

# **Towards Identifying Current Strategies and Innovative Approaches for the Growth of Dairy Goat Entrepreneurs: A Case Study of Njiru District, Kenya**

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## **Abstract**

Dairy goats remain to be the most lucrative business where land fragmentation has resulted in the formation of small pieces of land that cannot support dairy cattle farming (Kinyanjui et al., 2008). From casual observation, this situation does not prevail in Njiru District since the growth is very slow hence the venture is risky. Nevertheless, some few farmers have risked by taking the initiative of venturing into the business so as to seize the opportunity. The purpose of this study was to identify current strategies and innovative approaches for the growth of dairy goat entrepreneurs.

The population of this study was determined by getting a list of farmers engaged in micro and small dairy goat enterprises. This constituted the sampling frame. Simple random sampling method was used to select 36 dairy goat farmers from a list of dairy goat enterprises in Njiru District. The questionnaire comprised of closed and open ended questions. Descriptive statistics was used to collect data and included frequency tables.

Further, a computer statistical package for social sciences (SPSS) was used in entering and analyzing the data. The study established that the entrepreneurs adopted innovative approaches in their businesses. All of the respondents claimed that their businesses had increased in growth as a result of adopting current strategies and innovative approaches in their dairy goat enterprises.

**Keywords:** Current strategies, Innovative approaches, Growth, Dairy goat entrepreneurs

## **Introduction**

The Kenya vision 2030 strategy clearly identifies agriculture as one of the six economic sectors expected to drive the economy to a projected 10% growth annually over the next two decades. Agriculture is therefore central to the achievement of vision 2030 whose goal will be realized partly by the promotion of innovative, commercially-oriented and modern agriculture. On average, the agricultural sector contributes about 24% of the GDP and 65% of the total export

earnings. Through links with manufacturing, distribution and service sectors, agriculture directly contributes a further 27% of the country's GDP (GoK, 2008).

Globally, there are 861.9 M goats. The dairy goats produce about 15.2 M metric tons (MT) of milk, accounting to 2% of the world's total amount of milk produced by livestock species. Much of the milk produced by the dairy goats is for family consumption, but goat's milk can also be further processed into a variety of marketable products (FAOSTAT, 2008). The country has a livestock population estimated at 12.5 million heads of cattle, 8 million sheep, 0.14273 dairy goats and 0.85 million camels (Kamau et al., 2008).

Goat's milk can often be enjoyed by people who are allergic to cows' milk, and infants of all species generally thrive on goat milk. Value-added products such as cheese and yoghurt made from milk are finding a growing demand in the dairy market. Dairy goats are enjoyable animals, easy to handle and haul, and relatively inexpensive to purchase, feed, and house. Dairy goat production, especially pasture-based production, offers the opportunity for profitable and sustainable diversity on a small farm (Kamau et al., 2008).

### **Problem Statement**

Dairy goats remain to be the most lucrative business where land fragmentation has resulted in the formation of small pieces of land that cannot support dairy cattle farming. This scenario has resulted in the rise in demand for small ruminants, predominantly the dairy goats (Kinyanjui et al., 2008). From casual observation, this situation does not prevail in Njiru District since the growth is very slow hence the venture is risky. Nevertheless, some few farmers have responded to the dwindling sizes of land and switched to the goat farming which is perceived as more profitable compared to farming either grain or cattle on the same size of land. By switching to goat farming, they have also demonstrated the precipitating event theory of entrepreneurship which advances the triggering event of motivation to entrepreneurship. These farmers can rightly be termed as entrepreneurs. There was need therefore to find out the various current strategies and innovative approaches that have triggered their success so as to replicate this to other parts of the country to ensure robust growth of these ventures.

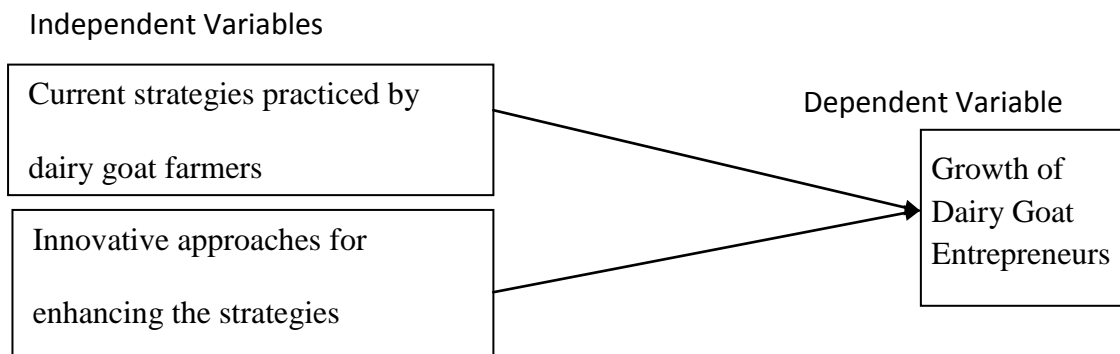
## Literature Review

### Theoretical Framework

Kirsner (1973), argues that an entrepreneur is alert to a new product or superior production process and steps in to fill this market gap before others success in this view comes not from following a well specified maximization problem, but from having some insight that no one else has a process that no one else has a process that cannot be modeled as an optimization problem.

Schumpeter entrepreneur introduces new combinations; new products, production process, new markets, new sources of supply and developing a new organization or industry. According to Schumpeter, Entrepreneurship is a source of change. Innovation creates new activities and markets. Under such circumstances, profit is a surplus or residual that arises due to an innovative act those result in lower cost or higher prices (Nteere, 2012).

### Conceptual Framework



**Fig 2.2 Conceptual Framework**

### Current Strategies used by the Dairy Goat Entrepreneurs

Past efforts to acquire information have focused on research geared towards increasing the development of technology, products and markets in the MSE sector. The efforts have contributed to increased knowledge and information on new products and production processes for MSEs, but institutions involved in the acquisition of information are not only few and inadequately funded, but also have limited capacity to address the enormous problems facing the sector. As a result, very little is known about the MSE sector with regard to products, prices, needs, constraints, opportunities and ways of dealing with the myriad issues affecting the sector (GoK, 2005).

To deal with the low social capital in urban areas, a lot of attention has been given to capacity building in areas such as building group cohesion, conflict resolution, leadership development,

participatory planning, etc. Preferably, such organizational capacity building will enhance problem solving capacities (Prain, 2007).

According to Kosgey et al., (2006), dismal performance of programmes involving breed substitution of exotics for indigenous breeds and crossbreeding with temperate breeds have stimulated a recent re-orientation of breeding programmes in tropical countries to utilize indigenous breeds, and most programmes are incipient. The dairy goat entrepreneurs therefore need to improve the quality of breeds as the times go by.

Prain, 2007 argues that producer organizations in urban areas may take more diverse and unusual forms than those in rural settings. Economically oriented organizations form groups with a main emphasis on improving production, cheaper inputs, savings and credit supply, and marketing. Socially oriented organizations help vulnerable households enhance their food security/nutrition and self-help capacities and politically oriented urban producer organizations focus on advocacy and lobbying activities to improve their legal status, enhance access to land, and increase their participation in urban planning. Each of these types has its own dynamics and forms of innovation and will require different intervention strategies to strengthen that innovation.

According to statistics, out of the 100,000 dairy goats in the country, only 12,000 are registered with the Kenya Stud Book (KSB). Registered goats fetch premium prices as they are of higher breeding value in the class of pedigree (Kamau et al., 2010).

### **Innovative Methods of Enhancing the Strategies used by Dairy Goat Entrepreneurs**

Kinyanjui et al., (2006) argues that due to lack of breeding bucks, Dairy Goats Associations has tried to introduce the use of an artificial insemination service for dairy goats. Already, 20 farmers in central province have been trained to serve the seven regions of Nyeri, Kiambu, Muranga, Kirinyaga, Nakuru, Embu and Western province.

To produce adequate milk, a dairy goat requires a well-balanced diet for both self-maintenance and production of milk. A dairy goat is very selective in what it eats. To encourage it to eat, farmers need to provide it with very high quality fodder. If the fodder is of low quality, the goat will refuse to eat it leading to wastage (Kamau, 2011).

Prain, (2007) argues that in the urban context access to forage and other feed sources, and their efficient use in livestock nutrition, are important issues for technical innovation. Since forage is often scarce in urban and peri-urban areas, large amounts of food residues are collected for the preparation of animal feed.

Value addition of goat's milk can be used to boost incomes through improving the shelf life of raw milk and permit dairy goat farmers to sell their products at a guaranteed price. The goat milk has no specified market and price structure. Generally the goat milk is utilized for home consumption by the goat keepers and used to some extent for blending the cow milk. The goat

milk has typical flavor which people don't like and hence the market for goat milk is not developed. If the value added product is prepared from goat milk, it can become an additional source of income to the goat keepers which will enhance their livelihood (Lokhande et al., 2011).

### **Critique of the Existing Literature Relevant to the Study**

According to Maigua (2005), the trend of adoption of the dairy goat project has gone through the innovators phase quickly through the early adopters' phase which represents about 10 percent of the potential farmer base. This low adoption by small holder dairy goat entrepreneurs is as a result of an existing gap in the innovative approaches by the dairy goat entrepreneurs leading to high risk and small returns therefore inhibiting the growth of dairy goat entrepreneurs (GoK, 2008).

### **Research Methodology**

The target population of this study were all the dairy goat entrepreneurs in Njiru District. Simple random sampling was used to select a sample of 36 dairy goat farmers from a list of 363 farmers that was obtained from Njiru District Livestock Production Office. The 36 dairy goat entrepreneurs sample was envisaged to be a large enough sample to minimize the discrepancy between the sample characteristics and the population characteristics (Mugenda et al., 2003).

In order to meet the objectives for this study both secondary and primary data were used to generate the information required. The primary data was collected through an in depth face to face interview after developing a research questionnaire. This questionnaire comprised of closed and open ended questions and it incorporated issues raised in the problem statement. Participant observation was also used. Besides, secondary data on dairy goat entrepreneurs was obtained from existing sources that were available at the Njiru District Livestock Production Office, reviewed journals and books. Use of search engines also supplemented these sources.

A pilot study was then carried out before engaging on the main research in order to check the feasibility of the research. The study was carried out on dairy goat entrepreneurs who were randomly selected and did not form part of the ultimate sample.

Data was then summarized with a view of presenting it in forms that were appropriate for the study's requirements. Quantitative data was analyzed by using descriptive statistics and it included frequency tables. Qualitative data on the other hand, was analyzed by identifying major themes from the responses. Further, computer Statistical Packages for Social Sciences (SPSS) was used to generate tables.

### **Measurement Of Variables**

Growth in the informal sector would be measured using the amount of sales, amount of profits, improved management, government policies, entrepreneurship strategy and technological

innovations. These components are very crucial for SME survival and the overall impact of these would be to raise productivity and lower the cost of doing business. Growth should not only increase the level of output but also lead to long term growth rates. At each growth stage, an enterprise encounters problems and opportunities which if solved propel it to higher levels of productivity (Namusonge, 1998 & Mandu, 2001).

## Findings and Discussion

### Current Strategies used by Entrepreneurs to cope with Challenges

The research sought to study the current strategies used by the dairy goat entrepreneurs so as to cope with the challenges. The strategies assessed included formation of farmer groups, capacity building, controlled breeding, sensitization campaigns on dairy goat production and registration of dairy goats. This is reflected in table 1.

**Table 1: Current strategies used by entrepreneurs to cope with challenges**

Current strategies	N	Percent	Cumulative percentage
Formation of farmer groups	30	26.3%	26.3%
Capacity building	29	25.4%	51.7%
Controlled breeding	29	25.4%	77.1%
Sensitization campaigns on Dairy goat production	22	19.3%	96.4%
Registration of goats	4	3.6%	100.0%
Total	114	100.0 %	

The study revealed that most of the dairy goat entrepreneurs formed farmer groups (26.3%). Formation of farmer groups has demonstrated as having several advantages especially arising from economies of scale not only in the acquisition of inputs but also sale of dairy goats and its products. Farmers groups would also be trained on various aspects of dairy goat production since nowadays government agencies and NGOs prefer dealing with groups instead of individuals. Furthermore, individual farmers would get money to start and expand their enterprise as noted by Bradstock et al., (2007).

Out of the 33 entrepreneurs interviewed, 25.4% practiced controlled breeding. This implied that the dairy goat entrepreneurs were able to crossbreed exotic breeds with local thereby improving the quality of breeds as the time went by hence leading to the growth of the enterprise. It was also observed that 25.4% of the dairy goat entrepreneurs had been trained to uptake the dairy goat technology as noted by Maigua (2005). In addition, they had been trained on programmes aimed at creating conducive environment to enable improved goats to realize their full potential for milk production.

The study revealed that 19.3% of the dairy goat entrepreneurs had sensitized the public on the importance of dairy goat production through forums such as field days, shows and demonstrations. This is in agreement with Ahuya et al., (2001) that there are vigorous farmer and extension to farmer trainings programmes aimed at improving dairy goats to realize their full potential for milk production. This implied that interested individuals were able to acquire knowledge and information on new products and production processes for dairy goats milk. This enhanced the growth of the sub-sector.

From the study, only 3.6% of the dairy goat entrepreneurs had registered their dairy goats with the Kenya stud book. This practice led to good quality breeds with high milk production. This would imply that entrepreneurs acquired high quality breeds and at the same time guarded themselves from unscrupulous farmers and traders who took advantage of the high demand by falsifying records to show those goats were of high quality.

### **Innovative Approaches for Enhancing the Strategies**

Data on innovative approaches adopted by dairy goat farmers was also collected. The researcher wanted to know whether the innovative approaches had any contribution to the growth of the dairy goat sub-sector. The data is shown in table 3.

**Table 2: Innovative approaches for enhancing the strategies**

Innovative approaches	N	Percent	Cumulative percentage
Fodder development and conservation	29	49.2%	49.2%
Buck loaning systems	18	30.5%	79.7%
Use of Artificial insemination	6	10.1%	89.8%
Feed formulation	3	5.1%	94.9%
Value addition	3	5.1%	100.0%
Total	59	100.0 %	

The study revealed that the majority of the respondents (49.2%) had established and conserved fodder. This is in agreement with the study conducted by steward (2002) that there has been substantial uptake of fodder crops such as *calliandra* and *leucaena* among dairy farmers because these fodder improve the nutritive value of the diet and also act as the direct substitution of dairy meal.

Njiru district is an urban area with limited space, for this reason therefore the entrepreneurs established fodder crops for instance *calliandra* as hedges. From personal observation it was

noted that the entrepreneurs also conserved fodders to be used during periods of scarcity. This would solve the problem of scarcity of forage hence led to the growth of the enterprise.

It was also observed that 30.5% of the entrepreneurs loan bucks to each other. This is the practice whereby the dairy farmers bought breeding bucks as a group and kept them at designated locations to be loaned to the members. This implied that the dairy goat farmers would have access to the breeding bucks thereby controlling inbreeding. This has an effect of enhancing the growth of the dairy goat sub-sector.

From the study, it was also observed that 10.1% of the dairy goat entrepreneurs used artificial insemination. This implied that there was genetic improvement of dairy goats. This was very vital in that the productivity of milk increased hence more sales leading to higher profit margins. It was also observed from the study that 5.1 % of the dairy goat entrepreneurs formulated compounded feeds for their dairy goats. This would imply that the entrepreneurs used simple and cost effective methods to produce feeds of high nutritional value and at the same time avoided reliance on grasses and fodders. From personal observation the average feeds formulated was 70 kilogrammes.

Further, it was observed that 5.1% of the entrepreneurs value added their dairy goat milk into yoghurt and cheese. This would be as a result of good market opportunity for different dairy goat's milk products due to the expanding population and the medicinal value of this milk. In addition since milk is highly perishable there was need for milk to be processed into products that have longer shelf life, easier to handle and transport to longer distant market outlets. This is in agreement with Maigua (2005). As earlier mentioned, this would solve the problem of limited markets because the products would be stored and offloaded into the market when demand arise thereby avoiding unnecessary losses. This had great impact on the growth of dairy goat sub-sector.

### **Growth of the Dairy Goat Entrepreneurs**

The information about growth of the dairy goat entrepreneurs was also sought. Growth was measured at the beginning of the enterprise and at the time the research was being carried out. The researcher wanted to know whether there had been growth in the dairy goat enterprise as a result of adoption of current strategies and innovations in respect to the amount of sales, amount of profits, number of dairy goats, new customers, new enterprise strategies and number of trainings on financial management. The information is displayed in table 4.

**Table 3: Growth of dairy goat enterprise**

Area of growth	Increased	Constant	Decreased	Total
Amount of sales	81.3%	9.4%	9.3 %	100.0%
Amount of profits	81.8%	6.1%	12.1%	100.0%
Number of dairy goats	81.8%	12.1%	6.1%	100.0%
New customers	56.3%	40.6%	3.1%	100.0%



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New enterprise strategies	66.7%	33.3%	0%	100.0%
Number of trainings on financial management	24.2%	75.8%	0%	100.0%

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When comparing the growth at the beginning of the enterprise and at the time the research was conducted, 81.3% and 81.8% of the dairy goat entrepreneurs realized increased sales and profits respectively. Increased profit margins represent a good return on investment, which is a good indicator of growth. Growth in profits was attributed to the high price of dairy goat milk. The number of dairy goat's increased by 81.8%. This was as a result of good management practiced by the dairy goat farmers. New customers also increased by 56.3%. This would be as a result increased sensitization on the importance of goat's milk.

From the study, 66.7% of the respondents had acquired new strategies in their venture. As earlier mentioned in table 3, these strategies led to the growth of the dairy goat sub-sector. This is agreement with Namusonge (1998) that adaptive business strategies are important in the growth of the enterprise.

It was also observed that those who acquired training in financial management were 24.2%. Most businesses require some form of financial management. This contributed a lot to the growth of the business because the entrepreneurs acquired relevant skills on managing the enterprise finances.

From personal observation, it was noted that there were some dairy goat entrepreneurs who used artificial insemination. Initially breeding bucks were being used but due to the need for high milk production, they adopted this new innovation. This is highly recommended because farmers need not to keep a breeding buck since it is costly in terms of feeding and disease control.

Another observation made was on value addition. It was noted that there were some farmers who had moved from selling raw milk to making yoghurt and cheese. The reason given for this was that these products were highly demanded and fetched more price than raw milk and this led to increased sales and profits. Further new customers were acquired.

It was also observed that some farmers purchased food residues from Jomo Kenyatta international airport, agro-industries such as Supa loaf and markets for the preparation of dairy goat feeds. Some purchased inputs from agro vets and formulated their own rations instead of relying on forage which was not sustainable at all. This was attributed to the training advanced to the dairy goat farmers.

## **Conclusion and Recommendations**

### **Conclusion**

The overall objective of the study was to identify current strategies and innovative approaches for the growth of dairy goat entrepreneurs in Njiru district. The study has therefore established that there are a number of innovative approaches that led to the growth of the dairy goat sub-sector, this include the use of artificial insemination, fodder development and conservation, feed formulation, Buck loaning systems and value addition of the dairy goat products.

The government through the ministry of livestock development should enforce maintenance of high quality breeding bucks; identify export market opportunities, capacity build the farmers on value addition of dairy goat milk products and also on feed formulation so as to enable them cut on costs.

The dairy goat entrepreneurs should form farmer groups in order for them to have a stronger voice for lobbying and advocacy on the various issues that affect them. By so doing, they will be able to purchase and loan bucks to each other thereby controlling inbreeding. They will also be able to acquire and use A.I services as well as register their dairy goats with the Kenya Stud Book with ease.

### **Recommendations**

The government of Kenya through the ministry of trade and industry to promote the importation of good quality breeding bucks. They should lift the ban on importation of all life animals from European countries which are the main source of breeding stock for dairy goats so as to avoid reliance on breeds of unknown pedigree. Further, stringent conditions on A.I service providers should be reduced so as to ensure constant availability of this service.

Research institutions, universities and other institutions of higher learning should carry out demand driven research so as to identify new innovative ideas for instance value addition and establishment of compounded feeds such as dairy goat meal so as to enhance the dairy goat sub-sector.

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