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Pages 7-14

The Gap between Farm Gate Price and Sale Price of the Fluid Milk Industry in Sri Lanka

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Abstract

Sri Lanka is largely self-sufficient with most animal products but not fluid milk production. However it has a potential of producing substantial amount of high quality milk but the issues and obstacles currently the milk industry is facing obstruct the production to its maximum capacity causing a huge gap between the farm gate price and sale price. Powdered milk is cheaper than fluid milk and is sourced from the international market. This is also a barrier, fluid milk industry to develop, although it has a considerable impact on the Sri Lankan economy in providing job opportunities. It is also important as a source of alleviating nutritional poverty in all age groups. And it is a source of extensive employment opportunities. Therefore this research is focused to identify the factors affecting to create a gap between farm gate price and shelf price of fluid milk and qualitative approach was used to achieve the research objectives. A simple thematic analysis was carried out to identify the barriers that create a huge gap between farm gate price and selling price of fluid milk. The required primary data were gathered through key informant interviews and secondary data through available literature on dairy industry. Thematic analysis was based on both secondary and primary data. Issues in milk processing and production Issues in distribution channels (High cost involving with transport, the lack of technology development and infra-structure facilities, the lack of sufficient yield, poor veterinary services and high production cost are the factors that create a huge gap between farm gate price and sale price of fluid milk in Sri Lanka.

Keywords: Dairy industry, Fluid milk, Farm gate price, Selling price.

1. INTRODUCTION

Sri Lanka is an agrarian country. Sri Lankan culture and every social event created around agricultural background plays a vital role in the community. The role of livestock in agricultural Sri Lanka is one of the sides which is comparatively complex and significantly different from that of industrialized nations (Ranaweera and Athapaththu, 2006). According to economic reports, the livestock sub-sector has contributed only around 1.2% (Census and Statistics, 2009) to the national Gross Domestic Product (GDP), although it is a crucial source of high quality protein, minerals and vitamins to the population, by way of milk, meat and eggs. Moreover for many rural smallholder farmers who are empowered with

natural resources, as livestock are a kind of 'living bank' that serves as a financial reserve for periods of economic recession. Dairy industry in Sri Lanka is also the most prioritized sub sector for livestock development at present. It has its validity in providing thousands of job opportunities and cheap animal protein to the nation. Trends in the industry could be mainly explained by imports of milk and milk products, milk production, formal milk collection and microeconomics of dairy farming in the country (Ranaweera and Athapaththu, 2006).

According to the statistical reports local milk and milk products is sufficient only to meet 33% (Census and Statistics, 2009) of the requirement at current consumption rate. The balance amount is

supplied by the import parity which cost around LKR 27(Census and Statistics, 2008) billions annually. This situation has geared up the local livestock sector to strengthen its capacity to beself-reliance of milk and milk products. The Livestock statistics indicates 1.13 million cattle and 0.37 million buffaloes in respect of milk and meat production for national requirement which is estimated at 33% (Census and Statistic, 2009). It further highlights that per capita consumption of milk and milk products in Sri Lanka is low compared to other South Asian countries and at present per capita consumption of milk is 3.6kg (Census and Statistic, 2009).

When compared with the global context the current status of the dairy industry in Sri Lanka is poor and cannot address the daily consumption level as expected as the local production of milk is only 30% (Censuses and Statistics, 2009) of the demand. Whilst there have been many political, technical and socio-economic factors contributing to the virtual stagnation of the dairy industry in the country, the very low farm gate price being one of the major contributors to this, it appears that the sector cannot continue to survive as a subsistence based activity, because it is only a secondary source of income to the farming community. It is apparent that if dairy farming is to be a profitable venture, there is a need for the small holder farmers to consider dairying as a commercial enterprise and at the same time link with the large scale dairy farms. This would require major policy changes, with a strong commitment and sustained implementation strategy by the government in partnership with the private sector.

The domestic dairy industry has capacity and capability of producing substantial amount of quality milk and milk products to the prevailing market at affordable prices while keeping reasonable profit margins to all stakeholders in the production marketing chain without damaging to the environment (NLDB, 2007). Hence it plays an important role in building a strong national economy by assisting to ensure food security, food safety and self-sufficiency via the means of providing income generating opportunities, alleviating poverty, mitigating regional disparity in income distribution and solving other critical economic

issues such as under nutrition, inequity, scarcity of foreign exchange, gender discrimination, environmental pollution and etc. It has special capabilities to develop rural economy by using locally available otherwise underutilized natural grasses, crop residues, agro industrial byproducts and wastes and knowledge and skills of rural community.

2. BACKGROUND OF THE STUDY

In recent years after the period of war crisis Sri Lankan government pay special attention towards the self-sufficiency from food industry and try to minimize the exported food items under the vision of MahindaChinthanaya(Mahinda Chinthanaya, 2005). Therefore to achieve the above objective government introduced several projects by Ministry of Livestock development such as dairy development project done by the NLDB and Mini dairy equipment supply project introduced by the Ministry of Economic Development.

According to the statistics, Sri Lanka imports 70,000 - 75,000 Metric tons (Central Bank Report, 2008) of milk powder annually spending a colossal sum of Rs.30 billion (Central Bank Report, 2008). To be self-sufficient in milk a further 482 million (Central Bank report, 2008) of liters has to be produced annually. It would be an impossible task to achieve this production target with the present production capacity. Improving the farmers' intention towards the dairy industry and improving the liquid milk consumption is one of the big challenge faced by the current government in Sri Lanka to improve the current production.

According to the Mahinda Chinthanaya published on 2005, "Only 15% of the domestic demand for milk is met by local production". Granting subsidies for local producers is a mechanism to ensure self-sufficiency at least to a certain extent, in milk production" (Mahinda Chinthanaya, 2005). Therefore a larger number of quality breeding stocks should be issued to the farmers if a progress is to be achieved in dairy development. At present, the contribution of NLDB is around 2% (NLDB, 2007) which is inadequate to make impact in the Dairy sector and it is imperative that the NLDB has planned to increase the

milk production up to 7% (NLDB, 2007) as a contribution to the national requirement. Producing more heifers to issue the farmers during the next five years will also ensure that high quality breeding material will be released to the farmers.

Sri Lankans' perception towards liquid milk consumption is not favourable compared to milk powder (Mahinda Chinthanaya, 2005). Therefore to changing the perception of the customers is also another challenge to develop dairy industry in Sri Lanka.

3. INDUSTRY OVERVIEW

Milk is currently sold through a combination of private and public organizations working in tandem with each other. Until 1981, farmers sold their milk to the National Milk Board (NMB). In 1981 introduced the liberalization and privatization, Nestlé is the major player in the milk industry and they are holding 80% of its shares. More than 25,000 (Census and Statistics, 2009) farms included in the Nestle network and represents an estimated 40% of the total fresh milk collected nationwide. In 1981 through the government-owned Cooperative Wholesale Establishment (CWE), Lanka Milk Foods (LMF) Ltd was established to package and distribute imported milk powder. Currently, LMF maintains an important market position in the milk-food industry, with its key brand of full cream milk powder Lakspray and a capacity of 48 000 (Census and Statistics, 2009) million tons per year. Fonterra, another private company with New Zealand investment that sells a range of Anchor brand products, has been in Sri Lanka for many years. Furthermore Government has a major involvement in the state-owned milk processing company MILCO, which engages in milk collection from farming areas. It also processes fresh milk, marketing under the Highland brand. The private sector is also engaged in milk collection and processing, but due to the low volumes in the production areas, there is wasteful competition by the different collecting agencies fighting for the available milk in a given area. In addition, the lack of other marketing infrastructure, such as chilling tanks and transport vehicles, compound the problem (NLDB, 2007).

4. PROBLEM STATEMENT

According to the study conducted by the request of European parliament committee on Agriculture and rural development, written by the Agra (2007) the CEAS consultant, under the topic of "The gap between producer prices and the prices paid by the consumer" identified the issues which create the gap between producer price and retailer price of the food product in the European countries. However the studies carried out in the local context to identify the issues in dairy sector of Sri Lanka is very limited (Agra, 2007). Identifying the reasons behind the gap between farm price and shelf price in Sri Lankan context therefore is timely important as subsequently addressing these issues can immensely benefited to farmers and the end consumers so this is to focused to examine the issues of the dairy industry and the factors behind the gap between farm gate price and the sale price of the fluid milk in Sri Lanka (Agra, 2007).

5. OBJECTIVES OF THE STUDY

- ❖ To identify factors behind the gap between farm gate price and shelf price of fluid milk
- ❖ To highlight the impact of identified issues on production and distribution in the Sri Lankan Dairy sector

6. LITERATURE REVIEW

The existing literature especially focuses on global and local experience on dairy industry and the factors that affect to create huge gap between farm gate price and sales price of the fluid milk in local context. By referring several research and reports done by Ministry of Livestock Development and National Live stock Development Board of Sri Lanka during the past few years, it can be identified that the issues of milk processing, issues in distribution channels, lack of technology are affecting on less production of fluid milk creating uncertainty at present market. After a war situation of thirty years, Sri Lanka faced a food and financial crises as the whole world faced in year 2008 and 2009. This condition however has stimulated governments to pay more concentration on the value of food and nutrition security as essential components on political stability and socio-economic development.

By Mahinda Chinthanaya (2005), the attention paid on local dairy industry has been increased and more concerns over sustainability and consumers demand have been given as efficiency improving requirements of the industry. As demand for milk has been dramatically increasing in the world, dairy sector should continuously look for innovative methodologies and solutions to address such trends and improved value added through certain mechanisms (Ibrahim et al., 1999).

According to Rashid (2004) who conducted a study on contemporary practices of dairy farming in Sindh, found that the major parameters for per day milk production were as milking system, feed manual follow up, commonly used equipment's on dairy farms and hygiene. Moreover he described that modern technology usage for milk processing and performance of the distributional channels also influence on improving the dairy sector.

Further the dairy development project survey done by the National Live Stock Development Board (NLDB) in Sri Lanka found that standardize training programs conducted by various training institutes specially the training programs for the dairy industry create positive influence on minimizing the gap between producer price and sale price paid by the consumer (NLDB, 2007).

Burrior (2005) indicates that most important components of the dairy sector are external environment of dairy farming which include price adjustment of milk, availability of labour, and competition in milk market. He found that external environment plays a vital role in farm management and is an essential ingredient in success of dairy enterprise. External environment of dairy farm deals with price adjustment and the pricing of milk is a complicated phenomenon in Sindh milk market as milk is sold into open milk market where prices are fluctuated according to the quality and demand and supply level of milk. Furthermore he explained that, One liter of milk is sold in an open market from Rs.35 to Rs.55 and the other milk market is wholesale market where middleman or wholesaler buys milk from dairy farmers. The open milk market is covered by small farmers whereas large

and commercial dairy farmers sell their milk at wholesalers who buy milk on competitive rates from dairy farmers. Milk is bought on low rates and sold to customers on high prices especially in city retail milk market so the charges of milk are high which caused to decrease the liquid milk consumption rate within the country (Burrior, 2005).

Moreover Sri Lankan researchers Ranaweera and Athapaththu (2006) explained that, the high opportunity cost of labour discourages farmers from intensive dairy farming. Moreover Ranaweera and Athapaththu (2006) found that price fixing is combined with inefficient processing by the leading processors by which makes low profit margins for dairy producers in Sri Lanka. This, again is combined with lack of a clear dairy development plan and constraints on incentives to invest in or expand dairy operations.

Milk processing and maintaining quality of the liquid milk is a big challenge to the Sri Lanka, because of the lower usage of modern technologies, and technical knowledge of the dairy farmers in country side (NLDB, 2007). However, dairying is part of a partially closed, mixed farming system at the smallholder level. Some of the waste of the dairy unit, such as dung, urine and wasted-feeding materials are used as manure for crop farming; some of the crops and crop wastes are fed to animals. In addition, the cultivation of forages has helped to control soil erosion and improve soil fertility. Hence, dairying at the smallholder level is an environmentally friendly activity when it is properly managed within the farming system (NLDB, 2007). Furthermore "Smallholder dairy farmers are the only groups of people who have safeguard the domestic dairy industry under enormous amount of hardships and difficulties in the past. However, they have to be adequately rewarded financially, socially or any other meaningful way which cause to improve the productivity and minimize the uncertainty at the market. Lack of supply for the emerging demand cause to increase the sale price at the end. At the same time, it's cause to reduce the price difference between farm gate price and sale price of liquid milk" (NLDB, 2007).

In addition to that, National Live Stock Development Board identified through their survey

done in 2007 that, the failures in the milk distributional channels cause to create a big impact to increase the sale price of the fluid milk. Therefore with a view to overcome the above problem, NLDB Introduce individual milk testing and payment system at collecting points. Furthermore NLDB through the survey found that "Introduction of transparent milk collection and marketing system at all level cause to improve the supply chain" too (NLDB, 2007).

Investigating the difference between commercial and traditional dairy farm management patterns, Hossain(2008) found that the most important factor of dairy farming is marketing and distribution facilities.

Morgan (2008) stated that, in some countries, such as Pakistan, pasteurization and packaging nearly double the price of milk to consumers, which causes to reduce the consumption among the urban poor people. Further she explained that "giving the formal sector the exclusive right to distribute milk and milk products introduces one of the few economies of scale in dairy production, thus imposing a disadvantage on those selling to the traditional sector. Legislation related to milk distribution channels needs to be evaluated in terms of its economic impact on different stakeholders". Morgan (2002) highlights that the success of smallholder dairy operations and opportunities for scaling up are influenced by the high opportunity cost of labor relative to the farm gate price.

In Sri Lanka, the break-even ratio of the farm gate price to wages in 2008 was 1:13(Central Bank Report, 2008), implying that the value of 1 litre of milk sold at the farm gate equated to only one-thirteenth of local wage rates. This discourages intensive dairy farming and should be a critical factor to assess when evaluating opportunities for smallholder engagement in dairying.

According to the research done by Agra (2007) the CEAS Consultant, found that increasing producer prices caused to increase the gap between retailer prices paid by the consumer which causes to reduce the consumer consumption at the end. He further recognized that "producer milk prices" were at an unsustainable level when issues arises at the industry

such as less yield of the milk when affecting the seasonal changes or climatic condition, lack of knowledge of the farmers, less awareness towards the health of the cattle's, less capacity of veterinary services and etc". In contrast, these condition increases the consumer price and it created the gap between producer prices and consumer prices of the fluid milk (Agra, 2007).

7. METHODOLOGY

The research carried out on the dairy industry in Sri Lanka is very limited and however the available studies on the dairy industry are reviewed. This is mainly based on a qualitative research so primary data, were collected via direct face to face interviews and discussions with the key informants. In addition to that, secondary data gathered from databases of Ministry of Livestock development, Ministry of economic development, MILCO, NLDB and etc. This kind of interviews are qualitative in-depth and five industry experts were selected for the interviews. These chosen informants are with diverse backgrounds well-connected and informed community experts. The collected data carried out several evaluations, illustrations and extraction of some tendencies in processing and distribution of liquid milk and how it cause to create high sales price on shelf price of the retailer. The interviews were recorded and transcribed for future analysis purposes. The interview transcriptions then were read many times in parallel with the available industry data and literature to compare with. A simple thematic analysis was carried out to identify the reason behind the gap between farm gate price and selling price of liquid milk. Every time a theme emerged, it was compared with available literature and industry related data to triangulate data so the reliability of the findings is improved.

8. FINDINGS

After conducting a rigorous content analysis of interview transcriptions together with supportive data from available literature and industry related data, the following themes were emerged as the reasons that create a huge gap between farm gate price and shelf price of liquid milk.

1. Issues in milk processing and production : Milk processing is one of the main factor which affects to create huge gap between farm gate price and the sales price of the liquid milk, because of high production cost at the processing period. The cost of milk processing and production has become high due to the high electricity cost and expensive machineries need to use. Raw milk is supplied less due to substitute producers collecting the milk for products such as curd, ice cream and yoghurt.

According to Morgan (2002), Livestock Policy Officer in FAO Bangkok also consider issues in milk processing of Small farm holders cause to create higher impact on dairy industry in Thailand. Further in her research she explained that, availability of smaller processing facilities for village farmers cause to decline the productivity in dairy industry. Furthermore she explained, introducing modern milk processing units is one of the great solutions to minimize the barriers of the milk processing and cause to empower the dairy farmers within the local industry (Morgan, 2008).

Milk processing, milk preservation, storage capacity are some of the issues aroused in the dairy sector. Ibrahim et al., (1999) also found that the lack of capacity of milk processing is one of the issues identified from the appraisal done around all over the country in dairy farmers within Sri Lanka. Although this research stated that "not endorsed by international standards, there is apparent widespread use of hydrogen peroxide in milk collection, much of it used at the farm or collection point level is one issue. Other than that, there is strong incentive for farmers and market agents to preserve milk in situations where collection occurs only once a day. Because access to markets in some more distant areas may depend on the continued use of such bacteriological inhibitors, some consideration may need to be given to testing the more acceptable alternative, lacto-peroxides, in areas where appropriate. Further at present dairying in Sri Lanka is primarily dependent on pasture and fodder found on farm or from common property areas, with little the cultivation of pastures and fodder for purposes of dairying. Although the pasture development and extension is a function of the provincial DAPHs,

there is no strong institutional arrangement to spearhead a useful program for promotion of pasture and fodder for dairy production" (Ibrahim et al., 1999).

2. Issues in distribution channels (High cost involving with transport) : Issues in distribution channels is another factor identified on this study affecting to create gap between farm gate price and the sales price of the liquid milk. Less capacity of the distributional channels and less accessibility to milk processing locations which are only limited to the urban and sub urban area are greater issues in distribution channels of dairy industry in Sri Lanka. Ibrahim et al., (1999) also found that distribution of dairy stock is one of the main problem in dairy industry in Sri Lanka.

Ibrahim et al., (1999) further explained that the formal milk collection system in Sri Lanka revolves around collecting small quantities of milk from large number of small holdings scattered over relatively long distances so the farmers who do not have direct access consumers or retail outlets must rely on either private (informal) milk collectors, co-operative milk collection, or formal milk collection centers linked to formal dairy processors. Distance from major urban markets may or may not affect market access, depending on milk production density. The formal milk sector consists of public or private enterprises such as MILCO (now Kiriya), Nestles group, Nestles Lanka and small processors. The "informal" or raw milk market consists of sales directly to individual consumers and private milk collectors who then sell milk either to collection centre or to customers and institutions which creates a huge gap between farm gate price and the sale price of the milk at the end user. Oliver and Caspari (2007) have also concluded that in the milk and dairy product supply and distribution chains, there are significant differences in the development of producer-consumer price margins over the period.

3. Lack of technology development and infra-structure facilities : Sri Lankan milk industry lacks the new technology such as new milk processing methods and modern laboratory facilities. It also lacks domestic facilities like building, land, laboratory, water, and electricity according to the discussions carried out.

Lack of the technology and lack of the

awareness towards the modern technology is common issue in Sri Lanka (NLDB, 2007). Sri Lanka as the third world developing country and majority from the population lived in rural areas with limited infrastructure facilities and limited accessibility to the new knowledge cause to reduce milk yield and create the uncertainty in the market. As well as less storage capacity of liquid milk causes to turn the intention of farmers towards liquid milk and they are always quick to supply their yield to the other substitute products such as curd, yoghurt, milk to fees and etc. In addition to that fast expiration time of liquid milk, unavailability of milk refrigerate receptions and storage and cooling tanks cause to increase the wastage of the fresh liquid milk (NLDB, 2007). Therefore the lack of technology cause to creates uncertainty of the liquid milk in the available market which directly affects to increase the sales price and create huge gap between farm gate price and the shelf price of the end user.

4. Lack of sufficient yield : Sri Lankan livestock development ministry identified that at present the contribution of NLDB limited to only 2% of milk requirement of the country which is absolutely inadequate to make impact in the dairy sector (NLDB, 2007). However it had taken steps to increase the milk production up to a contribution of 7% against the national requirement while producing more heifers to issue for the farmers during the next five years for which purpose our farms could be utilized as resource centers to supply improved breeding material to the farmers. In addition to that seasonal effects, such as high raining density reduce the milk yield which causes to fluctuate the sales price of the milk. Less farm foods and less number of breeding capacity from the cows also affect the yield of milk (NLDB, 2007). Especially during drought seasons due to cattle getting less foods it effects on less milk production. Less support of veterinary service when cattle are suffering from deceases also affecting badly to reduce milk yield by cattle.

5. Poor veterinary services : The other factor which affects on the less production capacity is the cattle diseases and poor performance of the veterinary services. The less awareness of the cattle

owned farmers about deceases and poor practices of avoiding diseases from the cattle are also affecting on a less production which will finally result in low production of milk. This will eventually cause to reduce the density of milk yield which creates the uncertainty in the available market which directly influence to increase the sales price of the milk.

The livestock development board of Sri Lanka establishing diagnostic facilities in veterinary and animal quarantine offices and expanding of mobile veterinary services causes to improve the capacity of milk production (NLDB, 2007). Agra (2007) stated that, well-documented health management practices for minimizing the risk of infection and productivity loss is very crucial in milk industry. Moreover he found that, disease constraint the dairy productivity and it needs to improve so the delivery of veterinary services to dairy farmers and improving the quality of those services, especially for preventive medicine is vital (Agra, 2007).

Health status of the cattle and veterinary services is one of the main factor affecting to the dairy production and at the end sales price of the liquid milk (Ibrahim et al., 1999). They further highlighted that disease constraint the dairy productivity and it is associated with the need to improve the delivery of veterinary services to dairy farmers and to improve the quality of those services, especially for preventive medicine. Clearly these are policy and institutional rather than technical issues. A recommended approach to the strengthening of veterinary services is therefore needed to associate their delivery more directly with organizations collecting and marketing milk as a transitional stage to private sector delivery.

6. High production cost : High production cost is the other variable which creates huge gap between farm gate price and sales price of liquid milk. Requirement of modern technology, expensive machineries, and expensive milk flavors which needs to export from the other countries and laboratory technology, higher electricity charges and lack of skilled and knowledgeable people including labor cost cause to increase the overall production cost. More over labour cost is another problem at very first stage of

the milk processing specially in the farms. High labour cost involve with collecting center operations is also another factor to find a higher production cost.

Ibrahim et al., (1999) also highlighted that higher labor cost is another barrier faced by the Sri Lankan dairy sector which creates a huge gap between farm gate price and sale price of the fluid milk. A rough estimate of milk price/wage ratios in Sri Lanka is approximately 1 to 13. Thus the value of one litre of milk sold at farm gate is only one thirteenth of a day's wage. In India, on the other hand, where farm-gate milk prices are higher yet wages are lower, in Gujarat for example, the same ratio is approximately 1 to 4. The relative value of milk is thus much higher, as a litre of milk pays for nearly a quarter of a day's wage. Similar results are found when Sri Lankan wage/milk prices ratios are compared to other developing countries, which is linked to the relatively high per capita GDP in Sri Lanka.

9. CONCLUSION

Sri Lanka raw milk industry being relatively new, is facing many challenges such as poor distribution channels, high labour cost, poor veterinary facilities, less skilled labour, poor storage and other technical facilities. With the new economic concerns that raw milk production should be encouraged than powdered milk, the higher price has to be paid for fresh milk is a major challenge that government policy makers must address. The proper mechanisms to avoid or control these barriers is apparent to be a must to reduce the gap between the producer price and selling price of fresh milk. These initiatives must be aiming at encouraging the small scale milk producers by correctly addressing the problems faced at their level that will be resultant in increased milk production. Increased milk production then will make fresh milk more available in the market so can expect the price to be reduced.

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REFERENCES

1. Ministry of livestock development (1996). *Appraisal of Sri Lanka dairy Sector*. Peradeniya: Department of Animal Science, University of Peradeniya.
2. Burrior, W. (2005). Dairy Sector and External Environment. *Journal of socio economic development*, vol 5, pp 23-25.
3. E.D Jesse, B. C. (2008). *Basic Milk pricing Concept for Dairy Farmers*. University of Wisconsin.
4. Hossain. (2008). Difference between Commercial and Traditional Dairy Farm Management, *Annal University of patronesia*.
5. A. Joseph (2008). Key Informant Interview. In *UCLA Center of Health Policy Research*. UCLA.
6. M.N. Ibrahim, S.J Staal, S.L Daniel, W.Thrope. (1999). Sri Lankan Dairy Sector Development, *Journal of Socio economic*, vol 7.
7. The Vision for Future(2005). *Mahinda Chinthanaya*. Colombo.
8. Mohammed, .A.M Ahammed, Simeon Ethui, Yemaras Assefa. (2004, October). Dairy development in Ethiopia, *Journal of Economic science*, vol 3, pp 23-24.
9. NLDB. (2007). *Dairy development Projiect*. Colombo: National Live stock Development Board.
10. Ranaweera, Athapaththu. (2006). Sri lankan Dairy industry, *Journal of Food Science*, Vol 2, pp 12-13.
11. Rashid, M. (2004). Study on Contemporary practices of Dairy Industry. 12-14, *Journal of Socio Science*, vol 3, pp 21-30.
13. Department of Census and statistic. (2008). colombo: pp 5-21.
14. Agra (2007). *The gap between producer prices and the prices paid by the consumer*. CEAS .
15. DCS (2008). *Annual Report*. Colombo: Department of Census and Statistic.
16. CBS (2009). *Annual Report*. Colombo: Central Bank of Sri Lanka.