

Policy Issues Related to Dairy Development in Sri Lanka

Introduction

Prior to the liberalisation of the economy in the mid 1970s, the import of dairy commodities to Sri Lanka was relatively small, and there was also no aggressive promotion of milk powder by the private corporate sector. However, this pattern changed after the economy was opened in the mid 1970s, and the dairy imports, mainly the full cream and skimmed milk powders, started to increase very rapidly. Many new players, including two multinationals, entered the trading of dairy commodities as it was a very profitable commercial activity with hardly any competition in the retail milk market. Furthermore, the international prices of milk powders were also very low in the early periods as a result of the heavy farm subsidies and export supports which were available in Europe and North America. The Sri Lankan consumers were therefore able to receive milk powder at relatively low prices for their consumption needs and the policy makers were also happy about the derived consumer welfare benefits from the imported milk powders.

This free flow of imported milk powders soon changed the composition of the domestic milk market. Before the trade liberalisation, the domestic milk production was nearly 63 percent of the local milk market with imports filling the balance. However, this pattern started to change very rapidly, and as a result the imported milk powder has become the dominant share of our milk market at present while the share of domestic milk production in the market reduced to 24 per cent.

The highly profitable trading of milk powders also paved the way for heavy advertising of milk powders by the powder packers, mainly targeting the growing child. Providing a glass of milk for children and using milk powder for tea whitening thus became a way-of-life for the average Sri Lankan family. Milk has thus become a very important commodity for the Sri Lankan consumer, and milk prices have sometimes become a major political issue causing very embarrassing situations to ruling governments.

The period of cheap milk powders in the world market started to change from 2006/2007 period due mainly to increased demand from fast-growing developing countries, high livestock feed prices, reduced public stocks in the European Union and supply shortfalls in Australia due to prolonged droughts. These price escalations have come to stay for some time, and Sri Lankan government has been very concerned about the drain of foreign exchange on the import of a commodity which can be easily replaced with fresh milk that can be produced locally.

Estimating the size of the formal milk market in Sri Lanka is difficult given the absence of reliable statistics and information. The milk production estimates of the Department of Census and Statistics are helpful only from the year 1998, since the figures published by that department had been revised from 1998 based on the production data estimated at the 2002 Agriculture Census. However, milk import figures are available for a much longer period in Sri Lanka customs trade statistics.

Table 1: Milk production and imports in Sri Lanka from 1970 to 2007

Year	Production (Million litres)	Milk powder imports (tonnes)
1970	n.a	12,576
1979	n.a	23,433
1990	n.a	29,116
1998	177.09	53,610
1999	179.88	54,051
2000	181.46	56,814
2001	183.02	52,125
2002	183.20	61,929
2003	186.80	62,929
2004	190.29	54,018
2005	192.74	52,789
2006	196.62	68,101
2007	202.00	61,663

(n.a. - Not available.)

Sources: Agriculture Statistics, 1996-2007, Department of Census and Statistics and Trade Statistics, 1970-2007, Sri Lanka Customs Department.

From Table 1, it is clear that the milk powder imports have increased dramatically after the deregulation of trade and exchange control liberalisation. It is apparent that the milk powder imports have been growing at an annual rate of about 5 per cent whereas the national milk production has increased only by 1 per cent per annum during the recent past.

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Demand projections for milk using past data suggest that there is a growing gap between demand for milk products and the volume of liquid milk produced domestically (Figure 1). Unless this gap can be narrowed, Sri Lanka can expect, starting from the next 3-5 years, increased drain of foreign exchange on milk imports and embarrassing price increases of dairy products to local consumers.

These economic impacts are likely to be very serious in time to come, because of the large volumes of milk powder that will be needed to bridge the demand gap and because of the likely high international prices of dairy commodities in the future.

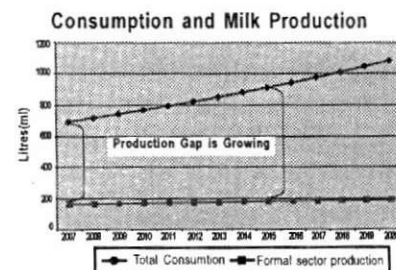


Figure 1. Projected milk consumption and milk production in Sri Lanka from 2007 to 2020

This paper reviews the dairy development policies adopted in the past, analyses why policies adopted had not been effective and highlights issues which need to be addressed for a meaningful development of the dairy sector of Sri Lanka.

2. Review of the Policy Environment for Dairy Development

2.1 Supply promotion policies

a) Institutional strengthening to support dairy development

In the early development periods, supply expansion of dairy products was the principal policy goal of the governments. The Department of Animal Production and Health (DAPH) which was established by carving out of the Department of Agriculture in 1978, became the primary government organisation responsible for dairy development with the support of the

then National Milk Board established in 1957 for milk collection and processing. Extension services including artificial insemination options and natural services from improved bulls through stud centres, skills development of farmers and supply of cattle and buffaloes for breeding through a network of government livestock farms were adopted as primary strategies for developing the dairy sector from the post independent times. These remain as principal elements of the current strategic framework for dairy development.

The conversion of National Livestock Development Board farms, which were meant for holding grounds for beef cattle, into dairy farms in 1978, further strengthened the supply promotion policies.

Then, the World Bank in 1982 came forward to assist Sri Lanka in adopting the Indian model of dairy development after the success story of Amul dairy of Gujarat. Under that programme, a major institutional restructuring was also carried out in 1986, when the National Milk Board was converted to a company, the present Milco Pvt Ltd., to facilitate a more commercial orientation in the milk processing sector. A separate entity by the name of Dairy Development Foundation (DDF) was also created under the same initiative to be the apex body for financing development of dairying, including coordination of production and marketing activities in the country.

However, the service delivery model for on-farm dairy production remained unchanged from the earliest days. The government veterinary office with staff strength of one veterinarian and three or four trained technicians was the centre for dairy development at the grass-root level. This model has been expanded in line with the supply promotion policies of successive governments. As such, the number of veterinary offices was increased from 111 in 1980 to 278 by the end of 2007.

There is a widespread institutional structure servicing the livestock sector with devolution of powers to provinces to address the technology transfer and development needs of the livestock sector. However, except the poultry sector, the expansion of the institutional structures have not had any tangible impact on the growth of livestock population and dairy production.

b) Banning slaughter of cows

The institutional strengthening as a means of promoting dairy development was complemented with an administrative decision for banning slaughter of female cattle and buffaloes in 1987. The intention of this policy at that time was primarily to save the draught animals from going to the beef trade for use as farm power with secondary impacts on the local milk industry. However, this decision too has not been able to save the decline of the national cattle herd. The cattle and buffalo population 1,902,617 at the time of 1982 agriculture census had reduced to 1,507,001 by the 2002 agriculture census.

This administrative decision is therefore now made a law with effect from November 2007. Accordingly, the penalty for slaughtering of milking cows had been raised to Rs 50,000 and a jail term of three years. It is hoped that this policy will arrest the decline of the national dairy herd, and will also be a deterrent to the ever increasing cattle thefts, which has become a major obstacle for dairying. However, since no farm registration and cattle identification are practised by all government veterinary surgeons, there still remains loopholes in the implementation of legal provisions regarding illegal transport of cattle and hence it needs early attention to strengthen the slaughter ban imposed recently.

2.2 Fiscal and monetary policies on dairy development

a) Special credit programmes

The supply promotion policies for expanding on-farm dairy production has been complemented with several concessionary credit programmes since the early 1970s, as non-availability of credit was identified as a limiting factor in the dairy development. These included the dairy loans under the International Development Agency (IDA) Dairy Development Project (1970s), the Special Dairy Loan Schemes under the Sri Lanka Central Bank re-finance schemes (1970s and 1980s), dairy loans under the Asian Development Bank (ADB) projects on livestock development and perennial crops development (1983 to 2004), dairy loans under the Krushi Navodaya Programme (2006) and the Sri Lanka Central Bank coordinated special dairy production and processing loans (2008).

According to project completion reports of many of the completed foreign donor projects and Sri Lanka Central Bank sources, the utilisation of credit under most of the earlier loan schemes, however, had been very low. The reason for this poor credit

utilisation had been the difficulties in sourcing good-quality breeding cows for dairying and the low level of profitability of dairying in the past. As profitability of dairying was low, there was no incentive for farmers to save breeding animals from going to slaughter, resulting in the loss of valuable breeding animals.

The problem of shortage of breeding animals still persists and is a major issue. However, with dairy production becoming profitable now under the current price of milk, it is hoped that farmers will save their young stock and grow them as future breeding animals for their own animal replacement needs as well as to be available for purchase by others intending to start dairying.

Similarly, the newly-introduced credit scheme for milk processing where loans up to 300 million rupees is made available at concessionary rate of interest has created a great interest among the private sector. Many private sector agencies are planning new investments and this measure is likely to produce new milk marketing opportunities in the country, thereby benefiting the small dairy farmers.

b) Public spending

The period from the mid 1970 to 1990 saw increased public spending on dairy development in the country, mainly through foreign-funded projects. The major sources of such funds included the Dairy Development with Swedish and International Development Agency credit, Sri Lanka ADB Livestock Development Project, Netherlands Dairy Development Programme, Swiss Dairy Development Project and the Integrated Rural Development Programmes with dairy development components.

Since the early 1990s, the foreign assistance for dairying in Sri Lanka has ceased. The governments however continued to provide significant resources for the dairy sector under special programmes such as the Heifer Calf Raising Programme, Livestock Breeding Project, 1,000 Dairy Villages Programme, Liquid Milk Promotion Programme and promotion of Private Dairy Cattle Breeders. Furthermore, the government commitment for higher fiscal spending on dairy development was demonstrated when in addition to the budgetary provisions of the line Ministry of Livestock Development, an additional Rs 50 million was provided for the dairy villages programme in the 2005 budget, and another

Rs 100 million was provided for expansion of milk chilling facilities in the budget of 2008.

Also, since the mid 1990s, several tax concessions, tariff reductions and value-added tax (VAT) exemptions on certain capital goods for dairy production were also made available as further fiscal incentives. Similarly, VAT on locally-manufactured dairy products was removed from 2008 as a further incentive. Tax holidays for varying periods were also offered both under the Inland Revenue Act and the Board of Investment (BOI) Law for new companies engaged in dairy production, provided they satisfy certain minimum criteria on investment, employment of labour and plant/project location. VAT and duty on semen and breeding animals for dairying had been removed since 2007 as an incentive for private cattle breeding.

However, the free flow of milk powder from abroad, virtually duty free, prevented remunerative farm-gate prices for domestically-produced milk. Also, the service delivery was not adequate to support the dairy development needs of the small farmers. These deficiencies had negative impacts on the programmes of increased public spending and other fiscal measures provided by the government to encourage dairy development.

2.3 Trade and tariff policies

The protectionist trade policies adopted by the government before the liberalisation, where a tariff rate as high as 60 percent was applicable for certain dairy products. But, milk powder was at times duty free or was taxed very low rate of 5 per cent even during the closed economic regime. While the tariff on imported milk powder at the time of opening the economy in 1978 was only 5 percent, the tariff on liquid milk was as high as 60 per cent. It is, therefore, difficult to understand how the policy makers at that time thought it was good enough to charge a prohibitive tariff on liquid milk leaving a close complementary good of full cream milk powder imported virtually duty free.

In spite of the supply promotion policies and increased public spending on dairy development, the governments from these early days had allowed imported milk powder to enter the local market at very attractive prices, negating its own efforts of dairy promotion.

The reconstituted liquid milk using imported milk powder was relatively cheap, and hence the

landed cost of imported milk powder was a major determinant of the retail price of locally-produced liquid milk. Because of the low tariff on imported milk powder, the producer milk price had been maintained low over the past years, and the resultant low profitability of dairying in the country was a major issue which made unhappy many of the donors who assisted the dairy sector in the past. Realising the need to protect the local dairy industry, government in the mid 1990s attempted to increase the import duty on milk powder and also prescribe a minimum threshold value for imported milk powder at the point of entry to the country. However, these attempts too proved futile due to heavy consumer lobbying and because of the political sensitivity of milk prices. The increased tariff rates, though announced with budget proposals, were never applied as a result, and many forms of exemptions were provided making the milk powder imports in Sri Lanka virtually duty free. The policy makers concern on the welfare of the consumers of milk powder at the cost of the local dairy producers is evident from the tariff applied at various times on the imported milk powder (Table 2).

Table 2
Taxes on imported milk powder in Sri Lanka from 1994 to 2008

Year	Nominal duty rate on milk powder (% of cif price)	Duty applied (% of cif price)	VAT (%)
1994 March	20	10	-
2000	10	10	-
2001	10	10	-
2002	10	10	10
2003	15	10	10
2004	15	9	15
2005	15	9	Exempted
2006	15	9	Exempted
2007	15	9	Exempted
2008 May	15	Rs 5/kg	Exempted

Note: CIF – Cost, Insurance and Freight.
VAT was introduced from 2002 and is a percentage on 105 of CIF value + ports levy + custom duty

Source: Ministry of Finance, Revenue Protection Orders, 1994 – 2007.

From December 2007, milk powder had been listed under the Special Commodity Levy Act No. 48 of 2007, where all taxes and levies on milk powder had been removed, and a flat rate of Rs 5 per kg of milk imported was levied to safeguard the consumers from the ever increasing prices of imported milk powder. It is therefore seen that the pricing policy on milk had been influenced by consumer interest at the expense of the domestic industry.

The government, however, was courageous enough to list liquid milk and milk powder under

the category of dutiable products under the Indo-Sri Lanka Free Trade Agreement of 1998. Similar arrangement is made in the Free Trade Agreement with Pakistan and the same status is believed to have been identified for liquid milk and milk powder under the proposed Comprehensive Economic Partnership Arrangement with India.

2.4 Raw milk pricing policy

The price that dairy producers received for their raw milk is influenced by the price of milk the state-owned milk processing agency. The National Milk Board (NMB) was established in 1957, and from that time to 1986 when it was converted to Milco as a fully government-owned company, the price that dairy producers received for their milk was influenced by the NMB price. Since 1986, the producer milk price in the market is influenced by the Milco-declared price. In both these instances the producer milk price is administratively determined ignoring the open market forces.

The price paid for milk was first on the basis of milk fat only, and later in the 1980s, milk protein content of milk was also included in the formula of milk pricing.

The producer price of milk was set administratively with the concurrence of the Minister responsible for the dairy sector, and as such, the milk price revisions did not have any rational basis. Very often, the price increments made were less than the general price increase of goods in the economy and thus eroded the real incomes of the dairy farmers.

With the opening of the milk collection to the private sector in the mid 1980s, the government expected competitive pricing for raw milk reflecting the cost of milk collection. However, this has not happened, and even the private sector dairy processors simply follow the prices set by Milco in purchasing milk from the farmers.

The influence that Milco has on raw milk prices in the market is used by successive governments to change producer prices. Also, the policy makers since recently have taken the raw milk price as a major issue, and as such the price revisions were made with the annual budget proposals. Accordingly, the budget proposals of 2004, 2005 and 2008 made price revisions of the Milco purchase price of milk, and the farmers now receive between Rs 30 to 40 a litre of milk based on its constituents.

3. Need for a New Approach for Dairy Development

The policy measures adopted so far has provided the required tax benefits and duty concessions on capital goods for the dairy farmers as well as the product manufacturers. It has also ensured the availability of concessionary credit for the dairy sector, and has been able to create awareness about the value of liquid milk and a renewed interest on liquid milk consumption. Also, the collective concept of dairying to get the advantages of scale economies has been demonstrated to be feasible under the 'Dairy Villages' programme. The government has been consistently saying that dairy sector is an important sector in the economy and has even attempted a partnership arrangement in the mid 1990s with the National Dairy Development Board of India to manage the state-owned milk processing factory and provide the leadership for dairy development in the country. However, the current state of the dairy industry suggests that policies adopted so far have not been able to make any tangible impact on the dairy sector and there is an urgent need to seek a new approach. The following suggest the inadequacies of the past approaches.

- The cattle and buffalo populations at the 1982 Census were 1.35 million and 0.55 million, respectively and these numbers have come down to 1.2 million and 0.3 million respectively at the time of the last Census in 2002. Reduction of the national herd is not a major issue. What is important is the herd improvement and productivity gains from the animals. However, the national milk production data does not suggest either, and what we have been witnessing is an increase in milk collected for processing at ever increasing costs. These figures also cast serious doubts about the governments stated objective of achieving 50 percent self reliance of milk by 2015.
- The expenditure on milk powder imports was Rs.319 million in 1978 at the time of economic liberalisation. The share of this expenditure on total food imports was only 7.3 percent. However, with economic progress, the

food imports have risen, but the proportion of milk powder expenditure of import bill has risen to 14 percent by 2007 indicating the level of insecurity on dairy products. Judging by the rate of growth of the milk market, it is projected that the expenditure on dairy imports by 2015 could rise to 25 billion rupees causing major implications on the trade balances of the country.

- The shortage of quality breeding animals had been a perennial problem. Even though we have been practising artificial inseminations in the country for the last 50 years as a method of national herd improvement. The dairy sector has not been able to produce the required dairy animals in sufficient numbers as herd replacements and for expansion of dairy units.
- While the required technology for hygienic milk production on least cost basis using local feed resources is available with the technocrats of the DAPH, the dairy farmers in Sri Lanka are unable to produce milk at a lesser cost and with low bacterial content.
- Large inefficiencies exist in the entire value chain of milk collection to retailing with resultant low farm-gate prices for milk and poor profitability of dairying.
- Virtually there are no private sector dairy farms which are large enough to acquire new technology and serve as drivers of the small-holder dairy farms through lateral spread of technological advancements and best management practices.

4. Policy Options and Strategies

4.1 Maintaining competitiveness of dairying

A missing element in the past policies had been the policy on milk pricing ensuring a right producer price to motivate farmers to undertake dairying to satisfy the local demand for milk. Although the governments intervened from time to time to revise the producer price of milk, the prices have never reflected the real cost of milk as the prices set had to take into account the cost of reconstituted milk imported virtually duty free. This anomaly has now been corrected by market forces as a result of high prices of imported milk powders (Table 3).

Table 3
International Prices (US\$/tonne) of Full Cream Milk Powder from 2000 to 2007

Year	January	June/July
2000	1,625	1,900
2001	2,075	2,087
2002	1,637	1,238
2003	1,637	1,772
2004	1,825	2,100
2005	2,225	2,250
2006	2,175	2,100
2007	2,850	4,650
November '07	5,050	
December '07	4,800	

Source: Agriculture Marketing Service, United States Department of Agriculture.

The milk powder prices which rose very rapidly in 2007, reached a peak level of US \$ 5,300 a tonne in October/November 2007, and since then has started to come down demonstrating future threat from imports. The prices then fell to US \$ 4,800 a tonne in January 2008 and by May; it had come down to US \$ 4,400 a tonne.

According to Organisation for Economic Co-operation and Development (OECD)- Food and Agriculture Organisation's (FAO) Agricultural Outlook 2008-2017, grain markets are set to remain tight until 2017. This will therefore force high feed prices for dairy stock with resultant high prices of dairy products as well. However, high prices will also stimulate increased supplies and with elastic supplies of dairy commodities, it is likely that producing countries will expand production levels. Also countries which were not traditional dairy exporters in the past will tend to seize the current opportunities by producing for the international markets, thereby causing the world market prices of milk powder to come down in the long run.

Thus with increased production in response to the past high prices of dairy products in the world market, it is likely that the prices will remain well below the peak prices of 2007, but sufficiently high enough to make the local dairy production competitive against the imports.

The most crucial policy decision required at this time therefore is the maintenance of the present price differential between the imported milk and the domestically-produced liquid milk for some reasonable length of time in the event of falling international prices of milk powders by adopting realistic duty rates on milk powder. The tariff instrument can be used effectively to allow our dairy farmers adjust themselves to increase their production, improve their productivity, and be able to use the local feed

resources effectively to be competitive in dairy production. This will also allow the dairy processors to improve the efficiencies in the value chain of domestic milk so that they will be able to pass down a higher share of the consumer rupee on processed dairy products.

4.2 A policy on promoting commercial dairying

Even after five decades of national planning, the dairy sector in Sri Lanka is characterised by a large number of smallholders operating at near-subsistence level or as a side-line farming activity. While it is regarded that the dairy sector is an important sector for making a tangible impact on the economy, it is necessary that we create a strong driving force built into the industry which can stimulate the smallholders improve their dairy operations.

Before the Land Reform Act which put ceilings on private land ownership, we had a thriving dairy industry among coconut land owners operating on commercial scales. In fact, these land owners were the promoters of the National Milk Board in the 1950s, but sadly we do not have such dairy industrialists anymore.

The government policy therefore should be the facilitator of a commercial dairy sector which will be able to impart positive externalities to impact upon a large number of subsistence level dairy farmers. We need to create a set of entrepreneurs in dairying who will be able to demonstrate best management practices of dairying, utilising local feed resources for low-cost milk production and who will adopt scientific breeding for producing the required number of quality breeding animals for the dairy industry including the smallholders.

With the prevailing high prices of dairy products, private sector will be willing to venture into dairying provided the government also sends the appropriate signals for commercial dairy farms.

However, in order to attract these entrepreneurs, it is necessary that the government uses policy instruments such as distribution of state lands on long-term lease basis and launch Private Finance Initiatives for partnership arrangements with the National Livestock Development Board for commercial dairying. The government can evolve a method of screening the genuine investors in dairying as there will be many land grabbers who have no interest in dairying.

In leasing out state lands, it would also be appropriate to demarcate contiguous land areas as one block for establishing a cluster of commercial dairy farms so that other interest groups from the private sector can also be attracted to provide the related services for dairying. Related industries such as milk processing, feed milling and other specialised services required for dairy farming will then develop in the vicinity of such clusters, and milk production and processing can be carried out in a cost effective manner. The newly-opened areas in the Eastern province with vast extents of untapped land could be an area for such dairy clusters and in attracting the private sector for commercial dairying and provision of related services.

The facilitation of Private Finance Initiatives can be another useful policy instrument for promoting commercial dairy farms. The state lands under the National Livestock Development Board can be developed with private finances and be commercialised for a greater benefit, while retaining the state ownership of the entity. Such initiatives can import superior dairy animals and genetics for upgrading the local dairy stock, transfer production and processing technology to the local dairy sector and introduce innovative marketing and management methods so that low-performing state agencies can be active participants in the development process, without burdening the state coffers.

4.3 Improving the institutional arrangement for dairy development

The DAPH is the apex organisation in the public sector which provides technical leadership to animal production and animal health management. Among the different technical divisions, it has one for animal health management but not for livestock production. As a result, the small-holder dairy producers have been supported by a service delivery model which places too much emphasis on veterinary solutions and animal breeding rather than on better animal nutrition and total farm management solutions to the problems of the small holders.

Policy intervention therefore is needed to bring in the necessary changes in the DAPH structure to make it the key driver for dairy development in the country. For this to achieve, it shall designate a separate division within the DAPH which will be responsible for spearheading the dairy development primarily targeting the smallholders in the country. This division should perform a role similar to what the National Dairy Development Board of India

(NDDB) is doing for developing the Indian dairy industry.

The former DDF and/or the National Milk Board could not serve as effective structures for dairy development in the country due mainly to the lack of professionals and technicians competent to address the dairy sector needs. Given the size and the structure of the dairy sector in Sri Lanka, the DAPH with its island-wide network of units is the most appropriate agency to spearhead dairy development in the country, provided its structure is suitably modified. Unlike the creation of a new institution for dairy development, the required modifications to the DAPH to establish such an entity within the central and provincial DAPH structure will not be a burden to the treasury. The present DAPH structure can be easily modified to give the strategic thrust for the dairy development programme as was done by the NDDB of India.

The key challenge for the whole sector is reducing cost of milk production and increasing productivity of the large number of smallholders which is the dominant group of the dairy sector. The proposed dairy development division of the DAPH will have to perform a role similar to that of the NDDB of India in helping the small farmers produce milk on pasture, forage and other locally available feed raw materials, acquire technologies to bring in efficiencies for dairying, and thereby increasing the competitiveness of the local dairy producers to move beyond present subsistence dairy production.

4.4 Innovative approaches to marketing of milk

Due to the scattered nature of small-holder dairy farms and the heavy dependence of Sri Lanka consumers on milk powders, our milk collection as well as converting milk to powder cannot sustain in the long run under the new challenges of increasing global oil prices and the need to have an environmentally-sustainable system of milk production. Also, milk is a highly perishable commodity which requires refrigeration and the maintenance of a cold chain until final consumption of many dairy products, and therefore, storage and distribution are very energy intensive.

It should be the policy of the government to promote dairy products and milk marketing systems which require low energy intensive technologies and reducing the distance between the dairy producer and the consumer.

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Promoting regional-level liquid milk processing for reducing the distance between milk producer and consumers can be an effective policy instrument for the government in facing future challenges of milk marketing. It is a desirable option as it preserves many nutrients in milk and helps cut down energy costs.

The current programme of promoting liquid milk through sales outlet seems very popular among the public, and it can also be a very cost effective way of milk marketing requiring low energy. However, since milk can easily get spoilt or contaminated, it is necessary that a simple pasteurising process as developed by the Food and Agriculture Organisation is introduced and a mechanism to monitor the sales outlets is devised in collaboration with the health officials and local authorities to ensure food safety and hygiene.

Also, new technologies are available to produce long-life liquid milk with low-cost packaging with low energy use than the present practice of producing bottled sterilised. Promoting such low-

cost long-life milk production is another strategy useful to reduce energy costs. These methods are useful as refrigeration costs are avoided and milk can be distributed to remote villages and stored at room temperatures for nearly 3-6 months. These methods will also be useful in the current free milk distribution programme of the government to the children of vulnerable groups between the ages of 2-5 years in very disadvantaged villages.

5. Conclusion

The governments from the time of independence have recognised the importance of the dairy sector in the country and have taken various policy measures for its development. However, the availability of relatively cheap milk powders in the international market and the concerns about the large number of consumers, have prevented the governments in the past from providing the required price incentives for the dairy producers to expand dairy production in the country.

However, the rising global food prices including those of dairy products have increased the competitiveness of local dairy production and have

created new opportunities for the domestic dairy industry. It has also created a renewed interest among the dairy farmers as well as the private sector dairy processors for new investments to expand their operations. The past government actions have created a favourable policy environment, but it needs to be consolidated with a few improvements. Certain improvements to the policy framework, which require serious consideration, are suggested if we are to capture the current opportunities for dairy development.

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