INVESTIGATION INTO THE EFFECTS OF MARKETING FACTORS ON THE PRODUCTION OF RABBITS
(A Case of Selected Breeders in Ruai and Mbotela, Nairobi)

By

GACHANJA PETER MUGO
D53/ 13189/05

RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENT FOR THE AWARD OF MASTERS OF BUSINESS ADMINISTRATION (MARKETING OPTION) DEGREE OF KENYATTA UNIVERSITY.

MAY 2011
DECLARATION

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

SIGNATURE ___________________________ DATE _______25/5/2011_______

GACHANJA PETER MUGO

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

SIGNATURE ___________________________ DATE _______26th May, 2011_______

CHRISPEN MAENDE

SIGNATURE ___________________________ DATE _______May 26, 2011_______

SHADRACK BETT
CHAIRMAN
BUSINESS ADMINISTRATION DEPARTMENT
DEDICATION

I dedicate this research project to the memory of my late parents, David Gachanja and Hannah Nyambura, whose commitment and sacrifice taught me the value of education.

And to my loving wife Mary, and daughter Prudence, the two women I most cherish in life; and to David Gachanja Jr. my beloved son.
ACKNOWLEDGEMENT

I would like to thank God for granting me good health to undertake this postgraduate course at Kenyatta University.

Special acknowledgement goes to my supervisor Mr. Chrispen Maende. His patience and well thought out challenges has enabled me to develop a sense of academic ego putting interminable efforts.

I warmly acknowledge my dear family members who encouraged me in the course of my studies; my wife Mary, daughter Prudence and son David for their patience, support and sacrifice as I pursued my studies.

Last but not the least; I appreciate all my friends and colleagues for their words of wisdom and general outlook towards life, which gave me the motivation to work harder.
ABSTRACT

Rabbits are raised for a variety of reasons. As a source of food, rabbits produce white meat that is fine-grained, high in protein, low in fat, highly palatable, low in Cholesterol, and can be substituted for poultry in most recipes. Rabbit’s carcasses are only 20 percent bone. For non food purpose, the high quality rabbit’s skins are used in fur garments and trimmings. Medical and cosmetic researches also require a large number of rabbits each year. Also, rabbit’s fur is used in coat liners when weaved with other wool, and the pelts (skin) are used for making children’s shoes, ladies purses, toys, gloves, pillow cases, warm coats, and caps. Rabbits are also used as laboratory stock for experiments, their manure is rich in humus, and generates income through the sale of rabbits and its products. Despite of all these, the documented data shows that the production and marketing of rabbits in Kenya is still very low.

The main objective of the study was to investigate the effects of marketing factors on the production of rabbits. Specifically, the study intended to; identify the marketing factors that influence the production of rabbits, determine the effects of the identified marketing factors on the production of rabbits and suggest ways in which these marketing factors might be utilized to improve rabbit production.

The researcher employed a descriptive research design. The target population was 71 rabbit breeders in Ruai and Mbotela regions in Nairobi. This comprise of 56 rabbit breeders from Ruai and 15 breeders from Mbotela. The sample consisted of 42 respondents representing 60% of the target population. The researcher used stratified random sampling to select the respondents. Data was collected using questionnaires which were administered through the “drop and pick latter method”. Data was analyzed using descriptive statistics such as frequencies, percentages, mean score and mode. Analyzed data was presented in tables, charts and graph.

The researcher found that The marketing factors that that influence the Level of Rabbit Production include Promotion and advertising, Market Prices, Competition from other meats, Consumer demand, Distribution and Product diversification. It was also revealed that these factors influence production of rabbits at different extent. Promotion and advertising and market prices affect production of rabbits to a very high extent while
competition from other types of meat, consumer demand and distribution affect rabbit production to a high extent.

The researcher recommended that rabbit breeders must be trained on how to handle the identified marketing factors. It is further recommended that rabbit breeders must consider these factors since they influence rabbit production either to a high extent or a very high extent.
# TABLE OF CONTENTS

DECLARATION ............................................................................................................................. ii  
DEDICATION ............................................................................................................................... iii  
ACKNOWLEDGEMENT ............................................................................................................... iv  
ABSTRACT ............................................................................................................................... v  
TABLE OF CONTENTS ............................................................................................................. vii  

CHAPTER ONE: INTRODUCTION ............................................................................................... 1  
1.1 Background Information .................................................................................................... 1  
1.2 Statement of the Problem .................................................................................................. 3  
1.3 Research objectives .......................................................................................................... 4  
1.4 Research Questions ......................................................................................................... 4  
1.5 Justification of the study .................................................................................................. 5  
1.6 Scope of the study ............................................................................................................ 5  
1.7 Limitations of the study .................................................................................................... 5  

CHAPTER TWO: LITERATURE REVIEW ................................................................................. 7  
2.1 INTRODUCTION ................................................................................................................ 7  
2.2 General literature review ................................................................................................. 7  
2.2 Theoretical Literature Review ......................................................................................... 12  
2.4 Conceptual Frame Work ................................................................................................. 20  

CHAPTER THREE: RESEARCH METHODOLOGY ................................................................ 21  
3.0 Introduction ....................................................................................................................... 21  
3.1 Research Design ............................................................................................................. 21  
3.2 Target Population ........................................................................................................... 21  
3.3 Sample Design ............................................................................................................... 22  
3.4 Data Collection Instrument and Procedure ................................................................. 22  
3.5 Data Analysis and Presentation ....................................................................................... 23  

CHAPTER FOUR: DATA ANALYSIS INTERPRETATION ....................................................... 24  
4.1 Introduction ....................................................................................................................... 24  
4.2 Response rate .................................................................................................................. 24  
4.3 Respondents Profile ....................................................................................................... 24  
4.4 Marketing Factors Influencing the Level of Rabbit Production .................................... 27
4.5 The Extent to Which Marketing Factors Influencing the Level of Rabbit Production .................................................................................................................................................. 34

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION ........................................................................................................................................ 36

5.1 Introduction ................................................................................................................................................................................. 36
5.2 Discussion of findings .................................................................................................................................................................... 36
5.3 Summary of findings ..................................................................................................................................................................... 37
5.4 Conclusions ............................................................................................................................................................................. 38
5.5 Recommendation ..................................................................................................................................................................... 38
5.6 Recommendation for further Study ......................................................................................................................................... 38
CHAPTER ONE
INTRODUCTION

1.1 Background Information

Rabbits are raised worldwide for a variety of reasons. In Europe and Asia rabbits are important sources of food. Rabbits produce white meat that is fine-grained, high in protein, low in fat, highly palatable, low in Cholesterol, and can be substituted for poultry in most recipes. Rabbit’s carcasses are only 20 percent bone. In the United States rabbits are raised predominantly for non food purpose. High quality rabbit’s skins are used in fur garments and trimmings. Medical and cosmetic researchers also require a large number of rabbits each year. Many people raise rabbits for show or as pets (Randy, 1990)

Major rabbit conferences have been held in numerous developing countries, which have addressed the potential and the problems of rabbit project development in Third World countries. For example, in 1978 the African Rabbit Husbandry Workshop was conducted in Morogoro, Tanzania, where scientists, veterinarians, educators and project managers from over ten African countries participated. Major conclusions and recommendations concerning rabbit production were developed on pertinent topics of breeding, feeding, health, housing and equipment, and marketing. In addition, several regional rabbit conferences and courses have been held throughout many parts of Asia, Latin America and the Caribbean, the Mediterranean and in the Middle East.

In 1980, the ministry of livestock development (MOLD) initiated a rabbit production development program whose ultimate aim was to make farm household self-sufficient in the supply of meat and animal proteins by promotion of rabbit keeping into viable, low cost, small scale backyard farming systems. It also aimed at developing rabbit production into a profitable commercial enterprise which can contribute positively to bridge the meat deficit in the country, to generate farm income, jobs, and foreign exchange through sales of meat and skins. (MOLD report 1983). Under this programme, a national rabbit breeding centre was established at Ngong, plus twenty-two (22) regional multiplication units all over the country as public farmers’ training centers (FTC’s). However, at present, all the regional multiplication centers have since closed down with the exception
of the Ngong centre. (Annual report, 2004). The government also offers extension support services to the farmers, but it’s not involved in the marketing processes of rabbits.

The rabbits offer an alternative to other meat producing animals in our farms especially taking into consideration the following reasons why rabbit production should be encouraged in our country: rabbits grow fast especially if fed well reaching maturity at 5 months and slaughtering weight at 3 months; they require less land (space) with diminishing land size; therefore can be kept at the backyard; the rabbits are very adaptable to different feeding and holding conditions. They can derive entirely on greens only; they are prolific and can give 30 kindling a year; They require simple buildings (structures); their food conversion efficiency is high at food conversion ratio of 4:1; rabbits produce high quality meat compared to other animals. It is easily digestable with less fat and slight amount of uric (the cause of gout) formed through metabolization. Therefore it is suitable for a special diet. It also has fewer problems of cholesterol fats; and rabbit production in the rural areas provides an income through the sale of meat, manure, fur and laboratory animals.

Rabbits are used as a source of food for human consumption which is good in high quality protein, less fat, its highly digestible for the sick, it is more densely textural than chicken meat, the meat to bone ratio is high, and the fats of rabbits is very low in cholesterol.

Also, rabbit’s fur is used in coat liners when weaved with other wool, and the pelts (skin) are used for making children’s shoes, ladies purses, toys, gloves, pillow cases, warm coats and caps. Rabbits are also used as laboratory stock for experiments, their manure is rich in humus, and generates income through the sale of rabbit and its products.

Rabbits keeping is generally easy, as they grow fast especially if well fed, are highly prolific, require less space and simple buildings as compared with other farm animals. However the number of people who keep rabbits, and the population of rabbits kept, to date is quite low. (Annual report 2004)
Mureithi (pc) (2007) outlines the key problems facing the rabbit industry in Kenya as scarcity of input especially quality breeding stock, feeds and building materials, lack of proper established channels in marketing the rabbits and rabbit byproducts, insufficient knowledge in rabbit management by the rabbit keepers and technical staff, reluctance by some ethnic group to keep or handle rabbits because of their traditions, taboos, religion and customs, among others.

Some of these factors have been studied to find out how they influence rabbit production in Kenya. Hassane (1999) concluded that the main factors that hinder the production of rabbits in Kenya are breeds, housing, feeding, marketing, disease and pests. He further recommended that the identification and resolution of the impact of consumer factors (Marketing factors) on the performance of businesses that are related to rearing would go a long way in enhancing the income status of those involved in rabbit rearing.

1.2 Statement of the Problem

In recent years there has been rising global awareness on the virtues of rabbit meat production in developing countries as an alternative means of alleviating world food shortages. This basic understanding is largely attributable to the rabbit’s high rate of reproduction and early maturity, rapid growth rate, high genetic selection potential, efficient feed and land space utilization, limited competition with humans for similar foods and high quality nutritious meat, as documented by Cheeke (1980).

According to FAO (1981), by the year 2000 world nourishing needs will be satisfied for one third of the human population by pork, poultry and rabbit meat. This projection well demonstrates the major role of the rabbit in supplying food for human subsistence needs in an overpopulated world.

Despite of all these, the documented data shows that the production and marketing of rabbits in Kenya is still very low. More so, the FTC’s established by the government in the past years as breeders of parental stock are now collapsed. Further the farmers, who
in most cases have a low literacy level, are expected to look for and market their outputs on their own as the government is not involved in the marketing of rabbits.

The role played by marketing in any enterprise cannot be underestimated. In fact, it's one of the key factors that determine the success of every business enterprise, whether in agribusiness, manufacturing or service provision.

The research aimed to investigate on the effects of marketing factors on the production of rabbits in Kenya. It further sought to find out how marketing can contribute to the development and growth of rabbit keeping in Kenya.

1.3 Research objectives

1.3.1 General objective
The study aimed to investigate the effects of marketing factors on the production of rabbits in Kenya.

1.3.2 Specific objectives
Specifically, the study intended to;
   i) Identify the marketing factors that influence the production of rabbits.
   ii) Determine the extent to which marketing factors affect production of rabbits.
   iii) Suggest ways in which these marketing factors might be utilized to improve rabbit production.

1.4 Research Questions

The study sought respond to the following research questions:
   i) Which marketing factors influence the production of rabbits?
   ii) To what extent do marketing factors affect the production of rabbits?
   iii) How can these marketing factors be utilized to improve rabbit production in Kenya?
1.5 Justification of the study

The finding of this study is of great importance to rabbit farmers, entrepreneurs and the government. The literacy level of most farmers and entrepreneurs is low; especially in a specialized field such as marketing. The study sought to establish the various marketing requirements for effective production of rabbits and the findings will enable the farmers and entrepreneurs to know which marketing tasks and strategies to put in place if they will have to succeed in their rabbit keeping enterprises. It will also equip them with knowledge and techniques of handling the marketing challenges.

Today, the government through the MOLD is involved in the breeding activities at Ngong multiplication centre, after which the parental stock is sold to interested farmers or entrepreneurs. It also provides extension support to the farmers at the grass root. Thus the government is not directly involved in the production of mature rabbits for consumption. Further, it does not play any role in the marketing of rabbits. The finding of this research is of importance to the government as this will enable the government to make appropriate policies, and allocate resources of rabbit projects, both as an alternative agricultural enterprise and as small business enterprises.

1.6 Scope of the study

The study was based on the existing rabbit breeders in Mbotela and Ruai regions of Nairobi. The two regions were selected purposively for this study. These private rabbitries are agribusiness enterprises, privately owned and managed by independent farmers. They keep rabbits for business purposes chiefly to maximize their profits. Their goal is to produce and market as many rabbits as possible.

1.7 Limitations of the study

While undertaking this study, the researcher faced some limitations. First and foremost, the information sought relates to agribusiness enterprises and the owners or managers
were hesitant to release it fearing that it might get to their competitors. This was overcome by convincing them that the data will be treated with utmost confidence.

Secondly, the fact that the entrepreneurs interviewed are small agribusiness, individual farmers, most of them do not keep full records of all their operations. This means that there were some incomplete data. These were however completed through additional information provided orally.
CHAPTER TWO
LITERATURE REVIEW

2.1 INTRODUCTION
Livestock sector contributes greatly to the economy of Kenya. This sector can satisfy the requirement for quality food (animal protein) to the population that is increasing rapidly and can also contributes in the creation of employment opportunities. The livestock sector is mainly based in the production of meat that is derived from cattle, goat, sheep camels and chicken and other by products (milk, hides and slaves, wool, bones, etc). With exception of milk producing cows that are kept in – door, most animals are left to graze extensively, thus contributing to the environmental degradation and conflict among communities. Large animals take time to produce and satisfy the need of the population in animal protein. The rearing and benefit of small mammals such as rabbits as small – scale business could be exploited (Hassane 1999)

2.2 General literature review
Originally rabbits were reared primarily at the national Rabbit breeding centre at Ngong’ farmers training centre (FTC) these imported rabbits, New Zealand white, Californian and Flenish Giants were to serve as a nucleus for pure breed rabbits which were eventually sold to local breeders for the purpose of improving the production of indigenous breed as well as to other users. Over the years, the FTC has given training opportunities to the farmers to learn and update themselves about day to day rabbit farming technologies. (Annual Reports).

International centre of insect physiology and Ecology (ICIPE) was established in 1973, to adopt a different approach, if the needs of the resource – poor rural communities in Africa were to be met and satisfied. The most urgent object of ICIPE was to find non chemical technologies for the control of agriculture pests and diseases vectors. This would ensure food security, in creased live stock production, safeguard human health and improve the income of the farmers (ICIPE) annual report 1994, 1995, 1997). To be able to carry out their researchers in the best possible conditions, ICIPE required a large number of animals and insects for their experiments. These animals required included
mice, rats and rabbits. These were reared and kept at the animals rearing and quarantine unit (ARQU) – a support unit that supply insects and small mammals to researchers of the centre.

Likewise, the International livestock Research institute (ILRI) was established in 1974. Its main purpose was the improvement of livestock productivity and the development of animal disease diagnostic tools as well as control. To carry out effective research, scientists at ILRI require rabbits among others for their experiments. Furthermore rabbits are raised for food (white meat) that is high in protein, low in fat, highly palatable, low in cholesterol and can be substituted for poultry in most recipes. They are also kept for fur, and as pets. (Randy 1990)

To promote the production of rabbits, the government established the rabbit production development program in 1980, under the Ministry of Livestock development (MOLD). The ultimate aim of the program was to make farm households self-sufficient in the supply of meat and animal proteins by promotion of rabbit keeping into viable, low cost, small-scale backyard farming systems. It also aimed at developing rabbit production into a profitable commercial enterprise which can contribute positively to bridge the meat deficit in the country, to generate farm income, jobs, and foreign exchange through sales of meat and skins. (MOLD report 1983)

To achieve these objectives, the program was to enhance the national rabbit population by increasingly the number of rabbits, particularly on farms too small to warrant the keeping of bigger livestock like cattle, sheep, goats and pigs. It also intended to encourage farmers to set up commercial rabbit units, particularly in the vicinity of larger urban markets. This led to the establishment of the national rabbit breeding centre at Ngong, and other 22 regional multiplication centers all over the country.

Today, most of these multiplication centers have collapsed, except the Ngong centre but its operations are quite low (Mureithi, pc). Furthermore, only a handful of farmers rear rabbits on commercial basis. Some organizations such as children homes keep rabbits as
pets and as a source of meat. Research organizations rear rabbits for experimentation purposes. A few hotels and butcheries do sell rabbit meat but on low scale (ibid)

2.2.1 The importance rabbits as business ventures
While the human population is growing in the developing countries, the daily requirements of animal protein for humans keep on increasing. The productive rates of other livestock (Cattle, sheep pigs) are relatively slow. Due to some religious believes and taboos, proteins derived from animals such as pigs and cattle are not consumed by many people in developing world. Small mammals such as rabbits have a number of characteristics that are advantageous in the small holder production system. Rabbits produce meat, hides and fur that can be used effectively to generate income. The entrepreneurs who are keen on exploiting the local and the export market in the developed countries (Table 2.1) where the demand for rabbit meat is very high can also take advantage of rabbit rearing and create employment (Wilson 1996)

Table 2.1
Consumption of rabbit meat in some selected European countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Total consumption Tones</th>
<th>Consumption Head/ Kg/wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>500,000</td>
<td>8.0</td>
</tr>
<tr>
<td>Hungary</td>
<td>300,000</td>
<td>3.0</td>
</tr>
<tr>
<td>Spain</td>
<td>150,000</td>
<td>1.25</td>
</tr>
<tr>
<td>Great Britain</td>
<td>20,000</td>
<td>0.40</td>
</tr>
<tr>
<td>Eire</td>
<td>16,000</td>
<td>0.18</td>
</tr>
<tr>
<td>Italy</td>
<td>100,000</td>
<td>1.40</td>
</tr>
<tr>
<td>Portugal</td>
<td>10,000</td>
<td>1.0</td>
</tr>
<tr>
<td>Greece</td>
<td>9,000</td>
<td>1.20</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>9,000</td>
<td>1.05</td>
</tr>
<tr>
<td>Switzerland</td>
<td>8,000</td>
<td>1.20</td>
</tr>
<tr>
<td>Germany (west)</td>
<td>6,000</td>
<td>0.9</td>
</tr>
<tr>
<td>Benelux</td>
<td>5,000</td>
<td>1.35</td>
</tr>
<tr>
<td>Scandinavia</td>
<td>5,000</td>
<td>0.95</td>
</tr>
</tbody>
</table>

(Wilson 1996 reported in livestock production systems)
Rabbit's meat is of high quality, being high in protein and low fat content. It is very much preferred to other source of animal proteins (Table 2.2). Rabbit Meat as shown in table 2.2 is as a good as chicken.

Table 2.2

<table>
<thead>
<tr>
<th>Source of meat</th>
<th>Protein %</th>
<th>Fat %</th>
<th>Mineral %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabbit</td>
<td>21.0</td>
<td>6.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Beef</td>
<td>18.3</td>
<td>18.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Mutton</td>
<td>15.6</td>
<td>30.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Pork</td>
<td>13.3</td>
<td>34.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Chicken</td>
<td>19.5</td>
<td>2.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Duck</td>
<td>18.3</td>
<td>19.0</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Source (Wilson 1996)

The soft luxurious fur of rabbit (Angola wool) is very important and has a special position in the world textile trade. It is best in the world & the demand is high. China is the largest producer at about 2000 tones / year. Argentina, Korea and India also produce small amounts.

Rabbit are also produced in large number for laboratory use, especially in the field of biochemical research.

Rabbit manure can be used as fertilizer for crops due to its very high nitrogen content. Besides these, rabbit rearing may be a profitable business that can help reduce unemployment and create new breed of entrepreneurial for the country. Experiences in Australia showed that the commercial use of rabbit could be very lucrative.
2.12 Marketing of rabbit

According to Kotler (2000) marketing consist of all human and social activities that facilitate the exchange process. He further said that it is the process through which companies create value for customers and build strong customer relationships in order to capture value from customers in return. Broadly defined, marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging value with others.

According to Kotler, the marketing process consists of five steps. First, understanding the market place and customers needs and wants. This is followed by designing a customer-driven marketing strategy. The third step involves constructing a marketing program that delivers superior value to the customers. Fourthly, building profitable relationship and create customers delight and lastly capture value from customers in return to create profits and customer quality.

Thus a company's marketing strategy outlines which consumers the company will serve, and how it will create value for these customers. Next, the marketer constructs a marketing program that will actually deliver the intended value to target customers. The marketing program builds customer relationships by transforming the marketing strategy into action. It consists of the firms' marketing mix, a set of marketing tools the firm uses to implement its marketing strategy.

The major marketing mix tools are classifieds into four broad groups, called the four P's of marketing, i.e. product, price, place, and promotion. To deliver on its value proposition, the firm must first create a need-satisfying marketing offer (product). It must decide how much it will charge for the offer (price) and how it will make the offer available to target consumers (place). Finally, it must communicate (promotion) with target customers about the offer and persuade them of its merit, (ibid)

For a rabbit producer, he must first decide which need he intends to meet in the market, which is need for meat, fur, research, and/or pet. He must then decide on how much to charge for every rabbit supplied, either per unit or per kilogram. The breeder must also
decide on the mode of distribution. He may choose to deliver them directly to the consumers (direct marketing) or use intermediaries such as butcheries and hotels (indirect marketing). Further he has to choose to sell his rabbits individually, or join others in a cooperative and market their output jointly. The producer must also communicate about his products to the potential and current customers and intermediaries.

2.2 Theoretical Literature Review
Randy (1990) reported that the single most important step before building a rabbitry or beginning commercial rabbit production is to develop a market for the rabbits. In most cases producers must develop their own markets. Rabbits produced for their meat must have good loins, shoulders, hips and pelts. The fur market requires that the rabbits have meaty carcasses and clean, top-quality pelts. A large number of pelts are usually required to obtain a satisfactory price. Research laboratories may specify rigid guidelines for their rabbits. Laboratories may require a specific sex, size, age or breed. The market for rabbits raised for research is generally handled on a contract basis.

He added that a well-planned marketing strategy is essential for a successful agricultural business. When raising rabbits for meat, consideration must be given to the availability of processing facilities, market requirements, transportation costs, and potential buyers. Buyers and processors of meat rabbits may have specific requirements such as breed, age, color and overall quality. Restaurants, supermarkets, wholesalers, custom meat stores, and individual buyers are the primary purchasers of rabbit meat. Other markets for rabbits include the pet industry and research sectors. When marketing breeding stock, it is important to establish a reputation for high-quality animals. Demand for breeding stock is developed by the maintenance of accurate and detailed production records.

Lukefar and Goldman (1985) conducted a technical assessment of production and economic aspects of small-scale rabbit farming in Cameroon. They concluded that the existence of viable and well established markets is always a real economic incentive towards farmers embarking upon any alternative agricultural enterprise. Far too many otherwise sound rabbit projects have failed due to inadequate marketing opportunities for rabbit meat. This can largely be prevented through prior marketing research and
evaluation conducted in the feasibility and/or design stage of the project. Invariably, such factors as low consumer demand, insufficient promotion, unsteady product supply, unreasonable prices, competition between other meats, lack of product diversification and poorly developed marketing channels, may explain limited market success.

In areas where rabbit meat is not widely consumed or marketed it is imperative to initiate a rabbit project on a small-scale, backyard family basis, since the ultimate goal of rabbit rising is to provide more meat at the family level. In time, rabbit sales to neighbors and businesses in the rural community may develop. If such success is met it may be possible to expand community markets to urban areas, involving marketing research and development, provided a sufficient and increasing volume of rabbit meat supplies exist. Once links between rural community and urban markets become firmly established, the development of large-scale commercial rabbit operations may be encouraged. In time, a more sophisticated market infrastructure may involve product diversification (e.g.: breeding stock, tanned skins and processed meat forms), middlemen specialization, mass-media promotions, competitive pricing and/or possibly overcoming market fragmentation. Through adopting such a logistic step approach to market development, greater assurance of successful marketing can often be realized, (ibid)

Owen (1976) reported that annual commercial-scale meat production goals of 60 offspring reared per doe (involving eight litters) with 2 kg market weights per rabbit fryer by 8-10 weeks of age, respectively. These figures can be projected to a total of 120 kg in rabbit market fryers per doe per annum. Such high levels of production achieved under intensive production systems are primarily found in Europe and in North America. Further, benchmark production data from developed nations are well documented in the scientific literature.

On small-scale family farms rabbits should be strongly integrated into traditional farming practices (Lukefahr 1988). This entails recycling of garden and/or food refuse to rabbits as feed and converting rabbit manure into compost for enhancing soil fertility. This integrated approach is an effective means by which animal feed and fertilizer costs can be minimized. Beneficial intermediaries (catalysts) in this integrated, cyclic scheme are
earthworms as agents in finely pulverizing rabbit manure and bees as agents in boosting farm crop productivity through pollination.

Alternatively, rabbits can be housed over fish ponds whereby blue-green algae production can be increased to enhance fish yield harvests, while rabbits may be fed on inexpensive forage and/or garden wastes grown along the pond banks. As a result of such applied integration each distinct farm enterprise component may demonstrate increased yields while requiring only marginal capital expenditures. In addition, rabbit manure can be converted into methane gas to meet household fuel needs. Of course, such a farming system is labor intensive. Extension of farming systems research innovations on such small farms is an area which deserves special attention, (ibid)

Utilization of rabbit pelts, such as tanned skins made into traditional items (drum skins, hats, rugs and toys) and foot and tail charms, should be exploited, as reported by Rougeot (1986). Development of community rabbit skin industries should be assessed to capitalize on such potential economic ventures.

Hassane (1999) identified the key problems that affect rabbit production as breeds, housing, feeding, marketing, diseases and pests. The selection of the breed has an effect in the production of rabbits. There are 3 main exotic breeds that were imported in Kenya for rabbit meat production. They mature early and their conversion ratio of feed to meet is very high. The breeds include the New Zealand white, California and Flemish Giants. Furthermore breeders and individuals also use local breeds as well as mixed breed.

Mureithi pc (2007) lists the key problems facing the rabbit industry in Kenya as scarcity of input especially quality breeding stock, feeds and building materials; lack of proper established channels in marketing the rabbits and their by products; insufficient knowledge in rabbit management by the rabbit keepers and technical staff; and reluctance by some ethnic group to keep or handle rabbit's because of their traditions, taboos, religion and customs.
2.2.1 RABBIT PRODUCTION MODEL
As a project planning tool, the small-scale rabbit production model (SSRPM) has been recently developed for use in LDC's (Figure 2.1). The internal and external dimensions of this model were discussed in detail by Lukefahr (2004), whereas the intermediate dimension was described in greater detail by Lukefahr (2007). Both papers are available on-line. The internal factors of breeding stock, diets, housing, etc., pertain to the management by farmers of locally appropriate resources. Farmers should be trained to become self-sufficient rather than dependent on off-farm inputs, such as exotic breeds, commercial diets, and welded wire.

Figure 2.1 The small-scale rabbit production model (SSRPM) wheel of sustainability

Source: Lukefahr (2004)
In general, locally adapted, rustic breeds or crossbreds are usually more suitable for small-scale, extensive production systems than recently imported exotic animals from intensive production systems. Diets should consist of nutritious and palatable grasses, forbs, and legumes that can adapt to the region and be cultivated by farmers in small plots. In Vietnam, diets consisting of molasses blocks and leaves from mulberry and *Trichanthera gigantea* resulted in satisfactory performance in breeding does (Le Thu Ha et al 1996). In Cambodia, water spinach (*Ipomoea aquatica*) has shown good promise as forage for rabbits with gains of 14 to 20 gms/day (Pok Samkol et al 2006). Locally available materials for constructing hutches and other equipment is certainly more affordable to farmers than use of wire, such as the common use of bamboo in China (Milne 1982), in Indonesia (Cheeke 1983), and in the Philippines (Bondoc et al 1986). However, it has often been observed that a combination of wire and local materials for hutches is used. In Vietnam, Nguyen Quang Sue et al (1996) reported on the use of an underground housing system to offset high temperature effects on rabbit performance. This is a viable option in countries with hot climates (Finzi and Amici 1991).

The intermediate dimension of the SSRPM pertains to the planning and management of a rabbit development programme. Persons interested in this aspect are again referred to the detailed paper by Lukefahr (2007), as well as a book by Lukefahr (1992). However, it is emphasized here that project participants should be carefully selected and trained well by the programme to ultimately become successful rabbit farmers.

There are at least two ways to consider the external dimension (environment) of the SSRPM. The first way is in determining if a rabbit project or enterprise is feasible for initiation. For example, would it be socially accepted? Po markets exist or can they be created so that the farmer can make a reasonable profit? Can the farm environment (ecofarm) be enhanced or sustained through the rabbit component using integrative practices as presented in the next section? If a negative response or red flag is raised, then the project should not be started. To cite Bunch (1982): "A failed project is worse than no project at all."
The second way to consider the external factors is in evaluating a project to assess the impact after formal termination by the programme. Basic broad and specific questions may be asked to gather useful information for analysis and interpretation. For example, Did the community benefit from the rabbit project? Did the project specifically support youth development or empower the role or social status of women? Was the trend of rural migration reduced or reversed? Was family health improved through the regular consumption of rabbit meat? Economically, were markets created or expanded to increase the level of income through the sales of surplus rabbits? Did farmers possibly increase the size of their operations to take advantage of market opportunities? Was a rabbit farmer's market cooperative established? Of course, there is much flexibility in addressing the impact of the rabbit project; however, there should be a clear focus on the original project's goal and objectives (Lukefahr 2004).

Integration

A holistic and integrative approach should be used in developing a sustainable, small farm model that includes a rabbit component. In Indonesia, it has been reported that mean farm size is only 0.4 ha (Devendra and Chantalakhana 2002). An effective model highlights the close integration of all diversified farming activities to improve the efficiency of food production, while minimizing economic risk (Lukefahr and Preston 1999). If successful, the small farm transforms from a state of inefficiency into a more stable unit of food security and profit generation, to eventually provide the farmer with the opportunity to escape from poverty.
Specifically, all farming activities or components should be complementary, for example, using animal manures for compost to add to forage and garden plots, fish ponds, and (or) worm bins, while fresh-cut feeds tuffs from forage and garden plots and edible kitchen scraps are fed to rabbits and other livestock (Figure 2.2).

The focus is to capture solar energy and to ensure that there is an efficient flow of nutrients among components, essentially a farm ecosystem, such that there is reduced dependence on off-farm inputs (e.g., commercial feeds, breeding stock, and fertilizers), including lower capital, major equipment, and hired labour requirements. The model reflects a "more for less" approach (i.e., unit increase in farm outputs per unit decrease of off-farm inputs). As illustrated in Figure 2, rabbits are supported from farm-based feedstuffs, whereas rabbit excreta and slaughter wastes are recycled into compost or are used for aquaculture or vermiculture. Ruminant species should generally be raised under more easily managed; zero grazing conditions to minimize damage from overgrazing (Aaker 1994). In addition, in the context of common agricultural practices in Asia, small ruminants can be leased to control weeds by grazing on other farms or plantations.
(Devendra 1991), whereas ducks can be leased to control undesirable insects and weeds in rice paddies (Lukefahr and Preston 1999).

In addition, there should be a subdivision of labour among family members. Rabbit projects have been used as a vehicle to empower women who live in poverty in Cameroon (Lukefahr et al 2000). Rabbits were chosen over other small livestock because of the low initial investment and operating costs (especially feed) and the short lag-time before women began to benefit from a steady supply of meat and much needed cash from surplus fryer sales in local markets. Women also became more active in participating in social groups based on experiences gained as leaders in rabbit clubs. Hence, the role of women should not be overlooked in planning rabbit projects. Further, the model is reinforced when there is a close working relationship between agricultural scientists and extension staff. This is evident when farmers are, for example, adopting improved varieties of forages and new resource management techniques, reducing labour inputs, and exploiting new marketing opportunities.

2.3 Summary of literature review and gaps to be filled by the study

Lukefar and Goldman (1985) concluded that rabbit projects fail due to inadequate marketing opportunities for rabbit meat. They explained the limited market success as influenced by low consumer demand, insufficient promotion, unsteady product supply, unreasonable prices, competition between other meats, lack of product diversification, and poorly developed marketing channels. Their study was based on small scale rabbit producers in Cameroon. There is need to test whether their conclusion is applicable in Kenya. Furthermore, it is important to test whether the same factors have any bearing on large scale commercial rabbitry projects.

Owen (1976) studying on causes of increased production of rabbit in number of countries concluded that increased production was reported where quality stocks and ideal environmental conditions existed. In furtherance of Owens's work and to test its applicability in Kenya, Wanhaiya and pope (1985) concluded that low productivity of rabbits in Kenya was due to the economic production cost factor, especially low capital inputs, as evidenced in small scale subsistence family rabbit keeping units. They also
concluded that favourable market prices of competitive meat such as chicken and pork do also contribute to low productivity of rabbits. However, their study did not indicate the extent to which each of this factors influence the low productivity. This study will test the influence of the marketing factors they mentioned, (market prices of rabbits and competition among other meats), among others, on rabbit productivity.

2.4 Conceptual Frame Work

<table>
<thead>
<tr>
<th>IN DEPENDENT VARIABLES</th>
<th>INTERVENING</th>
<th>DEPENDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Marketing Factors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer demand</td>
<td>Rabbit breed</td>
<td>Number of rabbits produced and sold</td>
</tr>
<tr>
<td>Promotion &amp; advertising</td>
<td>Financial resources</td>
<td></td>
</tr>
<tr>
<td>Market Prices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition between other meats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product diversification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing channels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: author 2007

Independent factors comprise of the marketing factors that producers must consider in order to effectively produce and sell rabbits. These marketing factors are: consumer demand, promotion and advertising, market prices, competition between other meats, and product diversification.
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter explains the research design, target population, the sample and sampling techniques, research instruments and the methods that were used in data analysis and interpretation. The study investigated the effects of marketing factors on the production of rabbits in Kenya.

3.1 Research Design

The research design adopted for this study was descriptive research which involved a field survey where the researcher collected data from the population of interest that describes the marketing factors that influence their operations, and the role and impact of each. The researcher sought to identify the marketing factors, investigate their roles and impact on rabbit production. This approach was considered appropriate because it provides facts and suggestions on major connections between variables and their apparent implications. It can also be used both in qualitative and quantitative data to address the problem.

3.2 Target Population

According to Bowman and Branchaw (1988) target population is the collection or set of individuals or subjects whose properties will be analyzed. The target population was 71 respondents, comprising of 56 rabbit keepers from Ruai and 15 rabbit keepers from Mbotela. These were stratified into two groups according to their regions.
Table 3.1 target population

<table>
<thead>
<tr>
<th>REGION</th>
<th>NUMBER OF RABBIT KEEPERS</th>
<th>PROPORTIONAL TO THE TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruai</td>
<td>56</td>
<td>79%</td>
</tr>
<tr>
<td>Mbotela</td>
<td>15</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: District Livestock office, Nairobi East

3.3 Sample Design

The sample size was 42 respondents representing 60% of the target population. This comprised of 33 rabbit keepers from Ruai and 9 rabbit keepers from Mbotela. These were selected on random sampling basis from each stratum.

Table 3.2 sample size

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of rabbit keepers</th>
<th>Sample size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruai</td>
<td>56</td>
<td>33</td>
<td>60%</td>
</tr>
<tr>
<td>Mbotela</td>
<td>15</td>
<td>9</td>
<td>60%</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>42</td>
<td>60%</td>
</tr>
</tbody>
</table>

Source: author 2011

3.4 Data Collection Instrument and Procedure

Data was collected from primary sources. The instrument for data collection was structured questionnaire. One questionnaire per respondent was administered using the 'drop and pick later' method in combination with self-administered techniques. In both techniques, an introduction letter from the university together with a specimen letter written by the researcher was attached to the questionnaire.
3.5 Data Analysis and Presentation

The collected data was analyzed using descriptive methods due to the descriptive nature of the study. Descriptive statistics i.e. frequencies, percentages, mean scores, and mode were used to analyze data. The data was presented in tables, charts and graphs and was further explained in notes.
CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION

4.1 Introduction
This chapter presents an analysis and interpretation of the data that was collected from the respondents. The main objective of the study was to investigate the effects of marketing factors on the production of rabbits. Specifically, the study intended to; identify the marketing factors that influence the production of rabbits, determine the effects of the identified marketing factors on the production of rabbits, and suggest ways in which these marketing factors might be utilized to improve rabbit production. Data was collected by use of questionnaires and analyzed, presented and interpreted as follows;

4.2 Response rate
Out of the 42 questionnaires given to respondents, 36 were fully completed and returned. This represents an 86% response rate. This was a good turn-up and adequate enough for the study since according to Mugenda 2003, 50% of the response rate is adequate enough to carry out a study.

4.3 Respondents Profile
4.3.1 Age of the Respondents
The study sought to establish the age of respondents involved in the study. The information obtained from the respondents is as summarized in table 4.1 below.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 years</td>
<td>02</td>
<td>06%</td>
</tr>
<tr>
<td>31 - 40</td>
<td>12</td>
<td>32%</td>
</tr>
<tr>
<td>41 - 50</td>
<td>19</td>
<td>52%</td>
</tr>
<tr>
<td>50 and above</td>
<td>03</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Author, 2011
From table 4.1 above it is clear that majority (52%) of the respondents are aged between 41 and 50 years, whereas 6% are aged less than 30 years, 32% are aged between 31 and 40 years and 10% are aged above 50 years.

4.3.2 Level of Education

The study sought to establish the level of education of respondents involved in the study.

The information obtained from the respondents is as summarized in table 4.3 below.

**Table 4.2 Level of Education**

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below O-Level</td>
<td>00</td>
<td>00%</td>
</tr>
<tr>
<td>O-Level</td>
<td>25</td>
<td>68%</td>
</tr>
<tr>
<td>Diploma and above</td>
<td>11</td>
<td>32%</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Source: Author, 2011*

From table 4.3 above it is clear that none of the respondents has a qualification below O-level, whereas 68% of the respondents have a O-level qualification and 32% have diploma qualification and above.

**Fig 4.1 Level of Education**

![Bar chart showing levels of education](image)

*Source: Author 2011*
4.3.3 Gender

The study sought to establish the gender of respondents involved in the study. The information obtained is as summarized in table 4.3 below.

**Table 4.3 Gender of Respondents**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>11</td>
<td>30%</td>
</tr>
<tr>
<td>male</td>
<td>25</td>
<td>70%</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Source: Author, 2011*

From table 4.3 above it is clear that majority of the respondents are male representing 70% of all the respondents whereas 30% of the respondents were female.

4.3.4 Number of years in Rabbit Keeping

The study sought to establish the number of years that the respondents have been in rabbit keeping business. The information obtained from the respondents is as summarized in table 4.4 below.

**Table 4.4 Number of years in Rabbit Keeping**

<table>
<thead>
<tr>
<th>Years of service</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>04</td>
<td>12%</td>
</tr>
<tr>
<td>1 -3 years</td>
<td>04</td>
<td>12%</td>
</tr>
<tr>
<td>3-5 years</td>
<td>15</td>
<td>41%</td>
</tr>
<tr>
<td>Over 5 years</td>
<td>13</td>
<td>35%</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Source: Author, 2011*

It is indicated in table 4.4 above that majority (41%) of the respondents been keeping rabbits for a period of between 3 and 5 years, 35% have been keeping rabbits for a period of more than 5 years, 12% have kept them for between 1 and 3 years and 12%
have kept the rabbits for less than 1 year. This is a clear indication that most of the respondents have a clear understanding of the operations involved in rabbit keeping having been the business for a reasonable period of time. The above information can be graphically represented as follows

Fig 4.2 Number of years in Rabbit Keeping

![Graph showing years of rabbit keeping]

Source: Author 2011

4.3.5 Total numbers of rabbits kept by individual breeder

The researcher found out that on average an individual breeder keeps between 20-30 rabbits.

4.4 Marketing Factors Influencing the Level of Rabbit Production

The study sought to establish the marketing factors influencing rabbit production. The respondents identified Promotion and advertising, Market Prices, Competition between other meats, Consumer demand, Distribution, Product diversification as the marketing factors that influence rabbit production.
4.4.1 Consumer demand

4.4.1.1 Level of consumer demand

Of the 35 respondents, 4 (12%) believe that the consumer demand for rabbits is high, 11 (30%) believe that the consumer demand is average, 18 (52%) believe that the consumer demand is low, while 2 (6%) believe that the consumer demand is very low.

<table>
<thead>
<tr>
<th>Level of consumer demand</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>4</td>
<td>12%</td>
</tr>
<tr>
<td>Average</td>
<td>11</td>
<td>30%</td>
</tr>
<tr>
<td>Low</td>
<td>18</td>
<td>52%</td>
</tr>
<tr>
<td>Very low</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>total</td>
<td>35</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: author 2011

Fig 4.3 Level of consumer demand
4.4.1.2 Type of demand

8 respondents (22%) described the demand as regular while 27 of them (78%) described it as irregular.

Table 4.6 Type of demand for rabbits

<table>
<thead>
<tr>
<th>Type of demand</th>
<th>respondents</th>
<th>Percentage%</th>
</tr>
</thead>
<tbody>
<tr>
<td>regular</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>irregular</td>
<td>27</td>
<td>78</td>
</tr>
<tr>
<td>total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author 2011

Fig. 4.4 type of demand for rabbits

Source: Author 2011

4.4.1.3 Influence of consumer demand on the production of rabbits

32 respondents (93%) believe that consumer demand influence production of rabbits in the region while 3 respondents (7%) do not believe that consumer demand do influence production of rabbits.
Table 4.7 Influence of consumer demand on production of rabbits

<table>
<thead>
<tr>
<th>Does consumer demand influence production of rabbits?</th>
<th>Number of respondents</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>93%</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>7%</td>
</tr>
<tr>
<td>total</td>
<td>35</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Author 2011

Fig. 4.5 Influence of consumer demand on production of rabbits

Source: Author 2011

The respondents identified individual breeders, individual consumers and middlemen such as hotels as the main customers for their rabbits. They also indicated that the consumer demand can be boosted by creating awareness among potential individuals interested in breeding, encourage current consumers to consume more, and motivate hotels and butcheries to assist in the distribution of rabbit meat.
4.4.2 Promotion and advertising

4.4.2.1 Promotion media

All the respondents (35) 100% do promote their rabbits in one way or another. They all believe that promotion and advertising influence production of rabbits. Word of mouth is the most common method of advertising that the breeders use to advertise and promote their rabbits, followed by chief baraza and other meetings while radio and newspaper are rarely used.

Radio and newspaper had been used by only one respondent (3%), while 30 out of 35 (85%) respondents use chief baraza and other meetings. All the 35 respondents (100%) use word of mouth as their communication media.

Table 4.8 promotion media

<table>
<thead>
<tr>
<th>Communication media</th>
<th>No. of respondents</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>radio</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>newspaper</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Chief baraza and other meetings</td>
<td>30</td>
<td>85</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: author 2011
Fig. 4.6 promotional and advertising media used by rabbit breeders

<table>
<thead>
<tr>
<th>Media</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>radio</td>
<td>3</td>
</tr>
<tr>
<td>newspaper</td>
<td>4</td>
</tr>
<tr>
<td>Chief baraza and other meetings</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: Author 2011

4.4.3 Market prices

4.4.3.1 Level of market price for rabbits

6 respondents (17%) believe that the prices for rabbits is high, 23 respondents (66%) believe that the prices are average, 5 (14%) believe that the prices are low, and only 1 respondent (3%) take the prices to be very low.

Table 4.9 Level of market price for rabbits

<table>
<thead>
<tr>
<th>Price level</th>
<th>Number of respondents</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>average</td>
<td>23</td>
<td>66</td>
</tr>
<tr>
<td>low</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Very low</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author 2011
4.4.4 Competition between other meats

4.4.4.1 Level of competition between other meats

All the 35 respondents (100%) believe that their competition between rabbit meat and other meats. Of these, 23 respondents, (66%) indicated that the level of competition is very high, 9 respondents (26%) indicated the level of competition is high, and 3 respondents (9%) indicated that the competition is low.

Table 4.10 Level of competition between other meats

<table>
<thead>
<tr>
<th>Level of competition</th>
<th>Number of respondents</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>23</td>
<td>66</td>
</tr>
<tr>
<td>high</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td>low</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Very low</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Author 2011
4.4.4.2 How to boost the competitive position of rabbits

The respondents were of the opinion that rabbit meat competitiveness can be boosted by increasing awareness of rabbit meat, countering the beliefs that keeping of rabbits is a boys' affair, persuading ordinary butchetries to stock rabbit meat, and establishing rabbit meat eating points where only rabbit meat is availed ready to eat.

4.4.5 Product diversification

The respondents indicated that they sell rabbit meat when alive, except for a few occasions when a customer may request that the rabbit be slaughtered for him/her. This limits the potential of adding value and diversification. The respondents were of the opinion that rabbit production can be improved by increasing awareness on production and consumption of rabbits, the government should come in and look for market for rabbits, and rabbit breeders should come together and form associations that will help create synergy in terms of production, training, and marketing of rabbits.

4.5 The Extent to Which Marketing Factors Influencing the Level of Rabbit Production

The study sought to establish the extent to which marketing factors influence level of rabbit production. The respondents were asked to rate the effect on a five-point likert scale 5-Very high extent 4-high extent, 3-Neutral 2-low extent 1-very Low extent. The information obtained from the respondents is as summarized in the table below
Table 4.11 Marketing Factors Influence the Level of Rabbit Production

<table>
<thead>
<tr>
<th>Marketing factors</th>
<th>5- Very high extent</th>
<th>4- high extent</th>
<th>3- Neutral</th>
<th>2-low extent</th>
<th>1- very Low extent</th>
<th>( \Sigma f )</th>
<th>( \Sigma fx )</th>
<th>( \Sigma fx/\Sigma f )</th>
<th>Std. D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion and advertising</td>
<td>36</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>36</td>
<td>180</td>
<td>5.0000</td>
<td>.00000</td>
</tr>
<tr>
<td>Market Prices</td>
<td>20</td>
<td>04</td>
<td>04</td>
<td>04</td>
<td>04</td>
<td>36</td>
<td>163</td>
<td>4.532</td>
<td>.40839</td>
</tr>
<tr>
<td>Competition between other meats</td>
<td>16</td>
<td>14</td>
<td>04</td>
<td>02</td>
<td>00</td>
<td>36</td>
<td>152</td>
<td>4.2222</td>
<td>.40839</td>
</tr>
<tr>
<td>Consumer demand</td>
<td>14</td>
<td>16</td>
<td>02</td>
<td>04</td>
<td>00</td>
<td>36</td>
<td>148</td>
<td>4.1111</td>
<td>.1678</td>
</tr>
<tr>
<td>Distribution</td>
<td>22</td>
<td>03</td>
<td>03</td>
<td>04</td>
<td>04</td>
<td>36</td>
<td>143</td>
<td>3.9722</td>
<td>.40839</td>
</tr>
<tr>
<td>Product diversification</td>
<td>03</td>
<td>07</td>
<td>18</td>
<td>04</td>
<td>04</td>
<td>36</td>
<td>109</td>
<td>3.0278</td>
<td>.1678</td>
</tr>
</tbody>
</table>

Source: Author 2011

From the research data in table 4.6, the respondents' opinion is that Promotion and advertising and market prices affect production of rabbits to a very high extent (Mean ≥ 4.5 = very high extent, with a significant standard deviation), as a marketing factor. Whereas competition from other types of meat, consumer demand and distribution affect rabbit production to a high extent (Mean ≥ 3.5 = high extent, with a significant standard deviation). The respondents were uncertain about the effect of Product diversification on production of rabbits (Mean ≥ 3 = neutral, with a significant standard deviation).
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction.

This chapter contains a summary of findings of the study, conclusion arrived at, and the recommendations thereof.

5.2 Discussion of findings

5.2.1 General information

The main objective of the study was to investigate the effects of marketing factors on the production of rabbits. Specifically, the study intended to: identify the marketing factors that influence the production of rabbits, determine the effects of the identified marketing factors on the production of rabbits and suggest ways in which these marketing factors might be utilized to improve rabbit production. The study revealed that majority (52%) of the respondents are aged between 41 and 50 years, whereas 06% are aged less than 30 years, 32% are aged between 31 and 40 years and 10% are aged above 50 years. Further, it was revealed that none of the respondents has a qualification below O-level, whereas 68% of the respondents have a O level qualification and 32% have diploma qualification and above.

The study also found out that that majority of the respondents are male representing 70% of all the respondents whereas 30% of the respondents were female. In terms of number of years the respondents have been in the business of rabbit production, it was revealed that that majority (41%) of the respondents been keeping rabbits for a period of between 3 and 5 years, 35% have been keeping rabbits for a period of more than 5 years, 12% have kept them for between 1 and 3 years and 12% have kept the rabbits for less than 1 year. This is a clear indication that most of the respondents have a clear understanding of the operations involved in rabbit keeping having been in the business for a reasonable period of time thus were in a position to give desired information.
5.2.2 Marketing Factors Influencing the Level of Rabbit Production
The study revealed that the marketing factors influencing rabbit production include Promotion and advertising, Market Prices, Competition between, Competitions between other meats, Consumer demand, Distribution, and Product diversification.

5.2.3 The Extent to Which Marketing Factors Influencing the Level of Rabbit Production
The study sought to establish the extent to which marketing factors influence level of rabbit production. It was revealed that that Promotion and advertising and market prices affect production of rabbits to a very high extent (Mean ≥ 4.5 = very high extent, with a significant standard deviation), as a marketing factor. Whereas competition from other types of meat, consumer demand and distribution affect rabbit production to a high extent (Mean ≥ 3.5 = high extent, with a significant standard deviation). The respondents were uncertain about the effect of Product diversification on production of rabbits (Mean ≥ 3 = neutral, with a significant standard deviation)

5.3 Summary of findings
In summary, the findings of the study were

i) The marketing factors that influence the Level of Rabbit Production include
   - Promotion and advertising
   - Market Prices
   - Competition from other meats
   - Consumer demand
   - Distribution
   - Product diversification

ii) The Extent to Which Marketing Factors Influencing the Level of Rabbit Production
   - Promotion and advertising and market prices affect production of rabbits to a very high extent
   - Competition from other types of meat, consumer demand and distribution affect rabbit production to a high extent
5.4 Conclusions

The researcher concluded that the marketing factors influencing rabbit production are Promotion and advertising; Market Prices; Competition from other meats; Consumer demand; Distribution; and Product diversification. It is further recommended that rabbit breeders must consider these factors since they influence rabbit production either to a high extent or a very high extent.

5.5 Recommendation

The researcher recommends that rabbit breeders must be trained on how to handle the identified marketing factors. The government through the ministry of livestock development and marketing should organize training programmes through which marketing related knowledge would be passed to the rabbit breeders. Further, it is recommended that the government should take active position in promoting the production of rabbits. This would greatly assist in enhancing consumer demand, distribution and market prices. This would also assist in improving the competitive position of rabbit meat from other types of meat.

Rabbit breeders should join hands and form co-operatives that will assist them in marketing their produce. Further, with large rabbit outputs, product diversification would be more practical.

5.6 Recommendation for further Study

The main objective of the study was to investigate the effects of marketing factors on the production of rabbits. Specifically, the study intended to; identify the marketing factors that influence the production of rabbits, determine the effects of the identified marketing factors on the production of rabbits and suggest ways in which these marketing factors might be utilized to improve rabbit production. The study therefore was limited to the field of marketing factors. There is need therefore to consider the effects of other factors that influence the production of rabbit such as the parental rabbit breeds, governmental interventions and traditional beliefs. It would also be necessary to study rabbit keeping as a viable business enterprise.
QUESTIONNAIRE FOR RABBIT BREEDERS

Kindly answer the following questions. The information given will be handled with confidentiality it deserves and only for this research purpose.

Section A: Personal Data

1. Name (optional)

2. Gender
   Male ( )
   Female ( )

3. For how long have you been breeding rabbits?
   Less than one year ( )
   One to three years ( )
   More than three years ( )

4. What is the total number of rabbits that you keep?

5. How many rabbits do you sell per month?

Section B: Production of rabbit

1. Is production of rabbits in this region reasonable in terms of quantities?
   Yes ( )
   No ( )

2. What factors influence production of rabbits in this region?

Section C: marketing factors influencing rabbit production

To what extent do the following marketing factors influence the level of rabbit production in this region?

<table>
<thead>
<tr>
<th>Promotion and advertising</th>
<th>Market Prices</th>
<th>Competition between other meats</th>
<th>Consumer demand</th>
</tr>
</thead>
</table>
1. How is the consumer demand for rabbit?
   High [ ]
   Average [ ]
   Low [ ]
   Very low [ ]

2. How can you describe this demand?
   Regular [ ]
   Irregular [ ]

3. Does this demand influence production of rabbits?
   Yes [ ]
   No [ ]

4. Where do you sell your rabbits? ------------------ .•---------------------------------------

5. State the extent to which demand influence the level of rabbit production in this region.
   Very greatly [ ]
   Greatly [ ]
   Average [ ]
   Low [ ]
   Very low [ ]

6. What advice can you give to boost demand for rabbits in this region?-------------------

Section D: Promotion and advertising

1. Do you promote and advertise your rabbits?
   Yes [ ]
   No [ ]

2. Does promotion and advertising influence production of rabbits?
   Yes [ ]
   No [ ]

3. What media do you use to communicate to others about your rabbits? (You can tick more than once)
   Radio [ ]
   Newspaper [ ]
   Chief Baraza and other meetings [ ]
   Word of mouth [ ]
1. State the extent to which promotion and advertising influence the level of rabbit production

- Very greatly [ ]
- Greatly [ ]
- Average [ ]
- Low [ ]
- Very low [ ]

2. What advice can you give on how to promote and advertise rabbits in this region?

Section E: Market Prices

1. How can you describe the prices for rabbit in this region?

- High [ ]
- Average [ ]
- Low [ ]
- Very low [ ]

2. Does the price influence production of rabbits?

- Yes [ ]
- No [ ]

3. State the extent to which market prices influence the level of rabbit production.

- Very greatly [ ]
- Greatly [ ]
- Average [ ]
- Low [ ]
- Very low [ ]

4. At what price do you sell your rabbits?

- Mature male
- Mature female
- Young male
- Young female

Section F: competition between other meats

1. Is there competition between rabbit meat and other types of meat?

- Yes [ ]
- No [ ]
2. If yes, how can you describe the level of this competition?

   - Very high [ ]
   - High [ ]
   - Low [ ]
   - Very low [ ]

3. What advice can you give to boost the competitive position of rabbit meat?

Section G: Product Diversification

1. In what state do you sell your rabbits?
   a. Live [ ]
   b. Slaughtered [ ]

2. If sold when slaughtered, how do you handle the rabbit meat? (please explain)

3. Does product diversification influence rabbit production in this region?

4. What advice can you give on how to add value and variety for rabbit meat?

5. Can you give a general comment on how rabbit production can be improved in this region?
REFERENCES


Kotler Philip and Keller Kelvin (2006), Marketing Management, Pearson prentice hall, Upper Sandle River, New Jersey


Mureithi (pc) (2007) A personal communication with the officer in charge of Ngong Breeding Centre, Nairobi


Randy (1990) **Rabbit production in northern America**, University of North Dakota
