Milk Marketing Channels and Smallholder farmer motivation to Produce at Chepkorio Division, Elgeyo-Marakwet County.

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Abstract

Dairy farming in high potential rural setups is an important economic activity involving about 58% of the households. Milk as a source of food and income has the capacity to address the twin aim of reducing hunger and poverty. The objectives of the current study were to determine the type of marketing channel, the constraints faced by small scale dairy farmers while marketing and reasons for their motivation to produce milk. The study was undertaken in Chepkorio division, Elgeyo Marakwet County, Kenya, with a population of 67,042 people. The Sample size was fifty farmers selected randomly within five sub-locations. Systematic random sampling procedure of small scale dairy farmers was used to select farmers for interview. The study found that in spite of the emergence of modern milk marketing channels, farmers preferred to use informal milk marketing chain. Farmers sold 50% of their milk to middlemen, while hotels took 12% and formal channel through dairy cooling plant took 38%. Most farmers experienced challenges while marketing their milk including low milk prices, poor road network and low milk production level on the farm. Majority of the farmers grew and conserved feeds for future use in form of hay attended farm field days and practiced artificial insemination services. These were good indicators that they were motivated to continue practicing dairy farming. However, low milk prices and herd upgrade challenges including poor animal breeds, shortage of feeds were de-motivating factors and recommendations were made to curb these problems.

Keywords: Marketing, smallholder dairy, milk production

INTRODUCTON

Livestock industry contributes 12% of the total agricultural production in Kenya, while the dairy sub-sector presents 6 to 8% of the national and 35% of the Agricultural gross domestic product (GDP). The small holder dairy sub-sector is an important component of the agricultural sector since it consists of 80% of the overall dairy farming sector (Karanja 2003). It is a major source of livelihood for close to 1 million small-scale dairy farmers, and employs about 350,000 people directly or indirectly (GOK 2007). Dairy provides milk for human consumption, employment, income, manure for crop production and other products like replacement heifers and meat (MOA 2009, Technoserve, 2008; Karanja, 2003). In Keiyo Sub-county of Elgeyo- Marakwet County, 82% of the farming community own less than 0.8 ha of land where they keep mainly exotic dairy cattle. These farmers are estimated to sell an average of 4-6 litres of milk and 3litres per day, during wet and dry seasons respectively, compared to more than 10litres a day from cross bred dairy cows (Nyambati, 1997).

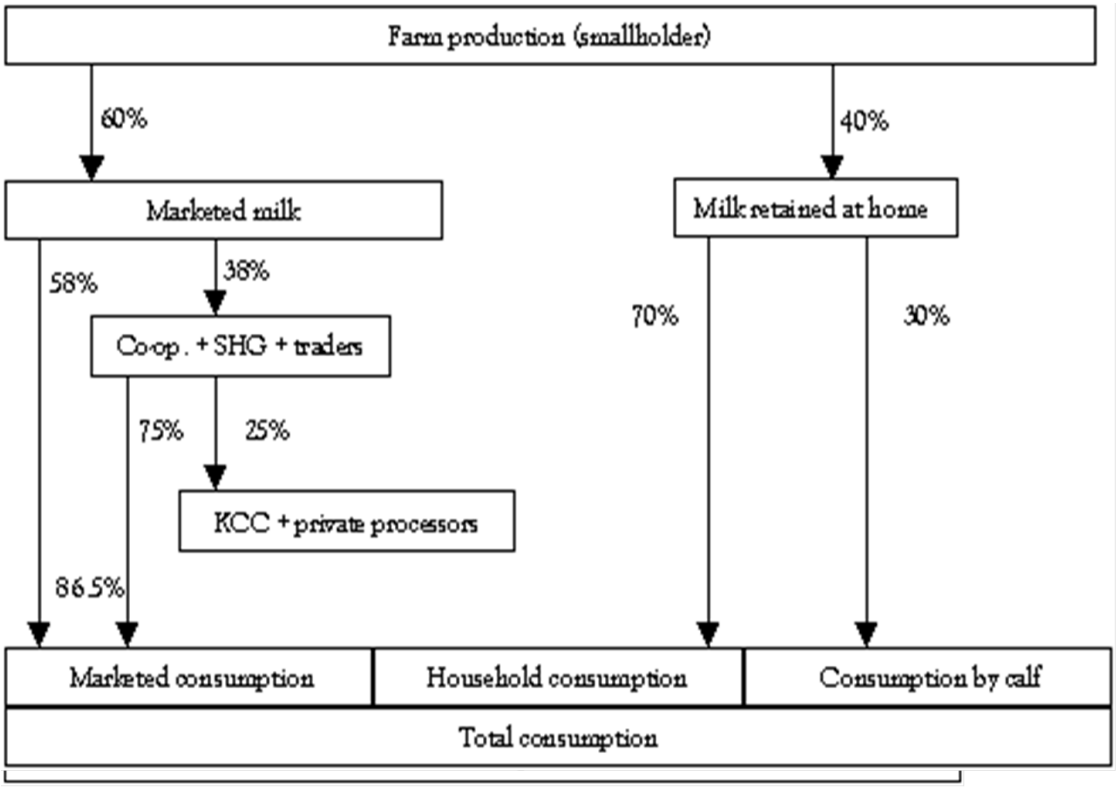
Milk produced from these farms is shared for home/local consumption and marketed through cooperatives in proportions of 40 and 60% respectively. About 20% of the marketed milk flow through processors that include Kenya Cooperative Creameries and other private sector players. The non-processed milk marketing channels include direct sales to consumers by farm households, milk collected by cooling plants, self help groups and individual farmers (Omore, Muriuki, Kinyanjui, Owango, and Staal, 1999).

Milk marketing

Informal marketing outlets absorb about 80% of the milk from smallholder dairy farmers. Brokers, traders/hawkers, transporters, co-operatives and farmer groups are the most important participants at the rural market. The farm gate milk prices in informal markets are about 22% higher than the formal marketing channel.

As such, the informal channel out-competes the formal channel by charging prices that are higher per litre. Furthermore, the players in informal markets have devised various methods of assessing milk quality and for screening their suppliers (Omore *et al*., 1999).

Cooperatives remain the main channel for collecting milk destined to the formal market and until the liberalization of milk marketing, Kenya Cooperative Creameries dominated in areas with high production with few alternative outlets.



Note: percentage indicate the proportion from the source:SGH=Self-help groups:K.C.C=Kenya Co-operative Creameries
Figure showing milk marketing channels.
Source modified from Omore et al (1999)

Marketing of milk for small holder dairy farmers is a hindrance to production. Understanding the market channels at play will assist in determining its influence on prices and motivation of farmers to produce milk. Dairy production in Kenya is faced by a multitude of perceived and often experienced risks, that include weak monitoring of markets, health problems among others and they contribute to high costs and low average production (Muriuki., 2003).

These factors and price fluctuations can cause low profit to the producer and therefore affect farmer motivation to invest in production of more milk. Much of the milk marketed by small scale farmers in Kenya has been reported to be of poor quality and does not meet national and International standards due to high bacterial load, drug residues (Shitandi and Sternson, 2004; Omore et al., 2005) and sometimes low density. Milk is a highly perishable commodity and a reliable market ensures its quick disposal and profit acquisition. The objectives of the current study were to determine the milk marketing channels, evaluate the constraints faced by farmers in their production process and the reasons for farmer motivation to produce more milk at Chepkorio division of Elgeyo-Marakwet County.

MATERIALS AND METHODS

Study area

The study was carried out at Chepkorio administrative division located in Elgeyo-Marakwet County, in an altitude of 2576 metres above sea level (ASL) at latitude 0.38^0N and longitude 35.53^0E. The area is sparsely populated with about 67,042 people. The production system in the selected sub-locations, which included; Chepkorio, Kamelil, Chebire, Kapsamich and Lelboinet was semi intensive with mixed farming as the main economic activity where specifically, farmers were engaged in small scale dairy farming and crop

production. The study focused on five representative agro-ecological zones that represent low, medium, high potential areas.

Research design

The study took place between the months of December 2013 and January 2014. Systematic random sampling method was used to select and interview a total of 50 small scale dairy farmers. The questionnaires used were both open and closed ended administered to farmers at the Division. The data collected included primary and review of kept records at milk collection points, farms and cooling plant.

Data analysis

Data was coded and entered in a spreadsheet of Microsoft excel and organized before subjecting it to analysis using the Statistical Package for Social Sciences (SPSS, 2007). The results were presented using descriptive statistics, tables and graphs.

RESULTS AND DISCUSSION

Growth in milk production depends largely on marketing opportunities, which in turn require modern processing, transportation and distribution (Mandal, G.K., Mandal, M. A. S and Rahman, 2009). The current study found middlemen, hotels and dairy cooling plants as the three main marketing channels employed by the small scale dairy farmers at Chepkorio Division. As shown in figure1, middlemen took half of the market share followed by dairy cooling plant and hotels. Middlemen and hotels are considered as informal while dairy cooling plants are formal milk marketing channel.

Most farmers prefer selling their milk through middlemen because they get prompt payment in cash and provide access to market outlets in the most remote areas, which is then transported to the major urban centre. In a study in India, Kumar (2010) found that despite the substantial growth of modern cooperatives, traditional milk supply chain still remains dominant. These informal markets seem to offer opportunities for the small and resource poor milk handlers to enhance their income (Kumar, 2010).

According to Shamsuddin *et al*. (2006), Milk prices in urban cities are double those of the farm gate in the rural area. Middlemen exploit this opportunity but they thrive well and pay farmers better under a competitive environment. Their milk handling involves high risks because they have no means of preservation during the process of collection, but they just pour it into stainless charns or plastic containers and rush it to town.

The 12% of milk marketed through hotels and milk bars are considered by the farmers as a reliable market, the prices are higher than co-operative societies, payment is obtained on weekly or daily basis and its proximity to the farm. Those farmers (38%) who preferred formal channel, dairy cooling plants, did so because they regarded it as a permanent market; they can easily get access to farm inputs like Artificial Insemination services, credit facilities, feeds and can invest in co-operative assets. This agreed with the findings of Mandal *et al*. (2009) who reported that up to 75% of farmers in Bangladesh take advances from processors to improve their dairy production through purchase of feeds and dairy cattle.

Figure 1: Milk marketing channels preference by farmer (%).

The 62% of the milk that was found to pass through the informal channels (middlemen and hotels) was lower than what was reported earlier (Staal, McDermott and Freeman, 2006 ; Kumar & Staal, 2010) who found that 80% of the milk marketed pass through the traditional channels. This could be as a result of improved payment by processors in the formal markets. Currently, there was an improvement by co-operative dairy societies and might soon topple the traditional milk marketing channels.

The milk prices offered to dairy farmers exhibited variations with the choice of milk marketing outlets. Figure 2, shows the mean prices of milk indifferent marketing channels. This study found that farmers fetched relatively high prices for milk sold to the dairy cooling plant directly. Milk supplied to intermediary individuals or organizations that include transporters and self-help groups to deliver to cooling/processing plants posse more risks and erosion of profit to the farmer. Mandal *et al*. (2009) reported that farmers quitted their cooperatives at Bangladesh to supply directly to processors to reduce risks. The development of milk marketing and processing plants both in the public and private sector and technical and financial support from government and non-governmental organizations will improve milk production in the rural farm (Mandal *et al*.,2009)

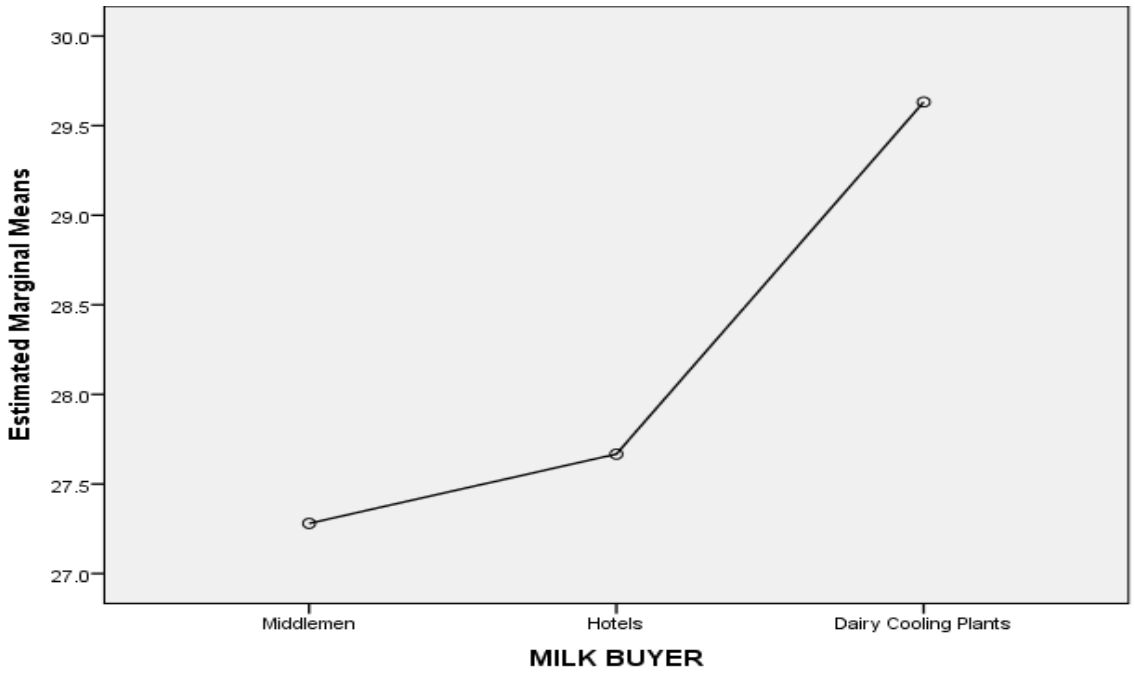


Figure 2: Milk prices per litre offered to farmers in different markets (Kshs)

The study, on the other hand, established the existence of different constraints to the production of milk as shown in figure 3. Financial limitations and expensive AI services were the major challenges faced by 34% of the farmers, shortage of feeds and financial problem affected 22% because most of them do not have other source of income except through small scale dairy production while other problems like poor breeds formed 4%.

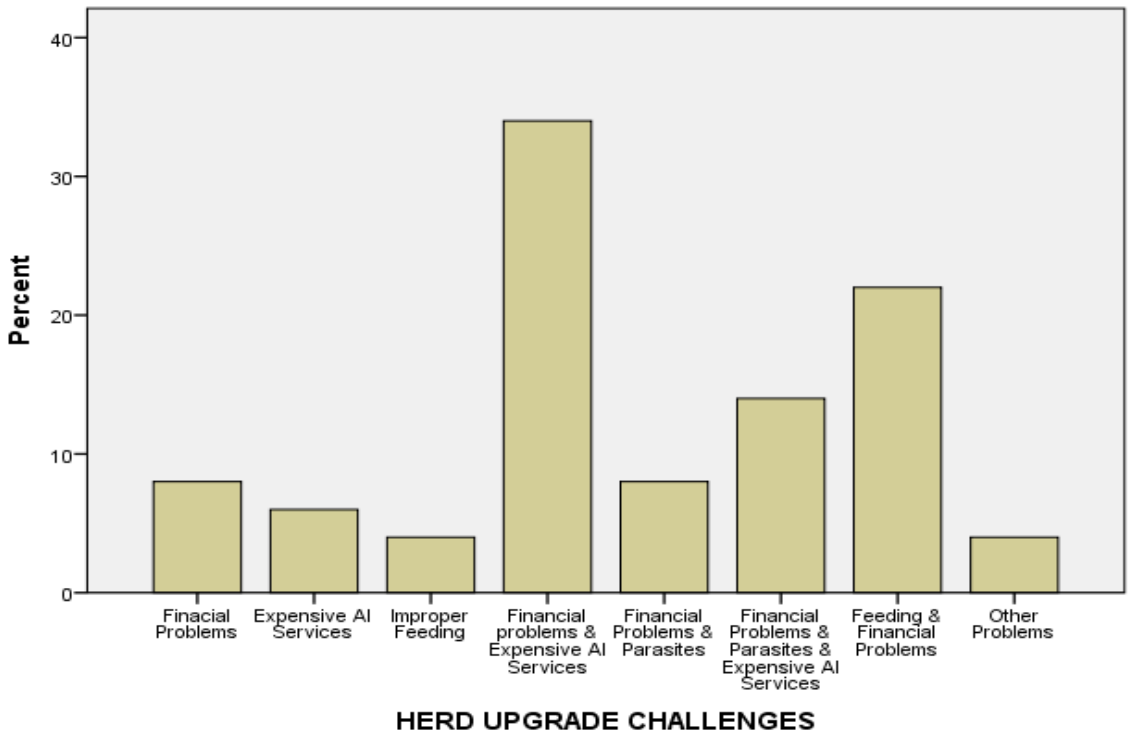


Figure 3. Constraints to herd upgrade and milk production

The detailed analysis of the constraints pointed to low milk prices as the main constrain to milk production as shown in figure 4. The other production problems identified included inadequate feeds, poor cattle breeds and only 2% reported their main issue to be poor road network, could be because the roads have been slightly improved by the newly devolved county government.

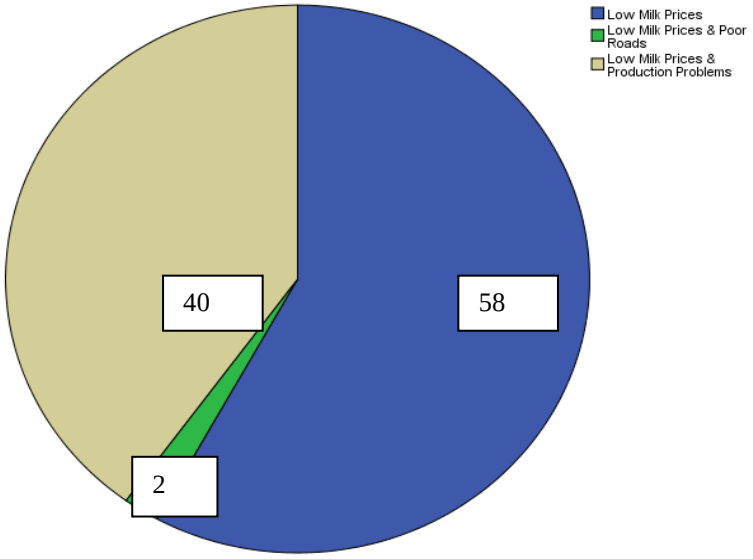


Figure 4. Farmer perception on the most pressing constraint to milk production (%)

Farmers (32%) wished to produce more milk for marketing and improve their income only if prices were increased in order to enable them to afford the purchase of concentrates and mineral. Another 10% of the farmers wished to improve the quality of feeds and practice crossbreeding in order to increase hybrid vigor and hence produce more milk in the long run, while only 6% were for the provision of affordable AI services.

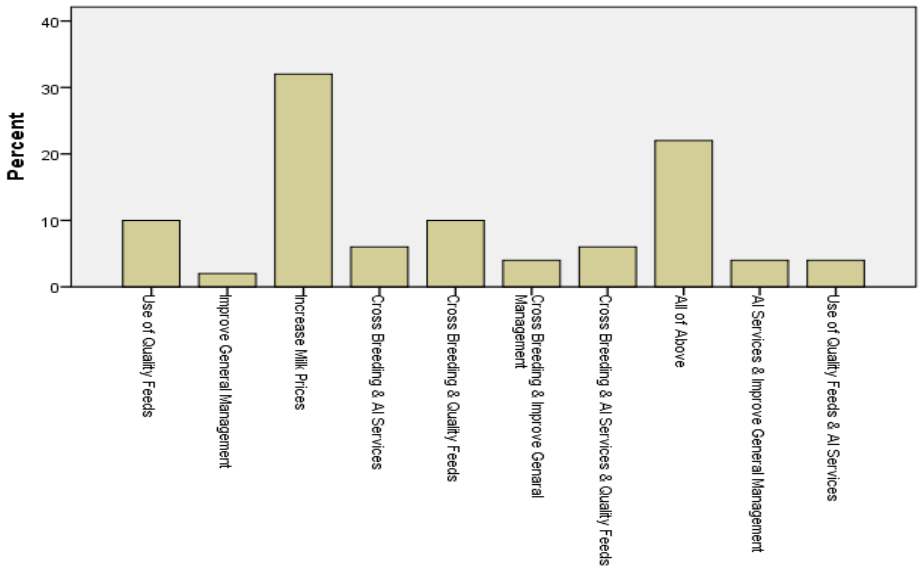


Figure 5: Farmers views on factors that have influence on milk production (%)

Figure 5 shows the views of farmers on how to improve the dairy enterprise. The main issue was the improvement of milk prices (32%), feed quality(10%) and improved breeding of their cattle.
The study established that farmers were motivated to continue the dairy business despite the numerous constraints. Towards this end, 74% of the farmer's plant fodder crops especially Napier grass and oats

while 26% of them did not. The former practiced conservation of the feeds by harvesting oats when it is dry and storing in bales for future use.

The study found that 74% of the farmers in the Division belonged to a dairy marketing group while 26% did not. Through these groups, they were able to acquire extension education services on how to increase their milk production through provision of knowledge on dairy nutrition and Artificial insemination services at subsidized prices. Out of the total number of farmers interviewed, 72% attended field days while 28% of them did not. Through this extension programme, farmers learnt practices on dairy farming for both subsistence and commercial farming.

Another 62% and 16% of the famers rated the price of the milk prevailing in the market as fair and good respectively, while only 22% rated it to be poor. This shows that majority are satisfied with the prices offered to them. These were indicators that farmers were motivated to practice dairy farming and continue the production of milk.

CONCLUSION

The study identified three main marketing channels in the area that included middlemen, which control 50% of the market and the milk buying price of Kshs.27.40 per litre. The second was the dairy cooperatives which supply to the cooling plant took 38% of the market and paid Kshs30 a litre and hotels accounted for the remaining 12% with an average price of Kshs 27.80. It was established that the farmers had their reasons why they preferred a particular channel. The study found out that in spite of growing presence of modern milk supply chain in the area, the traditional milk supply chain is still dominant. Commercial farmers were particularly motivated to sell milk to middlemen because they get their money easily and faster.

Most farmers experienced challenges while marketing their milk which included low prices per litre of milk, poor roads and expensive artificial insemination services.

Majority of the farmers grew and conserved forage feeds for future use like hay, attended farm field days and purchased artificial insemination services. These were good indicators that they were motivated to continue practicing dairy farming.

RECOMMENDATION

The government and non-governmental bodies should be active in providing extension education programmes, avail artificial insemination services and improve road networks in dairy producing areas. There is need for properly packaged extension messages on production of fodder, forages and supplementation to improve production.

By also encouraging farmers to be trained on the adoption of artificial insemination services will go a long way in improving the offspring's that would be born in future through selected characteristics. Farmers faced upgrade challenges and through provision of incentive pricing through sell of milk would enable them purchase more feeds and supplements.

Expansion of modern milk supply chain by far and large is dependent on the development of milk collection, cooling facilities either by dairy groups or co-operative societies and improvement of infrastructural facilities. Incentive pricing and rewards for quality produce would be important.

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