Indian Dairy Development Model: Lessons for Sri Lanka

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Introduction

India is the largest milk producer in the world, producing 100 million tonnes of milk annually. Unlike many dairying countries in the world where milk production is based on highly mechanised large-scale cattle farming, India where 60 percent of the milk is produced from buffaloes, has achieved this fete through the efforts of a large number of small farmers, agricultural workers and landless labourers.

How these small dairy producers were able to perform a 'white revolution' in India is worth examining. At a time when there is a global concern about escalating food prices and the government is concerned about food security of its people, it is useful to see what lessons we can learn from our neighbour. Sri Lankan dairy industry exhibits many of the problems that the Indian dairy farmers experienced in the early days of their dairy revolution. As such, some of the approaches of the Indian leaders in the dairy industry will be very much relevant to us.

Similarly, the Indian Dairy Development model based on the producer cooperatives has seen the changing environment, where protections have started to diminish forcing cooperatives to change and adapt to the new market-oriented competitive environment. It is therefore appropriate to examine how India changed the small dairy farmers into a dynamic force and to learn from that experience and from the way they adapt to the changing environment.

Dairy Farmer Empowerment

From the documented literature, it is evident that there had been two major forces which were instrumental in bringing the milk revolution in India. One is a group of committed leaders who transformed the small milk producers of Anand village of Gujarat state into a dynamic and powerful cooperative movement. The other is the National Dairy Development Board of India, a statutory body under the Union Ministry of Agriculture in India, which helped to replicate the model of cooperative dairy development across India and also in certain countries outside India.

Most noteworthy among the group of leaders who shaped the evolution of the dairy producers cooperative movement in India are Sardar Vallabhbhai Patel, Moraji Desai and Tribuvandas Patel who were dedicated men of the Indian National Congress and having a strong socio-political influence on the dairy producers of Anand, ably supported by a dairy engineer by the name of Dr Vargese Kurian on technical and managerial matters.

The need for a strong institutional structure for the dairy farmers was realised during the 1940s, when the dairy farmers in the Kaira district were subjected to severe exploitation by middlemen. Kaira district where the Indian milk revolution started is described as the milk lake which, during the war days, supplied milk everyday to the milk deficit Bombay metropolis and also the British and Indian armies. During this time till the period of independence, milk collection from Anand and surrounding villages was under the control of a businessman by the name of Polson. The Polson Manufacturing Company had exclusive rights to purchase milk from the Kaira district through an executive order of the Bombay government.

Polson's styles of functioning and business ethos however, were not supportive of the dairy farmers. He did not have direct dealings with the dairy farmers and he had adopted a method of using agents to collect milk from the farmers. Though Polson insisted on daily cash payments based on the fat content of milk, Polson himself was not concerned about who actually gained from the transaction – producer or the collector. The farmers had to oblige to whatever price Polson's agents paid for their milk. Majority of the milk produced in the area was from buffaloes, and buffaloes being seasonal calvers, the milk production during the calving months of winter was much higher than the summer months. During these glut periods, farmers were worse off as they had to be satisfied with whatever they were offered by the milk collectors.

The Bombay government's executive order drove away many of the small independent contractors also. These small contractors were thus unhappy as they lost their milk trading activities. Similarly, the farmers too were not happy about the treatment they got from Polson. These two groups then attempted to join together and form a cooperative society, and contrived to obtain a contract to supply milk to Bombay themselves. These early attempts of cooperation by the dairy farmers however failed as there were different interest groups – farmers as well as traders and milk collecting agents.

When the dissatisfied dairy farmers put forward their grievances to their local leaders, Sardar Patel gave a simple solution. He conceptualised a two-tier cooperative model as a solution to the dairy farmers' problem. He put this idea in 1942 as a solution of empowerment of dairy farmers and redeeming them from the clutches of the middlemen who exploited them. He proposed that the dairy producers must organise themselves into a Dairy Producers Society at each village to market their milk collectively and stop selling milk to Polson's Agents. His idea became a reality only in January 1946, when two village dairy producers' cooperatives were first established in Hadgud and Gopalpura in Anand.

The distance from Anand to Bombay is over 400 km and Sardar Patel knew that milk has to be processed before it is transported to the metropolis. For this reason and for the reason to increase their share of the consumer price of the finished products, Sardar Patel emphasised that the producers should have their own processing plant. Also, without a processing plant, the dairy producers will be helpless he said, as they could not keep the milk they collected longer time. In order to get the scale economies for manufacturing, he proposed that the village dairy cooperatives should be united into one Dairy Producers Union at district level. The cooperation of all the village dairy producer

cooperative societies was thus made with the member cooperative societies electing their representatives to serve as directors of a district union. The first such dairy producers' district union was the Kaira District Cooperative Milk Producers' Union with head quarters at Anand. From the very beginning, it was also recognised that the purpose of the union was not just milk marketing, but also dairy development, and as such the district union established a dairy plant, a cattle feed plant and a veterinary and artificial insemination service delivery system.

The Anand Model and its Replication under 'Operation Flood'

The milk marketing model adopted by the Kaira District Cooperative Milk Producers' Union came to known as the Anand model of dairy development since it first started in Anand. The development was based on a three-tier institutional structure designed on the cooperative principles.

The first level of structures is the Village Dairy Producers' Cooperative Societies. Only dairy producers from the village can become members in these cooperatives. Members elect a nine-member management committee which takes policy decisions related to their activities. The day-to-day work is carried out by hired persons selected from the same village and who are well trained to perform various tasks. These include milk acceptance and testing, record keeping, making payments for milk, selling cattle feeds, providing artificial insemination services, etc. The primary societies are thus milk producing and procuring agents and retail outlets for cattle feed and semen for the 2nd tire structures at district level.

The Village Dairy Producers' Cooperative Societies in a particular milk shed federate into a dairy cooperative milk producers' union. The Board of the cooperative union is made up from among the chairpersons of the affiliated primaries, who formulate policies at the district level. Here too, the day-to-day management is done by qualified professionals.

The district union is the one which add value to the milk from the primaries through their processing plants and market these products under a brand name. The union also manufactures cattle feed and sometimes manage semen production centres to support the artificial insemination programme in their district. The union tries to get the best prices for their products and because of their scale economies and professional management, they are able to offer remunerative prices for the milk from village societies. The prices of cattle feed from them are very competitive and the farmers therefore are able to produce milk at relatively low costs. The profits from the manufacture of products are redistributed among the milk producers as a subsidiary payment.

With more district unions getting organised in the state of Gujarat, it had become necessary to organise a federal body at the state level to coordinate the activities of the district unions. This 3rd tier or the state federation provides a platform for sharing common benefits among the unions, avoids competition between district unions in product marketing and ensures rigid quality control for the products manufactured by the district unions. India being a large country with many regional imbalances in milk supply and demand, it has become necessary for milk to be shipped across districts and outside the state boundaries. The federal body at the state level therefore has become very useful for such coordination activities and maintaining quality control aspects.

The state cooperative milk marketing federation is the apex cooperative at state level with chairpersons of all the district cooperative milk producers' unions as members of the governing body.

One salient feature of this model is the spirit of cooperation exhibited at all levels and the true democratic principles followed in governance and the utilisation of professional skills and expertise in management and business conduct. This is evident from the fact that 1/3 of members of the management/board at the primary and union level retire every year to give way to others to get elected. Also, highly skilled professionals from marketing, information technology, dairy technology, veterinary and animal husbandry, human resources and finance, etc. are hired at union and federation levels and sometimes at village cooperative level to manage the affairs in an efficient and effective manner.

By 1960s, it was evident that the Anand model was creating a marked social change in rural India. The access to a higher share of the consumer price through a farmer-owned and farmer- controlled business model gave the required incentive for the dairy farmers to adopt scientific practices of animal husbandry and produce more milk at lower costs. It resulted in further increasing farm incomes and living standards of rural farmers. It was also possible to supply wholesome and hygienic dairy products at affordable prices to consumers and thereby making a nutritional impact among the population.

The prime Minister of India at that time, Hon. Lal Bahadur Shastri seeing what was happening at ground level, directed all states to adopt the Anand model for developing the dairy sector of India. Towards this end, the government created in 1965 a National body at Anand which is the present National Dairy Development Board of India (NDDB), which serves to spearhead the dairy development activities across India in collaboration with the state governments. The NDDB's mission was first supported by the World Food Programme in 1970 to undertake a programme of replication of the Anand model to improve the milk supply to 4 major metropolis, i.e., Calcutta, Bombay, Delhi and Madras. This programme which lasted in 1981 was the Operation Flood I of the NDDB. This programme was so successful, and it proved that an appropriate development model with government support could change the landscape of the Indian dairy industry for better.

Based on the success story of Operation Flood I, the government of India launched the Operation Flood II in 1979 as a national dairy project with an investment nearly five times that of Operation Flood I, to cover 150 medium-sized towns and develop 155 district cooperative unions.

Lessons from the Indian Dairy model

As a result of strong commitment from the government, a dedicated organisation for developing the dairy industry in the form of the NDDB, using a practical model of development based on the principles of cooperation and democracy and using professional expertise where needed, India has been able to transform from a milk-importing country to that of a milk-exporting country within a period of 60 years. It has also become the world's largest milk-producing country. The impressive growth in the Indian dairy industry can be seen from the Table in p.49.

Dairy cooperatives development in India from 1980 to 2007

Year	No. of dairy cooperatives (Nos)	Farmer members ('000)	Milk procured per day ('000 kg)	Liquid milk sales per day ('000 litres)
80-81	13,284	1,747	2,562	2,783
90-91	63,415	7,482	9,702	8,046
00-01	96,206	10,738	16,504	13,363
05-06	117,575	12,416	21,447	16,808
06-07	122,534	12,964	21,691	18,123

Source: National Dairy Development Board of India.

Sri Lanka too attempted to emulate the Indian example for developing its dairy sector. Dr.Kurian of the NDDB visited Sri Lanka on several times and was also in the management board of Milco when the latter organistion was run as a joint venture company between the NDDB and the government of Sri Lanka. We promoted dairy cooperatives under the World Bank as well as the Asian Development Bank-supported projects and even created a Dairy Development Foundation (DDF) to serve as the apex organisation for dairy producers.

All these initiatives however have not brought the expected results due to several reasons including our inability to create the necessary protection for our local dairy industry from the threat of subsidised milk imports. Also the DDF had a premature death due to lack of funds as the World Bank cancelled the loan.

In taking a lesson from the Indian example, we must ask whether it is necessary that we create a similar structure as in Anand to revitalise our dairy sector. We should also take note of the present economic environment in Sri Lanka and the marketing infrastructure currently in place, before new structures are created. Given the multiplicity of organisations engaged in milk collection and marketing in Sri Lanka, varying from dairy farmer cooperatives, dairy farmer-managed societies of Milco, livestock breeders associations and private organisations, it is neither possible to replicate the Indian Dairy Model nor it is even necessary. We need not simply try to replicate the Anand model, but only take its principles. The macroeconomic conditions which prevailed in India at the time when the dairy producers' cooperative movement first started were quite different to the present conditions in India, and so are in Sri Lanka. The NDDB has acknowledged the weaknesses of cooperatives in a market-driven environment, but it strongly emphasises the need to have institutional structures that follow cooperative principles and uphold the interests of the small producer. The government of India, in fact, has made changes in the statute to register cooperative businesses as companies with suitable adaptations so as to ensure that the members of such companies are necessarily 'primary producers'. These Producer Companies combine the institutional and philosophical strengths of a cooperative with the flexibility and autonomy provided under the company law.

So our focus should be not just replicating the 3-tier organisational structure of the Anand model. Our goal should be to help the various milk collecting agencies working on the principles of democracy, cooperation and equity, and to be able to negotiate with the dairy processors to whom they supply milk, for a higher price for their milk. Even the dairy processors know very well that it is in their own interest to have a happy and contended farmer body, because they will always have to go through an intermediate agency, be it a cooperative or company or a milk collector, to source their milk. Some of the corporate entities engaged in milk processing have identified dairy development activities as part of their Corporate Social Responsibility actions, and have set aside sizeable budgets for such development activities. The corporate organisations too can be used to influence good governance practices in milk collection agencies. It is therefore necessary that we create a situation where both the dairy farmers as well as the dairy processors are winners in a profitable local dairy industry.

Most of the milk collecting agencies at present however, do not have trained staff to attend to day-to-day operations, leave aside any dairy development work. Also, there is very little dairy farmer involvement in governance matters in these entities. As a result, there is financial indiscipline, mismanagement and corruption to the detriment of these agencies.

In helping the various structures we have created, the Department Animal Production and Health assumes a major position. It can play the role the NDDB performs in India by having a special focus on dairy development and dairy farmer empowerment. It has a wide net-work of agencies at the grass-roots level, but it requires certain modifications to its administrative structure to provide the required framework for a meaningful exercise on dairy production and development Similarly. the Department of Cooperative Development can provide the necessary technical and financial help to the existing dairy cooperatives, so that they can expand their business operations and also engage in dairy development activities.

In applying the principles of collectivisation of farmers and use of democratic principles on cooperation as a means for dairy development, we could also use, in addition to the present dairy cooperatives, the People's Companies that are established under the Gemidiriya Community Development and Livelihood Improvement Project. Gamidiriya project under the Ministry of Nation Building and Estate Infrastructure Development and with funds from the World Bank, can use its resources to integrate with the Village Uplift and Samurdhi Movement which are major poverty alleviation programmes of the government to expand dairying activities in many potential rural areas both as a means of livelihood improvement of the rural poor and for increased self-reliance in milk.

With many farmers in the Gamidiriya Project areas expressing their willingness to undertake dairying as their livelihood, the Gamidiriya Foundation which implements the Gemidiriya project entered into a Memorandum of Understanding (MOU) with the NDDB, with the blessings of the government, to obtain technical assistance for developing dairying in the rural communities, adopting community-driven development. Because of this partnership arrangement, the Gamidiriya project is at an advantage to play a meaningful role in orgainsing dairy farmers to work on cooperative principles and engage in dairy business activities in their project areas.

Gamidiriya project assists communities to form an economic and social organisation in each village, register it under the Companies Act to have legal recognition to access development funds under the project for capacity building, infrastructure development in their villages and access productive investments to improve livelihoods. The capacity demonstrated already by some villages in increasing the number of dairy animals in the villages, building cattle sheds, growing improved grass, having access to veterinary services, chilling evening milk for sale and doubling the quantity of milk produced in the village shows the potential of the Gemidiriya Project to play a catalytic role in promoting dairying in the rural areas.

Conclusion

The 3-tier structure of cooperatives which was first implemented in the state of Gujarat in Anand, and thus termed the Anand model of dairy development, was able to transform the Indian dairy industry in 60 years to make it the worlds largest. However, with changing macroeconomic conditions, the need for more robust structures in place of dairy cooperatives, have been felt and there is a new interest in India in Producer Companies for milk marketing which combine the institutional and philosophical strengths of a cooperative with the flexibility and autonomy provided under the company law. While it is necessary that while supporting the existing dairy cooperatives, the People's Companies established under the Gemidiriya Project, could be made use for dairy development. to take advantage of the partnership arrangement that the latter has with the National Dairy Development Board of India.

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Contd. from page 39

At present, the demand for organic fertiliser is increasing at alarming rates with increasing prices of chemical fertiliser, and demand for organic food. The market price of one kilogram of compost is about ten rupees. Therefore, farmers can earn a huge income from cow-dung which is a costless by-product of milk production, if properly managed. The prices of imported milk powder and milk products are increasing at alarming rates. Therefore, there is a favourable environment for promoting milk industry. However, due to absence of holistic approach towards development of milk industry, it has not been possible to realise the potentials of the country. The most urgent needs are upgrading of genetic potential of local breeds which are less productive in rural areas and introduction of technologies and novel management techniques to reduce young generation moving away from animal husbandry. Although, artificial insemination (AI) is an alternative way of upgrading the genetic potential, farmers' attitude towards artificial insemination in rural areas is not favourable as they perceive that, though not confirmed, AI produces male animals.

Another important aspect to be considered is consumer behaviour and future trends of demand. Fresh milk has both low demand and price due to poor keeping quality. Traditional clay pot of curd is also now outdated and different kinds of small packages are coming to the market. Attitudes towards production as a cottage industry are negative due to bad experiences of adulterations to maximise income, neglecting the future prospects and the quality of the output. In our neighbouring country, India, the milk industry is considered as a vital sector and has been paid the highest attention in research and development.

Although, there are problems of selling fresh milk in remote rural areas, the demand for it and curd in urban areas cannot be met. There is a huge price difference between producer in rural areas and price paid by city dwellers. Promoting private sector and corporative sector for collecting milk and distributing to households will be a solution for marketing problem prevailing at present in rural areas.

Conclusion

Free grazing systems in dairy farming are not attractive in southern Sri Lanka due to variety of hindrances (Uluwishewa, 1997). Also, low productive breeds do not give an economical yield even with improved management practices. Therefore, improvement of the genetic potential of cattle and buffaloes, marginal and unutilised lands for pasture and fodder, and processing and management of marketing mechanisms, direction of farmers towards intensive management practices, and increasing awareness of hygienic and quality milk production are essential in a holistic approach to develop the milk industry in the south.

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