the percentage of each group tabulated in Table 4.12 below.

Table 4.12 ratio of eggs to hens in percentage versus market outlet

Product market	Percentage lay
Individual & Households	79.9
Hotels	78.3
Combinations above	80.1

The highest mean 80% of eggs collected occurs in the group of producers who sell to combined outlets of individuals, households and hotels. Those selling to hotels only again realize almost the same performance, 78.3% though slightly below.

4.9 Influence of the level of Education on Performance of Poultry Projects

The respondents were asked to indicate the highest level of education, ranging from non-formal to university degree education levels. The table 4.13 below indicates the responses

Table 4.13 level of education

Level of education	Frequency	Percentage
No formal education	1	1.2
Primary school	11	12.9
Secondary school	27	31.8
Certificate level	14	16.5
Diploma	19	22.4
University degree	13	15.3
Total	85	100.0

It is evident from the table that only 14%, 12 out of 85 of the respondents did not have secondary school education. Majority 86%, 73 out of 85 have at least form four level of education. Table 4.14 below brings on focus the level of education and poultry performance relationship.

Table 4.14 level of education versus performance of poultry

Level of education	Performance of poultry					Total
	Starters	Poor/looses	Low/no	Fair/little	Good/high	
No formal education	1	0	0	0	0	1
	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Primary school	3	1	1	4	2	11
	27.35	9.1%	9.15	36.4%	18.2%	100.0%
Secondary school	7	4	4	8	4	27
	25.9%	14.8%	14.8%	29.6%	14.8%	100.8%
Certificate level	4	1	1	8	0	14
	28.6%	7.1%	7.1%	57.1%	0.0%	100.0%
Diploma	5	0	3	7	4	19
	26.3%	0.0%	15.8%	36.8%	21.1%	100.0%
University degree	1	0	0	5	7	13
	7.7%	0.0%	0.0%	38.5%	53.8%	100.0%
Total	21	6	9	32	17	85
	24.7%	7.1%	10.6%	37.36%	20.0%	100.0%

The university degree holders who realize high performances are many, 53%, 7 out of 13. None of them operates at the level of poor or non profit. Diploma holders follow with 21%, or 4 out of 19 of them attaining high performance and like the degree holders none at poor or low profit levels. The cadres of primary and secondary levels of education both experience losses and relatively few at high levels, 18% and 14% respectively. To relate the level of percentage lay (Performance) and level of education, the table 4.15 below paints the picture.

Table 4.15 ratio of eggs to hens in percentage versus level of education

Level of education	Percentage lay
Primary school	75.0
Secondary school	70.8
Certificate level	75.9
Diploma	80.1
University degree	85.0

Once again, it confirms that the highest mean, 85%, of performance occurs among the university degree holder farmers, followed by the diploma holder farmers at 80% and the rest, secondary, primary and non-formal levels do below 80%. In agriculture, education is a key determinant of technology adoption and education levels are highly correlated with technology adoption rates. This in turn increases agricultural productivity, incomes and improved livelihoods (Olwande et al 2009), (Uaiene et al 2009).

4.10 Influence of the cost of Inputs on the Performance of Poultry Projects

Respondents were asked to state whether the inputs are expensive, not expensive or fluctuates. Inputs include the feeds, drugs, services and other consumables in the process of the project management. The table 4.18 below gives the responses given.

Table 4.16 Cost of Inputs

Cost of inputs	Frequency	Percentage
Neutral	1	1.2
Inputs are expensive	75	88.2
Inputs are cheap	3	3.5
Input price fluctuates	6	7.1
Total	85	100.0

From the table 4.16 above, overwhelming majority, 88%, 75 out of 85 agree that the project inputs are expensive. Very few 3.5%, 3 out of 85 disagree with the high cost of inputs. Below is a display of the cost of inputs versus the performance of the poultry projects in Table 4.17

Table 4.17 cost of inputs versus performance of poultry

Cost of input	Performance of poultry					Total
	Starters	Poor/looses	Low/no profit	Fair/little profit	Good/high	
Inputs are cheap	1	0	1	1	0	3
	33.3%	0.0%	33.3%	33.3%	0.0%	100.0%
neutral	0	1	0	0	0	1
	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Input prices fluctuate	1	1	0	2	2	6
	16.7%	16.7%	0.0%	33.3%	33.3%	100.8%
Inputs are expensive	19	4	8	29	15	75
	25%	5.3%	10.7%	38.7%	20.0%	100.0%
Total	21	6	9	32	17	85
	24.7%	7.1%	10.6%	37.6%	20.0%	100.0%

The results from those who state that the inputs are expensive is that majority of them, 39% earn little profits and smaller ratio of 20% earn high profits .Some of them 16% operates at low profits or losses. On the other hand the few who state that the inputs are cheap, none of them, 0%, experience high performance level and great majority 33% realize little profit while an equal number 33% , operates at low or no profits. This group lacks consistency.

In Kenya the prices of poultry feed have gone up sharply; 50 kg of layers mash went up from KSh 2,700 last year to KSh 3200 in May 2001 so the chicken breeder is faced with a double problem, with higher prices for feeds and with lower income through reduced chicken prices. (The magazine for sustainable agriculture in East Africa Nr. 73 June, 2011)

CHAPTER FIVE CONCLUSION AND RECOMMENDATION

5.1 Summary

The statement of the problem that guided the research was based on the findings that there has been a decline in the number of fanners involved in intensive commercial poultry farming in Kericho municipality from the years of 2007 (GOK 2009). The variables were derived from the previous studies by Ochieng et al,(2013), who stated that limited access to institutional devices such as extension, training, credit and veterinary services hampers poultry production in Kenya.

The study focused on the poultry project farmers in Bureti sub county, Kericho County. Questionnaires were used to collect data from 91 sampled farmers and 2 extension officer. The results were analysed and interpreted quantitatively and qualitatively.

The purpose of the study was to investigate the factors influencing performance of poultry farming projects in Buret - Sub County. The main focus was on; the availability of extension services, the market, the level of Education of the Farmer and the cost of inputs.

The respondents were mainly males, 60% and young adults aged (36-45) years. It occurred that layers are the most popular birds compared to broilers and general purpose birds. This implies the farmers have invested huge capital since layers are more capital intensive in terms of feeds and maturity rate to the point of lay.

5.2 The extent to which the availability of extension service influence performance of poultry project

It came out that extension service is critical in poultry management as the farmers who access the service and promptly do better, 33% of them realize a high performance. The availability of this service implies a better control of diseases, timely routine practices such as deworming and debeaking to guard against cannibalism and other vices. These are very important

activities in this undertaking because birds can be swept by a disease at an instant if not vaccinated or they decline to lay completely, if there's a vice.

It was established from the sub- county livestock officer that there are only four extension officers to serve while the recommended number, adequate to offer the extension service is thirty three (33). It is therefore evident that there's a crisis as far as this service is concerned. This explains the poor performance for the majority as shown in table 4.7. This is worsened by lack of resources, poor mobility and lack of access roads in some areas like Arokyet and Siongi locations.

5.3 Influence of product market on the performance of poultry farming project

The results show that the majority, 72% sells to individual and to household where there's very little contractual agreement if any. Such a market is quite unpredictable and the farmer remains uncertain of the market. These adversely affect future and present investments on the project.

Those who sell to hotels only rate the same with those who sell to various outlets- individuals, households and hotels with mean performance of 78% to 80%. On determination of significance level concerning the correlation of the performance and the product market it comes to 0.716 level of significance at 0.05 or 95% confidence level. It is clear mat there is no correlation at all between the two variables. In Buret Sub County, the fanners target local markets and no export or external markets. This explains why there's little influence of the market outlet on the performance the poultry projects.

5.4 Influence of level of education on the performance of poultry project.

Majority of the farmers in Buret Sub-county have formal education. The holders of university degree, majority 53% experience high level of performance with a mean production performance of 84% lay. This is confirmed **by** the fact that diploma holders follow closely with a performance of 80% mean of lay. The rest operates below 80% and experience losses and low profits contrary to what is recorded by the higher cadre of education, degree and diploma holders. It therefore implies mat the well educated group has better skills in crisis management, understanding and well focused. In other words, good managers. They are able to solicit help from various alternative sources, such as private veterinarians, internet, keep reliable records, do a more critical and realistic analysis of the situations.

5.5 Influence of cost input on the performance of poultry project in BSC

The high cost of input is a major undoing in the poultry projects. Feeds constitute up to 70% of the total cost in many African countries (Ngoupayon, 2007). Indeed the prices of feeds have been rising in the recent years while the prices of eggs declining. The result showed that the bulk 88% of the respondents suffer the high cost of feeds after investing heavily on the initial capital. This is the most probable explanation to why poultry projects have not succeeded in Buret in particular and Kenya, in general. The same high cost of feeds affect farmers in Kenya equally.

Recently, the government lifted taxes on farm input including poultry feeds, this never triggered down to the farmer, in fact instead the prices went up with manufacturers and marketers sitting rising costs of raw materials for the feeds.

The bulks 41% of the farmers in Buret are young adults who cannot raise sizable capital. Almost all, 92% of them do the actual rearing and management implying that they have no alternative employment. The high cost of feeds therefore is one single important factor that hinders the immense positive contribution that poultry keeping would have in the livelihoods of the people. In terms of employment creation, diversification of the economic activities, nutritional benefits, poverty eradication and the envisaged contribution towards the attainment of the millennium development Goal (MDG 1)

5.6 Conclusion

From this discussion a number of issues came out distinctly. First, Poultry projects are important sources of employment. It is the owner in person who does the work of keeping the birds raise capital and does the marketing. It is not a peripheral or subsidiary occupation. If only the project would succeed and prosper, it will be an answer to the prevalent unemployment situation in Buret Sub-county.

The high cost of inputs, particularly the feeds, closes out many would be investors in this field and curtails the income and benefits that would accrue to the practicing farmers. This shrinks the scale of operations to bear minimum and therefore falls short of enjoying the economies of scale. This in the long turn will disadvantage the Kenyan poultry farmer in both internal and

external markets, now that there is influx of farm products from Uganda and neighboring countries after market liberalization.

The extension service which includes training, changing attitude and imparting knowledge, provision of credit facilities, veterinary services are almost nonexistent in the Sub-county. With new emerging disease and other complex situation facing the industry, the farmer needs an expert or at least a knowledgeable person to journey together in this venture.

Education to the farmer is paramount as indicated by the good performance of those with high level of education. It enables the farmers to read or listen to instructions and procedures more reliably, to coordinate and program more realistically. These are part and parcel of the poultry project undertaking.

5.7 Recommendation

Both the central and county governments have the leading roles to play to create an enabling environment for the poultry farmers. While the appropriate policy framework could exist as in taxation to relief the farmers of high cost of inputs or subsidy to cushion part of the cost, there must be mechanisms to ensure that this becomes a reality to the farmer in the ground. To ascertain that • this goes down to the indented target and not swindled by other greedy or unfair middle players. This will put the farmer on course to complete favorably in the market. A more serious investment should be made towards the provision of extension services together with both human and physicals resources. A suitable ratio of extension officers to farmers should be determined and actualized. This will avail the service and promptly as it ought to be.

At county level, it is worth considering incorporating the private veterinarians in the provision of service to the farmers. Giving the subsidy and mobilizing them to serve a particular area at a time will increase service availability and reduce the high cost borne by the farmer.

The county government should also invest in the provision of access roads to all comers as this will reduce the cost of transport, encourage more investments in poultry and other sectors and reduce the travel time which can be converted to other productive usage.

Investment on feed factory for the county should be sought, this will make use of the locally available raw materials like maize, reduce the cost of other raw materials by buying in bulk, and to ensure that the specific needs of the fanners are met at a bearable cost. The relevant departments should organize field days, demonstration courses, trainings and seminars in conjunction with feed stockiest, manufacturers and hatchery companies or chick suppliers.

The fanners on their part should come together to form group for marketing and purchasing in bulk. Some farmers in Roret division have tried this successfully. They will reap the benefits by sharing challenges and information. They should target contractual selling in institution that binds and stabilize the market. Together they should explore the external market and reduce over reliance on the local market Though there was no clear correlation between the product market and project performance in Buret, it will still make a great difference to add on what already in place by way of expanding the market. In a group, the farmers can easily solicit funds from microfinance institution and even attract trainers on financial and poultry management.

5.8 Suggestions for further research

It came out that there are numerous factors that affect and hinder the performance of poultry production in Buret. It is therefore suggested that further research be done on other factors such as quality of feeds and chicks. Similar study may also be done in other areas particularly the neighboring sub counties or counties. Research on the prospect of establishing a feed processing plant in the region will go a long way in addressing the high cost of feeds currently born by the young and vulnerable farmer in Buret. A similar research on other fields such as dairy production may be undertaken since the climatic condition in Buret suits these projects, coupled with high demand for dairy products such as milk yet again there's a decline in this venture as the farmers gradually replace pasture crops with tea bushes.

Reference

- A. A Adeyemo & M.P. Onikoyi,(2012).Prospects and Challenges of Large Scale Commercial Poultry Production in Nigeria. *Agricultural Journal*, 7: 388-393.
- Agbamu, J.U., 2005. Problems and Prospects of Agricultural Extension Service in developing countries. *Agric. Exten. Soc. Nigeria*, Ilorin, Nigeria.
- Ahuja, Vinod 2007 Scope and Space for small scale poultry production in developing countries
- ALDERS et al (1977) Village chicken production in Bilene District, Mozambique: Current practices and problems. Paper presented at 1NFPD Workshop and General Meeting, 9-13 December 1997, M'Bour, Senegal
- Alders, R.G. & Spradbrow, P.B. 2000. Introduction. *In* R.G. Alders & P.B. Spradbrow, eds. SADC Planning Workshop on Newcastle Disease Control in Village Chickens. Maputo, Mozambique, 6-9 March. Canberra, Australian Centre for International Agricultural Research.
- Astroth, K.A., & Robbins, B.S. (1987). Recess is over. *Journal of Extension*, 25(3) (Online). Available: <http://www.joe.org/joe/1987fall/a2.html>. Accessed: 01/15/02.
- B. Sonaiya (2007) Toward sustainable poultry production in Africa
- Basnyat, B.B. (1990). *Agricultural Extension System in Nepal*, Development Pioneer Pvt Ltd, Lalitpur, Nepal
- Beatriz P.Del Rosario et al (2008) *Livestock Sector Training Needs Assessment Report For S.E Asia, China and Papua New Guinea*.
- Birkenholz, Robert J. (1999). *Effective Adult Learning*. Danville, Illinois: Interstate Publishers, Inc.

- BONFOH, B. (1997) Les dominantes pathologiques et les contraintes sur la productivité des poulets dans les systèmes avicoles extensifs en Gambie: propositions et solutions. These de Doctorat de 3e Cycle, No. 26, University Cheikh Anta Diop, Dakar, Sénégal
- Brehm, S. S., & Kassim, S. M. (1993). Social psychology (2nd ed.) Boston: Houghton Mifflin company.
- Brunner, E. & Hsin Pao Yang, E. (1949) Rural America and the Extension Service, Columbia University
- Bushnell L D (1945), Poultry Diseases, their Prevention and Control
- Chandler, T. A., & Spies, C. J. (1996). Semantic differential comparisons of attributions and dimensions among respondents from seven nations. Psychological Report.
- Chebat, J. C, Zuccaro, C, & Filiatrault, P. (1992). Locus of control as a moderate variable for the attribution and learning process of marketing managers. The Journal of Social Psychology
- Cornell Cooperative Extension System. (1999). Adult Learning and the Extension Educator. *Facilitating Adult Learning Sourcebook, Unit I*. New York: Cornell University.
- Denis K. Byarugaba, PhD Consultancy Report FAO Kampala
- Dr. Hafez M.H (2013). Current and Future Challenges of Poultry Industry, Economic Research Consortium Conference on Agriculture for Development, May 28th and 29th, Mombasa, Kenya Emir. J.
- Food Agric.(2007). 19 (2): 38-47
- Ensminger, D. (1957), A Guide to Community Development Ministry of Community Development and Cooperation, Government of India.
- European Journal of Business and Social Sciences, Vol. 2, No.4, pp 32-48, JULY 2013.

- Fanelli, G. C. (1977). Locus of control. In S. Fanelli (ed.), *Motivation in education*. New York: Academic press.
- Farrington, J.; I. Christoplos; A. D. Kidd; & M. Beckman. 2002. *Can Extension Contribute to Rural Poverty Reduction? Synthesis of a Six-country Study*. OD1, Agricultural Research and Extension Network, paper no. 123. London
- Gage, N. L., & Berliner D. C. (1992). *Educational Psychology* (fifth ed.). Boston: Houghton Mifflin Company.
- Government of India (1976) *Report on National Commission on Agriculture, Vol. VII, Animal Husbandry*, Ministry of Agriculture, New Delhi.
- Government of Kenya. (2007). *The Vision 2030: A competitive and Prosperous Kenya*. Ministry of Planning and National Development. Government Printer. Nairobi
- Gueye, E.F. 2003b. Poverty alleviation, food security and the well-being of the human population through family poultry in low-income food-deficit countries. *Journal of Food Agriculture & Environment*, 1(2): 12-21.
- Hill, H., (1992). *The widow's revenge*. African Report, Ojo and M.O. Palmers, 1998. *Role of the Public Sector in Agricultural Finance*. West Afr. J. Agri. Econ. <http://www.agrowingculture.org/2013/Q7/investing-m-mdigenous-chicken-for-sustainable-livelihoods/>
- IFAD, 1994 *Training and Livestock Extension for Women*
- ILRI (2010), *Reducing the impact of infectious diseases on village poultry production in Ethiopia*
- Irene Ogali, (2010) *constraints and performance of poultry production system among ffs farmers in Pemba, Tanzania*

Ironkwe, M.O. & F.O. Ajayi, (2008). Assessment of the input of extension services on livestock, production in Omuma local Government Area, River State. *Global J. Agric. Sci.*, 7(1):

Joensen, L. (2002). Intra-household decision-making and livestock investment patterns in Thanh Hoa Province, Vietnam. Department of Economics and Natural Resources,

Jones, G.E. & Garforth, C. (1997) The history, development, and future of agricultural extension in Swanson, B. 'improving Agricultural Extension: A Reference Manual (3rd Edition)" FAO

Kang'ethe F.Muiruri & Willy Muturi (JULY 2013) *European Journal of Business and Social Sciences*, Vol.2, No.4, pp32-48.

Kariuki, W., (2007) *Poultry business in Kenya*, Macmillan Publishers, Nairobi, Kenya,

K.N. Kryger, K.A. Thomsen, M.A. Whyte and M. Dissing (1990) *Network for Smallholder Poultry Development*

Khayyer, M. (1990). Academic failure with the effect of students' and teachers' perception about

Kitalyi A. J. (1998), FAO: village chicken production systems in Africa, AGA, Rome.

Leagans, J.P. (1961), *India's Experience with Training in Extension Education for Community Development*, Cornell University of Illinois, U.S.A. Lordan p (2012) Chief State Veterinarian Export Control M. Niamir-Fuller,(1994) *Women Livestock Managers in the Third World:*

- McArdle, A. A. (2006) *Poultry Management and Production*, Angus and Robertson, Sydney, Australia,
- McCollaun, B. & Lester, D. (1995). Authoritarianism, anti-authoritarianism, and locus of control. Psychological Report
- Ministry of Animal Resources and Fisheries (MARF) of South Sudan(2011), Marial Lou Livestock Training Centre.
- MOREK1, J.C. (1997) Small-scale poultry production systems in Serowe-Palapye Subdistrict (Botswana). M. Sc.Thesis, University of Melbourne, Melbourne, Australia
- Nambura, P.N., J. Meers, P Spradbrow (2007), Survival of envirulent thermostable Newcastle disease virus (Strain 1-2)
- National Livestock Policy of (2011).Livestock Extension Service Implementation Guidelines. Tanzania [www.mifugo.go.tz/. /LIVESTOCK%20QEXT%20GUIDELINE](http://www.mifugo.go.tz/.%20LIVESTOCK%20QEXT%20GUIDELINE)
- Ngoupayou J.D. (2007) Exploitation De La Poule Locale (*Callus gallus*) En Zone De Foret Humide Du Cameroun, Vol 55, Nol Nurmi, J. E. (1992). Cross-cultural differences in self-serving bias: Responses to the attribution style questionnaire by American and Finnish students. The Journal of Social Psychology.
- Oladele, O.I., (2004). Livestock farmers' awareness, access and benefits of Veterinary Extension Services in Southwestern, Nigeria. Livestock Research for Rural Development, 16(6)
- Olive M. Mugenda & Abel G. Mugenda (2003); Research Methods: Quantitative and Qualitative Approaches: Nairobi: ACTS press.
- Olowu, T.A., (1990). Report of Agricultural News in Nigeria News papers. Journalism Quarterly

Olwande J., G. Sikei and M. Mathenge. (2009). Agricultural Technology Adoption: A Panel Analysis of Smallholder Farmers' Fertilizer use in Kenya. Paper presentation at the African

Ajayi, M.T. and A. Aphunu, (2008). Farmers' Perception of the Extension Agents' Effectiveness and Introduction of Extension Reforms in Delta State, Nigeria Asset Series C,

Rogers, Alan. (1996). *Teaching Adults*. New York, NY: Redwood Books

Roling, Niels (1988) *Extension Science - Information Systems in Agricultural Development*, Cambridge University Press, Cambridge, UK.

Rutatora, D. F., and A. Z. Mattee Major. (2001). Agricultural Extension Providers in Tanzania. *African Study Monographs*, 22(4): 155-173, December 2001. Retrieved on November 1, 2011 from http://www.africa.kvoto-u.ac.ip/kiroku/asm_normal/abstracts/pdf/22-4/155-173.pdf

S.D.Mack & S.Fernandez-Baca(2004)Strategies for effective extension services to guide the advancement of animal agriculture in developing countries.

Slavin, R. E. (1986). *Educational psychology: Theory into practice*. New York: John Hopkins university press.

Sonaiya, B., (2004). *Strategies for Sustainable animal agriculture in Developing countries* Retrieve

February 2, (2005) from <http://www.poultrvsite.com>. The magazine for sustainable agriculture in East Africa Nr. 73 June, 2011

Trish Silkin & Florence Kasirye (2002). *Veterinary Service in The Horn of Africa*

- Tuitoek, J. K., Chemjor, W., Ndegwa, J. M, and Ottaro J. M, (1990). Morphological Characteristics and protein requirements of indigenous Kenyan Chicken. In: proceedings of the 6 biannual Kenya Agricultural Research Institute (KARI) Scientific Conference 9-13 November 1998, pp 1-9. Nairobi, KARI.
- Uaiene, R.N., C. Arndt & W.A. Masters.(2009). Determinants of agricultural technology adoption in Mozambique. Discussion paper No. 67E. January 2009. National Directorate of Studies and Policy Analysis. Ministry of Planning and Development. Republic of Mozambique.
- UNESCO. (1975). Final report for international symposium for literacy. *Persepolis, Iran*
URL: <http://www.eibss.com/recent.aspx>
- Van den Ban, A.W & Hawkins, H.W. (1996) Agricultural Extension, 2nd Edition, Blackwell Science, London.
- Weiner, B. (1985). *An attribution theory of achievement motivation and emotion.*
Psychological Review
- WSU Extension (2014) Livestock Advisor Volunteer Program Texas A&M AgriLife Extension Service. Agriculture and Life Sciences Building | 600 John Kimbrough Boulevard, Suite 509 j 7101 TAMU | College Station, TX 77843-7101 |
- Yahaya, M.K., (2002). Outreach Communication Strategy in Community Mobilization for Reproductive Health Education in Niger state of Nigeria. J. Social Sci.
- Yahaya, M.K., (2003). Development Communication: Lessons from Change and Social Engineering Projects. Coiporate Graphics, Ibadan, Nigeria.

Yongolo et al 2002, 'Newcastle disease and Infectious bursal disease among free range village chickens in Tanzania', in *Characteristics and parameters offamily poultry production in Africa.*, IAEA, Vienna p. 107-116, viewed 28 May 2011, from <http://www-naweb.iaea.org/nafa/apli/public>

Zamani, G. H. (1992). Motivation theories and their application in agricultural extension and education. Proceeding of the sixth national scientific agricultural extension seminar Teheran: Agricultural extension organization. (In Persian).

APPENDICES

APPENDIX I

Poultry population - Bureti District (2013)

Division	Indigenous birds	Layers	Broiler s	Turkeys	Ducks	Geese	Total
Bureti	147821	41795	8429	198	2968	25	201236
Cheborge	92750	8580	8000	90	864	22	110306
Roret	40950	6750	2080	90	163	20	50053
Total	281521	57125	18509	378	3995	67	361595

Source: Strategic plan, annual report, (BSC 2013)

Poultry distribution per division

Division	Population of poultry	Number of poultry farmers households	Sample ratio	Sample size
Bureti	50224	148	0.3	44
Cheborge	16580	92	0.3	28
Roret	8830	62	0.3	19
Total	75634	302	0.3	91

APPENDIX III

Transmittal Letter

Kipkorir Kirui
P.O. Box 60 (20210)
Litem
Cell phone: 0725 166874
Email: pkorirk@gmail.com,
26th April, 2014

The District Livestock Officer,
Bureti Sub-County
P.O. Box
Litein

Dear Sir/Madam,

RE: REQUEST FOR RESEARCH DATA COLLECTION

I am a student undertaking Master of Arts (MA) in project planning and management at the University of Nairobi. As part of my assessment, I am required to submit a research project. Consequently, I have written a proposal for a research on 'influence of extension services on the performance of poultry projects in Bureti Sub County, Kericho, Kenya.

I have, therefore, designed a questionnaire to enable me collect the relevant data and wish to seek your authority to collect the data from the sampled farmers of poultry project and the extension officers as well.

The information obtained shall be strictly used for academic purposes only and will be availed to you on request.

Your cooperation is highly
appreciated Thanks in advance

Kipkorir K.

APPENDIX IV

Respondents questionnaires

I am current a student in the university of Nairobi pursuing a master degree (MA) in project planning and management. My research work is to find the 'influence of extension service in the performance of poultry projects in Bureti sub County; of Kericho County.

I wish to humbly seek assistance from you for this research as a respondent. Your information is geared towards improving the performance of poultry projects among the farmers of Bureti sub-county in particular and Kencho County as well

The information you give will be treated with utmost confidentiality. Kind provides the information sought to the bets of your knowledge and ability.

Please find time to diligently fill in the questionnaire and your endeavour and cooperation will be highly appreciated.

Thank you

Most sincerely.

SECTION A

DEMOGRAPHIC CHARACTERISTICS

Please answer the following questions by putting a tick (*S*) in the appropriate spaces

1. Your name (**not a must**)

2. Gender

(a) Male () (b) Female ()

3. Age

(a) 18-25 years () (b) 26-35 years () (c) 36-45 years ()

(d) 46-55 years () (e) over 55 years ()

4. (a) Which birds do you keep?

(i) Layers () (ii) Broilers () (iii) General purpose () (iv) any other, state

- (b)
- i. How many layers (if any) do you keep?
 - ii. How many eggs do you get by day /week?
 - iii. How many broilers (meat birds) if any do you keep?
 - iv. How long, in days, do they take to reach the market size?..... days.
- (c) Normally what is the range of those that survive to the age of marketing?
Between.....and.....(in numbers)

5. Your highest level education attained

- (a) Did not attend any formal school ()
- (b) Primary school (class 1-8) ()
- (c) Secondary school education (Form 1-4) ()
- (d) Certificate ()
- (e) Diploma ()
- (f) University education ()

6. For how long have you been involved in poultry production projects)

- (a) Less than 1 year ()
- (b) Between 1-3 years ()
- (c) Over 3 years to 6 years ()
- (d) Over 6 years ()

7. What is your role in poultry projects production?

- (a) District livestock production officer ()
- (b) District veterinary officer ()
- (c) Extension service officer ()
- (d) Private veterinarian ()
- (e) Farmer ()
- (t) A care taker employee in the farm ()
- (f)

SECTION B

Please consider the statements below and tick (S) in the appropriate column:

Use key SA - Strongly Agree A-Agree N-Neutral, D-Disagree
SD - Strongly Disagree

1 (a) Based on your experiences in running the Poultry Project business so far and the actual condition of the business, please indicate your opinion regarding each statement.

Statement	SA	A	N	D	SD
Distribution channel of my products is already in place					
Market potential of my products is promising					
Searching for new market for my products is not so difficult					
Marketing of ray products is well-planned					
I have access to information on market/consumer of my products					
Search for market is difficult					

(b)

Statement	SA	A	N	D	SD
I usually sell my poultry product to individuals					
I usually sell my poultry product to hotels					
I usually sell my poultry product to institutions					
I usually sell my poultry product to house holds					
I usually sell my poultry product through exports					

2. Availability of extension service to poultry farming projects

Statement	SA	A	N	D	SD
Responds within 2 hrs					
Responds after 2 hrs but within the same day					
May take 2 days or more to respond					
Never shows up any day					

3. Please state your opinion on the prices of project inputs such as feeds and drugs

Statement	SA	A	N	D	SD
All inputs are very expensive					
Most, but not all inputs are very expensive					
Few inputs are expensive					
Most inputs are very expensive					
Inputs are very expensive					
Inputs are cheap					
Inputs prices fluctuate					

4 please indicate your options on the price of poultry products egg and meat

Statement	SA	A	N	D	SD
Prices are attractive (quite high)					
Prices are moderate					
Poor prices are offered in the market					
At times I sell at throw away prices					
Prices always fluctuate (unpredictable)					
Prices are fairly stable					

5. Sustainability of poultry projects

Statement	SA	A	N	D	SD
As a farmer, you realize a high profit from this project, after deduction of every cost of production					
That the profits/income is not as high as expected					
That the project hardly break even, or struggle to cover the running costs					
That the project is running at losses more often					
You have not keenly focused on profits / income					

TO BE FILLED BY EXTENSION SERVICE OFFICER

6. (a) Poultry extension services for the improvement of the poultry projects

Statement	SA	A	N	D	SD
You are involved in training, practical education and educational hours aimed at improving poultry projects					
You normally participate in poultry extension workshops and seminars meant to equip the farmers with skills on how to manage the poultry projects					
You are involved in mobilization campaign that are aimed at sensitising of farmers on new technologies and disease control					

b (i) How many extension officer are there for the county?.....

(ii) In your opinion is this number adequate? YES /NO

(iii) If it is inadequate, what number would be reasonably sufficient?.....

(iv) How do you normally deal with the shortage? Briefly explain.....

.....

(v) Briefly state any major challenge, if any, that may hinder the provision of extension service in

Bureti Sub County

TO BE FILLED BY BOTH EXTENSION SERVICE OFFICER AND THE FARMERS

7. In your opinion, make your observations and suggestions over the following issues:

i. The most critical challenges to poultry projects

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

ii. Suggest a possible solution to (i) above

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

iii. What would the government do to uplift the performance of poultry projects general

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

iv. What would farmers / project owners do improve the performance of these projects

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

v. Any other stakeholders, e.g. NGOs, financial institutions and other organization

.....
.....

Thank you so much