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## DAIRYING DESERVES BETTER DEAL

The dairy sector is producing more milk than the requirement and it has become difficult to market dairy production. While it commands low prices in the international market, the domestic market is unable to absorb excess supply.



**L**ivestock rearing is an integral part of crop farming. It provides nutritional security and also income to households. It is labour-intensive and women-oriented. Rural women perform more than 90 per cent operations as an extension of domestic activities. The dairy sector is the lifeline for over 70 million dairy farmers. Feed accounts for about 70 per cent of the cost of milk production.

According to experts, milk consumption in 2010-11 would be around 113 million tonnes. Milk is the most accessible and nutritious

food, especially for weaker sections. Experts expect a milk shortage in the near future.

In the 1950s and 1960s, India was the largest importer of dairy products, importing over 40 per cent of the country's milk solids requirement. Today, it is the largest milk producing country in the world. Credit for this goes to the Operation Flood programme of the 1970s implemented successfully under the direction of Dr Kurien, former chairman of the National Dairy Development Board (NDDB). Today, India exports about Rs 10 billion worth of milk products annually.

The per capita availability of milk showed steady improvement. It was 112 grams/day in 1968-69, 176 grams in 1990-91, 220 grams in 2000-01, 241 grams in 2005-06, 246 grams in 2006-07, 252 grams in 2007-08 and 258 grams in 2008-09. However, this is still low compared to the world average of 265 grams.

The Indian dairy sector mainly consists of marginal farmers who supply an average of 2.5 to 4 litres of milk per day. Dairy farmers are usually agricultural farmers. Dairy farming is an allied activity for them. Also, dairy farming is the only agricultural activity that can be carried out throughout India in all the seasons.

### Steady progress

India's milk demand is projected to be 166 million tonnes by 2020 compared to the actual production of 108.5 million tonnes in 2008-09. About 35 per cent of the total milk produced is processed. The organised sector processes about 13 million tonnes, while the unorganised sector processes about 22 million tonnes.

There are more than 75,000 dairy cooperative societies which are spread all over the country. Their membership is more than 10 million. The cooperative structure in the country consists of 21 state federations, 192 district unions, and 117,575 primary milk producers'

cooperative societies. Through this grid, the rural milk production and procurement system has been effectively linked to urban areas. Of every 100 litres of milk produced, the rural countryside retained 44 litres and the balance 56 litres is the marketable surplus for the urban areas. Of this, only 10 litres are handled by the organised sector cooperatives.

Over 133,000 village-level dairy cooperative societies, spread over 265 districts in the country, collect about 25 million litres of milk per day and market about 20 million litres.

There are currently 676 dairy plants in the organised sector that combines cooperative, private and government units. Demand for dairy products is on the rise in urban areas because of increase in disposable incomes as well as a rise in the number of outside food eateries which rely on milk and milk-based products.

Milk producers resort to hike in prices mainly because of infrequent monsoon. Another major reason is increased prices of cattle food. Early 2010, the Gujarat Cooperative Milk Marketing Federation, India's largest food products marketing organisation and owner of the popular Amul, hiked prices of brands such as 'Taaza,' 'Slim' and 'Trim.' Competition has increased in urban areas because of increase in the number of corporate players in the field.

Reliance Dairy Foods, a subsidiary of Reliance Retail, has charted an aggressive move into the dairy foods market by launching a branded milk product and by ramping up distribution through better margins to distributors. The dairy foods sector is attracting new investments as this sector assumes higher margins on limited capital investments.

Reliance Dairy Foods is a relatively new player. Its product 'life'



will be sold through general milk retailers as opposed to the current practice of selling through Reliance Retail owned stores. The company launched its first brand under the name 'Dairy Pure' in mid-2007. Reliance Retail attempts to lure customers with 10 per cent extra milk to every packet compared to that of competitors for the same price.

Pune-based Parag Milk Foods, owner of the Gowardhan brand of dairy products, is planning to invest Rs 1600 million in 2010 to expand capacities for processing a total of Rs 2 million litres of milk daily. Its annual milk retailing business has witnessed a growth rate of 15 per cent a year in recent years in Maharashtra. It has plans to expand the business to Tamil Nadu, Andhra Pradesh and Karnataka.

### Some problems

India's dairy sector is not free from problems. The farmers prefer to rear livestock for meat, lured by

lucrative prices and a friendly government policy. The country's average milk yield continues to be 917 kg per annum. In fact, the farmers in north India are up against squeezed margins mainly because of 90 per cent rise in fodder prices between 2006 and 2009.

The fodder crisis is there. Farm animals producing 10 litres of milk a day require at least 675 kg of crude protein a year. But, raw cattle feed exports have more than doubled between 2006 and 2009, leading to sharp rise in fodder prices. No wonder, when a buffalo becomes dry, it is sent to slaughter house.

The dairy sector is producing more milk than is required. It has become difficult to market dairy production. They command low prices in the international market. The export

market has dried up because of recession. The domestic market is unable to absorb excess supply.

Cattle feed is not within the reach of small farmers because of high prices. Moreover, cold-chain facilities are utterly inadequate. Value-added milk products have a long shelf-life. However, liquid milk has to be chilled as soon as possible and refrigeration is necessary to improve quality.

Each animal should be provided with the required quantity of food. Overeating can lead to fatal diseases such as enterotoxemia, and insufficient diet can cause weight loss.

Proper feeding is necessary to boost yields. The American dairy industry has an average milk yield of 10,000 to 11,000 litres per lactation cycle compared to around 1000 to 1200 litres from buffaloes in India.

### Recent initiatives

Now the stress is on semi-automatic rotary parlour system in order to optimise milking efficiency

and cow throughput. It has many advantages. The rotary platform can be loaded quickly and efficiently. It allows smooth group changes, leading to a constant throughput. A throughput of 400-500 cows per hour is achieved due to the design of the entry and exit points. The short distances travelled by both the cows and operators ensure the effective use of time and the rate of flow per cow, ensuring uninterrupted operations while maximising cow flow.

It is now realised that the old ways of feeding need to be modernised by using new technology. The system requires a continual flow while giving the cows the correct feed balance. Hence the total mixed ration (TMR) system was adopted whereby a specialised TMR mixer was used to feed the individual groups of cows more accurately while giving the operator the versatility to alter the rations as required.

A major programme for genetic improvement of cattle and buffaloes called the National Project for Cattle and Buffalo Breeding (NPCBB) was launched in October 2000. Its duration is ten years in two phases of five years each. The allocation is Rs 4020

### Milk Production in India

(million tonnes)

Year	Production
1950-51	17.0
1960-61	20.0
1970-71	22.0
1980-81	31.6
1990-91	53.9
2000-01	80.6
2001-02	84.4
2002-03	86.2
2003-04	88.1
2004-05	90.7
2005-06	97.1
2006-07	100.9
2007-08	104.8
2008-09	108.5

Source: Economic Survey 2009-10, p. A25

million and Rs 7759 million, respectively. The project aims at genetic upgradation and development of indigenous breeds on priority basis. At present, 28 states and one UT are participating in the project. Financial assistance to the tune of Rs 4850 million was released to these states up to 2008-09. During 2009-10, Rs 933 million were released to the implement-

ing agencies till December 2009.

A centrally sponsored scheme for livestock insurance is being implemented in all the states with the twin objectives of providing a protection mechanism to farmers and cattle rearers against loss of their animals due to death and to demonstrate the benefit of livestock insurance to the people. The scheme benefits farmers (large, small and marginal) and cattle rearers having indigenous/crossbred milch cattle and buffaloes. In 2009-10, Rs 232.8 million was released up to December 2009, and 1.316 million animals were insured up to 2008-09. The scheme has been extended from 100 districts to 300 districts from December 2009, covering all states.

The centre had earmarked a corpus of Rs 5500 million for dairy development in the 11th five-year plan (2007-12) under Rashtriya Krishi Vikas Yojana. Under the scheme, states are empowered to select schemes in the dairy sector as per their priority. However, states like Madhya Pradesh, Meghalaya, Sikkim, Maharashtra, Karnataka, West Bengal, Chhattisgarh, Uttarakhand, Goa, Assam and Nagaland did not take any fund under the scheme till January 2010. Other states have utilised Rs 2630 million.

India's neighbouring countries are still deficient in milk production. We have to boost export of milk products to these countries.

Experts say the future of the Indian dairy industry is bright, with a projected large domestic consumption and also the possibility of exports.

The government is concentrating on promoting dairy activities in non-operation flood areas with emphasis on building cooperative infrastructure, revitalisation of sick dairy cooperatives and federations and creation of infrastructure in the states.

### Milk Adulteration

There are many chemical tests for detecting adulteration in milk.

When nitric acid is added to milk containing skim-milk powder, an orange colour develops. Milk to which skim-milk powder has not been added gives a yellow colour.

Picric acid solution gives a yellow precipitate in milk containing gelatin. Cloudiness shows a smaller amount of gelatin, while a yellow precipitate shows a larger amount of gelatin in milk.

A few drops of iodine when added to milk adulterated with starch and other cereal flours turn it blue.

Preservatives are frequently added to milk to make it last longer. Preservatives commonly added to milk are boric acid and borates, carbonate and bicarbonate, formaldehyde, salicylic acid, benzoic acid and hydrogen peroxide.

When treated with turmeric paper, boric acid and borate give a characteristic red colour.

Carbonate or bi-carbonate is especially added during summer to make milk last longer. The milk containing this preservative develops a rose red colour when treated with Rosalic acid. However, it gives only a brownish colouration with pure milk.

Add two drops of paraphenyline diamine hydrochloride to 10 ml of milk. The development of an intense blue colour shows the presence of hydrogen peroxide.

The author is a regular contributor to FFY