



A STUDY ON MILK PROCUREMENT

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ABSTRACT

The article of milk procurement deals with the systems adopted by dairy industry for the procurement of raw material –milk .this article also gives the information about the various states milk procurement policies, the problems the dairy industry is facing in procuring the milk. Innovative procurement practices and improvements in upstream milk supply chain are also discussed here.

KEY WORDS: AMCU- Automated Milk Collection Units, DPMCU- Data Processor-based Milk Collection Units, National Dairy Plan Phase I -NDP-I, State Milk Grid, National Milk Grid, Feeder plants, National Dairy Development Board –NDDB, Milk Producers Co-operative Societies –MPCS

INTRODUCTION

We know that dairy industry is dependent on a perishable raw material i.e. milk which is subject to wide seasonal fluctuations. How and from where do the dairy plants collect milk to meet their daily requirement? Or what are the factors that influence milk procurement? The organized dairies collect their milk supplies from milk shed area.

A milk-shed area is the geographical region from which a marketing agency secures its fluid supply. The size of the milk shed area is primarily determined by the demand of the dairy plant. The larger the dairy plant the larger the milk shed and more costly the supply. If a dairy plant is large enough the milk shed may overlap of other cities. The number of milk collection centre, the number of milk producers pouring milk at the collection centre, distance of milk collection centres, price paid by different milk procurement agencies, regularity of payment are the other considerations that determine milk procurement.

The systems of milk procurement, which have grown in the organized sector of dairying, can be depicted as following. How milk is procured by the dairy plant? The organized dairies collect milk through one or combination of the following systems:

i. Direct System

In this system the plant collects milk directly from the producers by establishing its own village procurement centres. The milk producers deliver their milk supplies at the collection centres. The payment for milk to the milk producers is made according to pre-specified rate based on quantity and quality of milk supplied.

ii. Agent System

The dairy plant appoints agents to procure milk in the specified area. Payment for the milk is made directly to the producers while the agent gets the commission on pro-rata basis.

iii. Contractor System

The plant purchases milk from the contractor according to terms of the contract. The details in respect of quality, quantity of milk in the flush and learn season, price and the payment etc. are specified in the contract.

iv. Co-operative System

The plant accepts milk from Milk Producers Co-operative Societies (MPCS) established and functioning at the village level. The milk producers in the villages give surplus milk to MPCS. The payment for milk is made according to quality and quantity of milk. The rates for fat and SNF are made known to the milk producers.

The co-operative sector has made tremendous progress in the organization of dairy co-operatives at the grass-root level in the villages and milk procurement in sizeable quantities. The

extent of their reach can be judged from the number of dairy co-operatives, their membership, quantity of milk procured and sold in different states under the co-operative sector.

Milk Procurement in Different States under Co-operative Sector

It is made clear at the outset that the dairy plants in the co-operative and public sector domain have adopted dairy co-operatives structure as a system not only for milk procurement but also for dairy development as well. It may be emphasized that no city dairy can function properly unless it is linked up with a proper milk procurement organization preferably located at a distance from the urban consumption centers. Dependable sources of milk supply would be distant milk production centers rather than close peri-urban areas.

In the past, city dairies were established without much thought on the milk procurement arrangement. When the city dairies were commissioned there was immediate need for milk. Milk contractors and middlemen were ready to supply milk. The milk contractor supplied milk to the dairy when they found it more profitable to do so. This happens in milk surplus season when milk prices in the rural areas and consumer prices in the cities are low. During lean season the contractors take advantage of the high market price in the cities and divert the milk directly for sale through traditional milk vendors. Many dairies had to remain at the mercy of milk traders and contractors facing the problem of more milk than what they can sell during flush season and less than what they need during lean season. The system of milk procurement through contractors and middlemen neither helps the producers nor the consumers.

The milk producer's interests shall be served best when he gets remunerative price for milk, the payment is regular and timely, and incentives for higher milk production like availability of veterinary services free or at a nominal costs, readymade feed mixture at subsidized rates, supply of improved seeds and other technical services are provided to him.

On the dairy development aspects, National Commission on Agriculture had observed the weaknesses of agent system and the contractor system. It recommended establishing the milk

co-operatives all over India on Anand Pattern as these societies serve the best interests of milk producers. These societies appoint their own employees, equip the centre with testing, measuring or weighing facilities and operate the collection centers. The chances of malpractices by the paid employees are reduced as they work under the constant watch of the milk producers. Moreover the price of milk is based on the two-axis pricing policy, calculated by fixing a pre-determined rate for fat and solids-not-fat. Milk producers are generally better off in this type of system of payment.

The most common system of procurement of milk now being followed by most of the government dairies is through establishment of milk collection centers and the collection-cum-chilling centers. The simplest form of milk chilling station is where milk can be chilled by ice. A chilling plant handling about 10,000 litres of milk per day is reported to increase cost roughly by 30 paisa per litre to the cost of milk.

A chilling plant handling smaller quantity of milk increases the cost further. In order to reduce the cost per litre, the chilling plant should be of a size giving the optimum economic returns. Generally speaking the minimum size of a chilling plant should have a handling capacity of 10,000 litres/day. The selection of the size of the chilling plant quite often poses a difficult problem for the dairy organization. Though the operational cost per litre of milk is lower with bigger sized plant but while taking a decision on the size of the chilling plant, the extent of availability of milk is also a determining factor. A decision of the capacity of the chilling station should, therefore, be taken in all cases after carefully weighing various factors and keeping in view the primary consideration of economy. With good and reliable transport agencies, it should be possible to transport milk in fresh condition from village collection centers to a dairy plant located 50 to 60 km away. Chilling centers may, however, become unavoidable under certain situations e.g. where milk is to be procured from faraway places and where transport facilities are not satisfactory. Actually it is the time lag between milking and its receipt at the dairy plant and the associated risk of spoilage of milk that would determine the requirement or other wise of a chilling centre. While it is necessary to maintain the quality of

milk, it is equally necessary that procurement cost is kept as low as possible.

The dairy industry is also faced with the problem of uneven supply of milk during different months of the year whereas the demand of milk and milk products does not depict wide fluctuations. How to meet such situations to balance supply with the demand so that the wide gap between them is narrowed down? Sometimes large dairies requirement cannot be met from one source and that too from a nearby source of milk production. A large dairy has to be linked up with more than one milk shed. It is with these objectives that helped in establishment of rural feeder/balancing dairies to meet the milk requirement of new dairies set up in the metropolitan cities. Each feeder/balancing dairy was to be owned and operated by the milk producers themselves. The role and objectives of feeder/balancing dairies are elaborated below.

v. Feeder/Balancing Plants

To ensure a year-round steady and uniform supply of milk for city milk projects there is need to establish feeder/balancing plants. The feeder function of the plant is confined to the dispatch of chilled/pasteurized milk in bulk to the city distribution system whereas the balancing function of the plant is to balance the year round supply of the required quantity of milk to the cities and conserve the remaining quantity of milk procured in the form of milk products. It is generally observed that procurement of milk during the lean season declines to nearly one-third of that of the flush season whereas the year-round demand for milk in the city remains almost constant. One of the measures to meet this demand is to conserve surplus milk during the flush season in such a way that it can be utilized during the lean season. The surplus milk may either be converted into products ready for direct marketing or for reconstituting into fluid milk during the lean season.

The farmers should be provided with a guaranteed market throughout the year. It is, therefore, necessary to build up processing facilities that are large enough to process the entire marketable surplus milk during the flush seasons. This can be achieved with establishment of what has come to be known as Feeder/Balancing Plants as an integral part of a large city milk supply project.

Vi. State Milk Grid and National Milk Grid

With the establishment of a number of fully functional feeder/balancing plants of adequate size in suitable locations within a state, it would be desirable to establish a State Milk Grid that would ensure steady milk supply all through the year in different parts of the state. Similar developments in the adjoining states may enable the creation of a regional milk grid and with progressive development it should be possible to establish a national milk grid for the whole country. Creation of the milk grid would require besides establishment of functional feeder/balancing plants, the building up buffer stocks of products like skim milk powder, white butter, butter oil and frozen cream.

Milk, after collection at the village collection centre needs to be transported as early as possible to the dairy plant or milk chilling centre for processing/cooling. Fast moving vehicles can be used to transport milk by road. The dairy organization has to decide whether to own its own fleet or hire it on contract basis. Further it requires schedules of the timings to be maintained at the collection centres to clearly demarcate the responsibilities to the village society, truck operators and the dairy plants. Road milk tankers are more economical and satisfactory for collection milk from chilling centres provided adequate quantity of milk is available for a single trip. The biggest size road milk tanker can carry about five times milk quantity in comparison to a truck which can carry about 75 cans of 40 litre capacity each.

India is the world's largest producer as well as consumer of milk and milk products. India nevertheless faces a shortage of milk and milk products due to increasing demand from the fast growing middle class in the country.

The National Dairy Plan Phase I (NDP-I), a Central Sector Scheme of the Government of India, which is supported by National Dairy Support Project (NDSP), aim to increase milk productivity and market access for milk producers, which are both necessary to meet the growing demand for milk. NDP-I is being implemented with a total investment of about US\$350 Million, out of which the Bank has extended a Credit of US\$219 Million through the NDSP.

The National Dairy Development Board (NDDB) is the main implementing agency for the NDP-I. At the decentralized level, NDP-I is being implemented by about 150 end-implementing agencies (EIAs) scattered over the country. The Project involves some innovative procurement practices and improvements in upstream milk supply chain, which are described below:

Supply chain strengthening for village-based milk procurement:

There are currently about 15 million milk producers in India, who are members of about 150,000 village dairy cooperatives. As milk is a highly perishable item, any weakness in the upstream supply chain may result in milk spoilage before reaching the processing plants.

Challenges include:

- Detecting possible adulteration
- Determining milk purchase price for each of the milk producers at the purchasing point in real time
- Ensuring milk producers maintain hygiene while bringing milk to collection centers.

To address the above challenges, the NDSP financed EIAs' purchase and installation of **bulk milk chillers (BMC)** at village milk collection points, which generate savings in transportation, operations, handling and processing costs. For streamlining milk collection and testing for quality of the milk supplied, EIAs also purchased standardized **Automated Milk Collection Units (AMCU)** and **Data Processor-based Milk Collection Units (DPMCU)** at collection centers along with associated IT systems. Adulteration testing kits were also supplied. These EIAs also procured **Milk Cans** and provided them to producers to ensure hygiene while bringing milk to collection centers. As on date about US\$50 Million have been committed for strengthening of the upstream supply chain. Village-level infrastructure for milk collection and bulking has also helped in faster release of payment to milk producers.

The NDSP also encouraged formation of new village-level cooperatives to bring new producers to supply the milk. Since the mid-point

of the project's implementation period, 23,487 villages have been covered and 660,935 additional milk producers have organized. Upon completion of the NDSP, this component is likely to result in incremental annual financial gains of US\$38 Million.

Framework Agreements for Decentralized Procurement of equipment:

About 150 EIAs across the 18 participating states of India require some standard items repeatedly (for example, Bulk Milk Cooling Unit). Because of this and the varying capacity among the EIAs, NDDB proposed the use of Framework Agreements (FA) for such items. In NDSP, FA were centrally set-up by NDDB but are being operated by EIAs, who issue purchase orders and release payments. As the EIAs had never used FA in the past, a series of training workshops were organized for them. Time taken in placing purchase orders under FA is 18-25 days (in comparison to National Competitive Bidding or NCB, which is around 120 days and shopping which is around 30-45 days). It was also noted that on average 4.9 Proposals have been received for FA, which is higher than average for NCB in most Bank-financed projects. Use of FA has not only resulted in accelerating procurement process but also in monetary saving up to 15% in many cases.

Procurement oversight and quality assurance:

In regards to decentralized procurement of equipment oversight under the NDSP, the NDDB hired the services of a reputable inspection agency for quality checking of items procured by EIAs under FA arrangements. To minimize the scope for any deficiency in quality of items supplied, a Quality Assurance Plan (QAP) was developed for each item, and inspections started right from the manufacturing stage of equipment. Apart from detection and rectification of defects in items by the supplier, these proactive measures resulted in cancellation of FA of some suppliers, who were unable to adhere to required quality standards. Third party QA for civil works was also arranged. Monitoring integrity of the procurement process at this level was handled by a NDDB-hired professional. These findings were used by NDDB to design capacity building program for EIAs.

A web-based Procurement management information system (MIS) was developed to help NDDDB monitor utilization of FA set-up by it as well as overall progress on decentralized procurement. The MIS also helped EIAs in sharing data among each other.

4.4. Milk and milk product marketing

In order to generate more income from milk production, the group can decide to market the products themselves, as it is easier to access markets as a group. Knowledge of the markets is essential if you want to make profit, and you should gather as much information as possible.

CONCLUSION

The challenges the dairy industry is facing can be addressed with the adoption of innovative strategies in milk procurement -installation of bulk milk chillers (BMC), Automated Milk

Collection Units (AMCU), Data Processor-based Milk Collection Units (DPMCU), State Milk Grid and Quality Assurance Plan (QAP) for Procurement oversight and quality assurance. Thus it can be concluded that milk procurement challenge of dairy industry can be faced with help of government and co-operative sector.

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