

## Economic Analysis of Dairy Plant, Milk Plant Verka, Mohali, Panjab and its Public Health Impact on the Community

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### Abstract

Customers today are more informed and more demanding than ever. They know quality service when they get it and they aren't afraid of taking their business elsewhere if they don't get it. Most manufacturers have taken this fact to heart because a refusal to acknowledge this reality can spell - failure - rejection by the one who holds the purse strings and the key to profits. Satisfaction of customer needs, in fact, provides a rationale for the firm's existence. Therefore, consumer behavior lies at the heart of modern marketing and its knowledge is vital for a firm's existence, growth and success. An understanding of the motives underlying the consumer behavior helps a firm to seek better and more effective ways to satisfy consumers.

Consumer behavior, however, is a complex system where there is an interaction of various social, economic and psychological factors. All these factors affect the purchase decision of the buyer and his perception about different products. Buying decision process incorporates all the activities that individuals go through in their role as consumers. It starts right from the time when there is a state of deprivation (need arousal) and goes through a point when a means of need satisfaction has been obtained. It ends at a juncture when the product has been used for a sufficiently long period of time to judge the level of satisfaction (post - purchase evaluation). Satisfaction is the key to generate repeat business. It ensures customer loyalty and determines whether a customer would come to the company again.

**Keywords:** Economic Analysis; Public Health Impact; Marketing Strategies; Verka.

### Introduction

The Punjab State Cooperative Milk Producers' Federation Limited popularly known as MILKFED Punjab, came into existence in 1973 with a twin objective of providing remunerative milk market to the Milk Producers in the State by value addition and marketing of produce on one hand and to provide technical inputs to the milk producers for

enhancement of milk production on the other hand. Although the federation was registered much earlier, but it came to real self in the year 1983 when all the milk plants of the Punjab Dairy Development Corporation Limited were handed over to Cooperative sector and the entire State was covered under Operation Flood to give the farmers a better deal and our valued customers better products.

Today, when we look back, we think we have fulfilled the promise to some extent. The setup of the organization is a three tier system, Milk Producers Cooperative Societies at the village level, Milk Unions at District level and Federation as an Apex Body at State level. MILKFED Punjab has continuously advanced towards its coveted objectives well defined in its byelaws. First Verka Milk Plant of the State was setup near the Amritsar. The brand name of Milk and Milk Products was adopted as Verka. Commissioning of the Plant was done by Dairy Development Corporation in 1974.

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### Objectives

- To provide remunerative prices to milk producers by value addition and marketing of produce.
- To carry out activities for promoting production, procurement processing and marketing of milk and milk products for economic development of the farming community.
- To make necessary arrangements for transfer of milk allied milk products and commodities.
- To purchase plants, machinery and other ancillary equipment to carry out business.
- To study about demand and supply fluctuations.

### Milk Plant Verka, SAS Nagar

#### Achievements of Milkfeed

- On the basis of quality with efficient administration, MILKFED has not only established new mile stone of providing services to Dairy farmers but scaled new heights in delighting esteemed customers.
- MILKFED is providing technical input services like animal healthcare, supply of quality cattle feed, fodder seeds etc. at the door steps of the dairy farmers under its Productivity Enhancement Programme.
- For producing quality technical services MILKFED has established its own two cattle feed plants having capacity of three hundred metric ton per day.
- During the last 3 years, 8 Milk Plants and 2 Cattle Feed Factories of MILKFED, Punjab were accredited with ISO9002 and IS-15000 (HACCP)

#### Certification.

- In view of today's interest of consumers in getting quality and safe products, MILKFED is manufacturing quality milk and milk products as per International Standards and also exploring the possibility of manufacturing milk products of consumer's choice.
- MILKFED has launched its own interactive Website on Internet for its prospective customers which can be accessed by clicking <http://www.milkfed.nic.in>
- MILKFED introduced liquid milk in new design packing with Mnemonic Symbol of Co-operative Milk in all the District Milk Unions.

#### Profile of the Unit

The elegant building situated on the National Highway No. 21 just before we enter in Chandigarh from Punjab is that of Milk Plant owned by The Mohali District Co-operative Milk Producers Union Ltd. Its foundation stone was laid by India's Home Minister Mrs. Uma Shanker Dixit in 1973. It started its production in 1979. Its name was registered as "The Mohali Distt. Co-operative Milk Producers Union Ltd. Mohali". It has been registered under Punjab Co-operative Societies Act 1961 on 24 March 1973. This union started its milk procurement from March 1974. The union is working under the laws of act. In the beginning 13 societies became its members. But this union started as milk procurement from 1974. Initially its office was situated on the upper side of co-operative bank of mohali. At that time Milk Plant was not properly made. Initially the societies of nearest circle were started, after this it was expanded and centers were approved at other places. At that time this union collects milk from other societies and to Horlicks. Before it, except Horlicks there was no major buyer of milk and Horlicks was a private concern giving low rates.

After that the union was strengthened and milk producers got benefited by this union as they were getting reasonable rates for their farms. A project report of Milk Plant mohali was made at that time with shares from different societies were to be collected and it includes Rs 100 share money and Rs 5 admission fees, Rs 15 lacs were to be collected in this manner and the share of government was fixed at Rs 40 lacs. For the smooth running of the plant, the union had taken loan of worth Rs 62 lacs from Co-operative Development Corporation. By this loan a milk plant was established. It started milk of 45000 liters per day in December 1979

further it was expanded with the help of National Dairy Development Board at ANAND under the "Operation Flood" programmed. After few years a drier was installed with a capacity of 10 tones. For the purchase of this machinery, 70% of loan was taken from NDDDB and 30% loan from government in the form of subsidy. The total investment in the plant was 6.5 crores.

### Materials and Methods

Secondary data for economic analysis of the plant for the five years were taken w.e.f. 2010 to 2014 Place of study: Mohali\_Chandigarh Time: 1<sup>st</sup> September to 7<sup>th</sup> September, 2015.

#### Main Products Manufactured By Milk Plant

**Table 1:** General Characteristics

General Characteristics:	
Name	Verka
Address	Verka Milk Plant, Phase-6, Mohali, Punjab.
Raw Material	Milk
Product	Pasteurized Milk, Special Kheer, Lassi, Cheese, Double Toned Milk, Curd, Sweet Flavored Milk, Milk Cake etc.
Working Hours	24 Hours (3 shifts)
Total Workers	170
Capacity	2 lacs kg/day

**Table 2:** Milk Procurement in Previous Years:

Year	Kgs/Day
2010-11	246895kgs/day
2011-12	274525kgs/day
2012-13	319504kgs/day
2013-14	328115kgs/day
2014-15	336525kgs/day.

The main products which are manufactured by the milk plant MOHALI are as under:

1. Pasteurized Milk.
2. Milk Powder
3. Kheer.
4. Sweetened Flavoured Milk (PIO).
5. Milk Cake.
6. Cheese.
7. Curd.

#### Marketing Department

According to Prof. Phillip Kotler "Marketing is the human activity directed as satisfying need and wants through the exchange process". Marketing is the process through which producers and consumers of

### Results/Interpretation and Discussion

#### Company Profile

#### Quality Assurance Program

Quality Assurance Program (QAP) which is a part and parcel of Dairy Plant Improvement Program (DPIP) was taken up in Ludhiana Milk Union with the Technical guidance from NDDDB. The main objective of the program is to improve efficiency of Plants coupled with loss management to bring down the cost of production, improve the quality of milk and milk products manufactured to ameliorate the general hygienic and house keeping standards and above all to enhance the profitability and financial viability of the Milk Plants to enable milk producers to get better price for their produce.

various goods are brought together in an exchange relationship and the transfer of ownership takes place. Marketing process starts even before the goods go into production. It does not end with sale but continues till the satisfaction of consumer is obtained. To carry out selling functions, it is important to have a qualified and expressed sales force with leader who can plan, organize, direct and control the selling job objectivity. The salesman is an extremely important link in the claim of distribution. It is sometimes said that salesmanship is the other name of persuasion.

#### Marketing Strategies

Section of Milk Booths/Agencies Security Money Refundable Agency Rs. 5000; Full time booths Rs. 10000; Part time booths Rs. 3000; Institutions 45 days advance payment .

### *Marketing Measures for Domestic Market*

For domestic market following measures are taken up by marketing personnel:

- A. Dealers' meeting is called once in every six months.
- B. The plant has own distribution network for the sale of products.
- C. Milk products are marketed to bring up country markets throughout India on consignment basis.

### *For International Market*

For Export following measures are taken into consideration:

- A. Requirement is given by customers in the letter of credit.
- B. Quality should be mentioned.

### *Domestic Marketing Activities*

The domestic marketing activities are performed on the basis of Demand and Supply.

Demand for milk and milk products are received in two ways:

#### *Through Telephone*

Any demand or change in demand is received between 9:30 am and 2:00 pm.

#### *Through Supply*

Milk booths collect demand according to milk supplied to the agencies. About 70% of milk is distributed in the morning and remaining 30% is distributed in the evening.

### *Payment and Balance System*

Since agency is required to deposit one day advance payment separately for morning and evening, if any cash balance remains with the union that is admitted in the meant supply payment.

For institutions 45 days of advance payment against their demand is collected union.

### *Return of Milk*

If milk is found leaked. it is taken back from dealers only at the time of delivery. One entire tray is provided for replacement of leakage of every truck or other vehicle through which milk is supplied to the dealers.

Marketing is a comprehensive term and it includes all resources and a set of activities necessary to direct and facilitate the flow of goods and services from producers to consumers in the process of distribution. Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to exchange that satisfy individual and organizational objectives.

### *Role of Marketing in Verka Milk Plant*

Head Office collects this information from all the plants and scrutinizes the information that which plant has large stock of products and who is lacking in it. Then it gives orders to plant which has large stock to supply products to other plants so that stock can be absorbed quickly. The prices of all the products are determined by the H.O. and their retail price throughout India is same H.O. charges 3% commission on sales made by milk plant, Mohali.

For the local sale of milk and milk products, a milk bar is opened outside the main gate of milk plant, Mohali and its average sales are Rs 5 lakhs per day. Some milk products like liquid milk, Cheese, Milk cake, S.F.M., Ice-cream etc. are sold through local dealers in the region.

### *Advertisement and Sales Promotion*

The advertisement and sales promotion of every product is necessary. Without this, nobody comes to know about the product. Every organization whether it is small, medium or big has to do some type of advertisement. Verka milk plant has also adopted some policies for the sale of its products. It has its own Vans, Trucks, and Jeeps etc. for selling its products. There are also some benefits which are being provided to the dealers. There is a facility of free training of testing milk to the societies so as to make more customers. With the adoption of such policies sales have increased in Chandigarh and Kharrar as well as in Mohali. For doing advertisement the shops of retailers have been painted showing various Verka products and various types of banners are also given to them which are to be displayed.

### *Salesmanship Guide*

Certain guidelines and motto are being told to the salesmen for meeting the customers' desires and wants. Various guidelines are as follows:

1. It is said "sell yourself before you sell the product". The above saying is measuring to create one's own confidence in the minds of customers so as to ensure sales.

2. Your sincerity and capability in convincing is your performance for success.
3. Over convincing never pays single facts convince better.
4. Always remember that customer is more intelligent than you.
5. Don't indulge in giving guarantees if wear and tear.
6. You should be pre-determined in your mind of items, size to be sold to the customers after stock.
7. Your expertise is your success.
8. Don't display all of your varieties because customers generally have the habit of asking "more".

*Organizational Chart*

*Data Analysis and Interpretation*

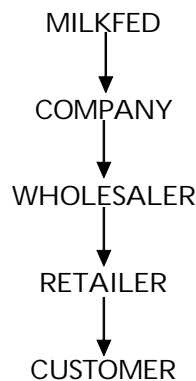
*Interpretation*

The maximum no. of people in Chandigarh region are aware about Verka product's due to its good quality. Only 5% out of 200 people are not aware about Verka product's.

*Interpretation*

According to 200 respondents 70% says that they like the verka kheer and rest 30% says that they don't like it.

*Distribution Channel*



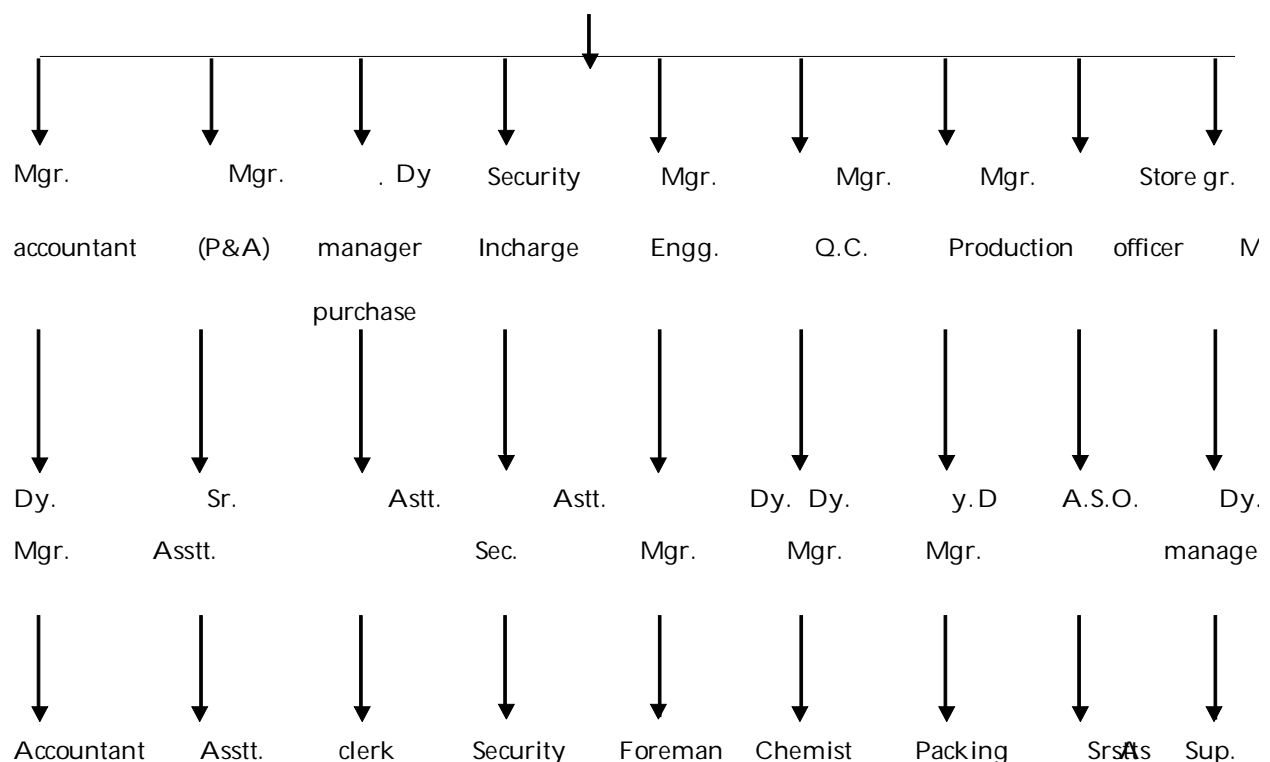
*Interpretation*

According to 200 respondents 85% says that they aware about the brands of Kheer and else 15% says that they only use loose Kheer.

*Interpretation*

According to 200 respondents, out of those, 60 % says that satisfied with packing quantity 200gm and else says 40% that they are not satisfied with that.

ORGANISATIONAL CHART  
GENERAL MANAGER



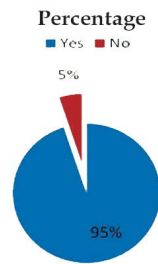
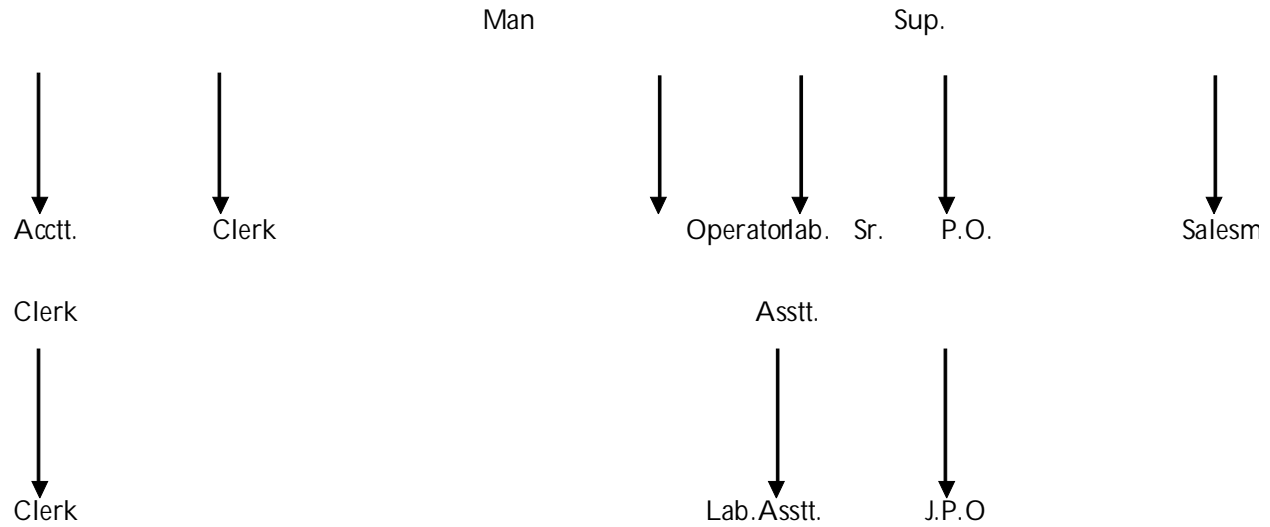


Fig. 1: Are you Aware about VERKA products?

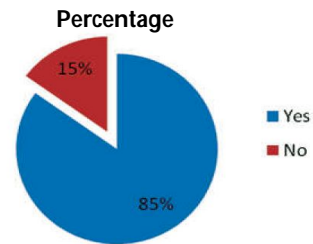


Fig. 3: Are you aware about brands of Kheer?

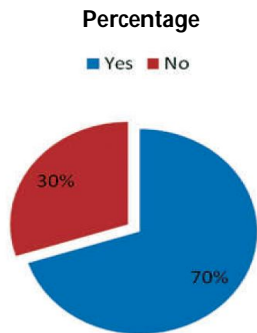


Fig. 2: Do you like Verka Kheer?

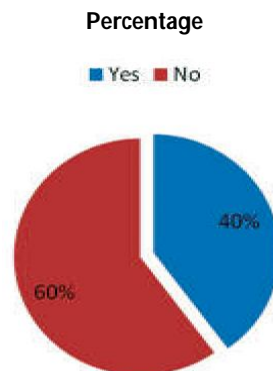


Fig. 4: Do you feel satisfied with packing quantity 200gm?

*Supply & Demand (Fundamental Tool of Economic Analysis)*

*Analysis of Ghee Supply & Demand*

- Demand is the consumer side of the market.
- Supply is the seller side of the market.
- Describe how prices and quantities are determined by the market equilibrium.
- Attempts by the government to restrain market

prices with price ceilings.

- Discuss how responsive consumer purchases are to a change in price.

*Demand and Quantity Demanded*

Quantity demanded will depend on price as well as population size, consumer incomes, tastes, and the prices of other products. But we want to focus on the relationship between the price of a good and the purchases of the good.

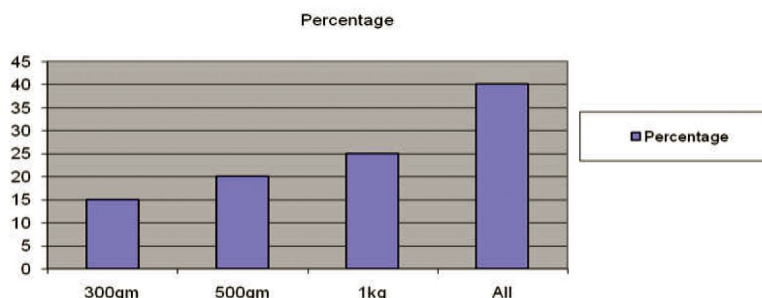


Fig. 5: You want to vary the size



Fig. 6: From where you purchase VERKA Kheer?

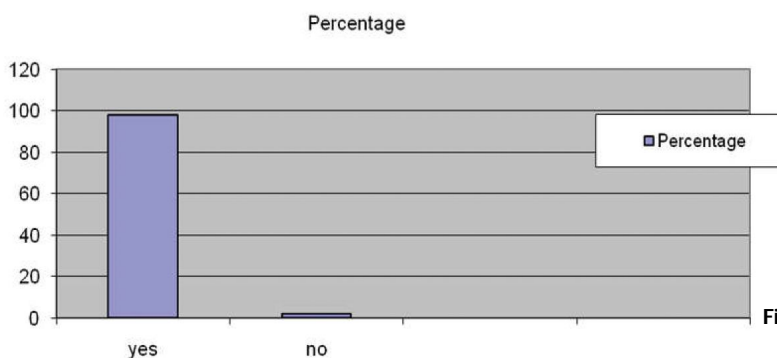


Fig. 7: Are you satisfied with supply of Verka Kheer?

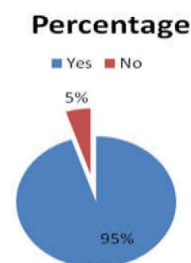


Fig. 8: Are you satisfied with quality of Verka Kheer?

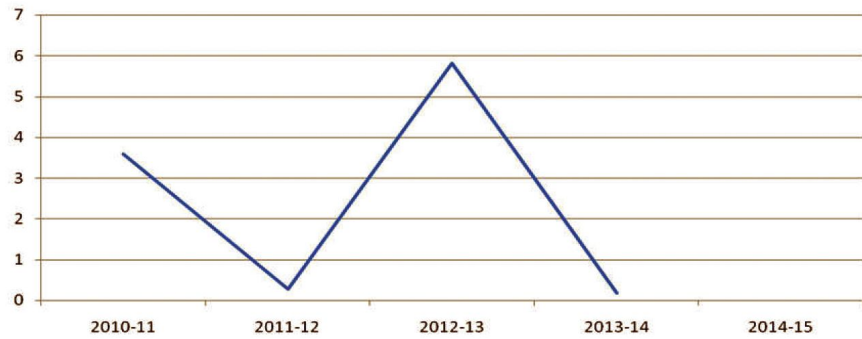
Table 1: Economic Data of Dairy Plant

Name of Item	2010-11	2011-12	2012-13	2013-14	2014-15
Total Societies	1010	1048	1051	1116	1118
Milk procured in single day	344613	377218	450890	455064	465169
Functional dairy farms	279	308	351	355	308
Avg. Milk procurement/day (kgs)	246895	274525	319504	328115	336525
% capacity utilization of plant	341.73	128.68	132.12	146.00	150.00
Avg. liquid milk sales to cities/day	301839	314183	327183	356412	370040
Sales of Ghee avg./day	2484	2821	2492	2915	1497
Sales of Curd avg./day	11123	12409	13076	17317	18605
Sales of Paneer avg./day	2697	3063	3360	3806	3632
Sales of Plain Lassi avg./day	10299	11108	16345	20203	19432
Sales of Kheer avg./day	616	650	627	700	844
Sales of Namkeen Lassi avg./day	97	120	125	111	65
Total Turnover of milk (Rs. In lacs)	37252	48449	50058	59703.60	67469
Annual net profit of milk union	715.00	788.00	808.00	840.16	864.00



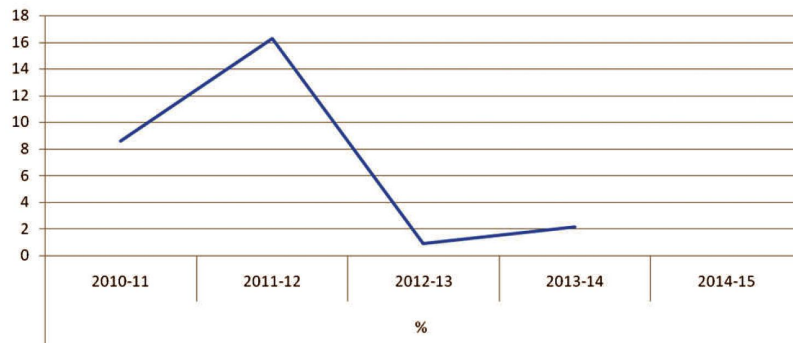
**Table 1:** % Change in no. of Total functional Societies

Year	% change
2010-11	3.6
2011-12	0.28
2012-13	5.82
2013-14	0.178



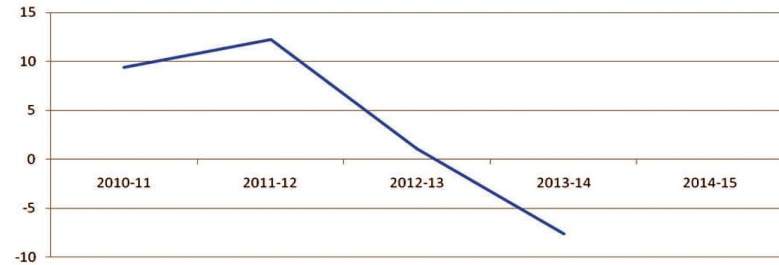
**Table 2:** Change in Maximum milk procured

Year	% change
2010-11	3.6
2011-12	0.28
2012-13	5.82
2013-14	0.178



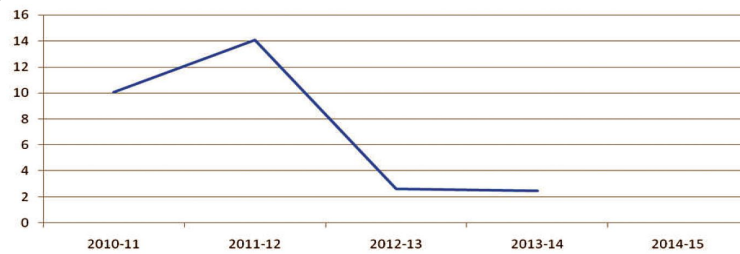
**Table 3:** % Change in Functional Dairy Farms

Year	% Change
2010-11	9.41
2011-12	12.25
2012-13	1.126
2013-14	-7.57



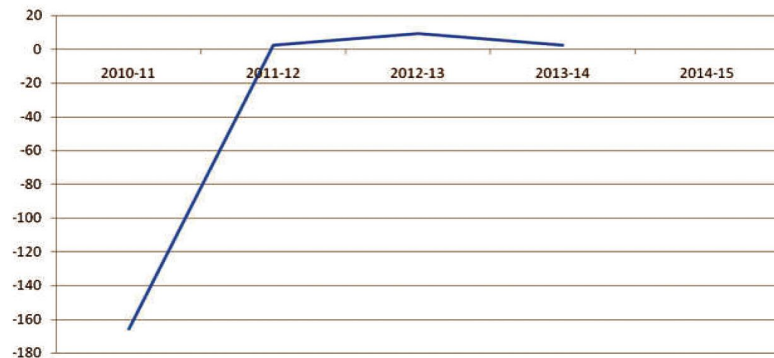
**Table 4:** % Change in milk procurement/day (kgs):

Year	% Change
2010-11	10.06
2011-12	14.07
2012-13	2.62
2013-14	2.49



**Table 5:** % Change in capacity utilization of the plant

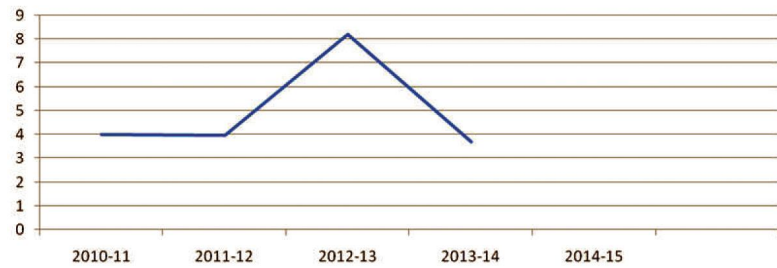
Year	% Change
2010-11	165.56
2011-12	2.60
2012-13	9.506
2013-14	2.67





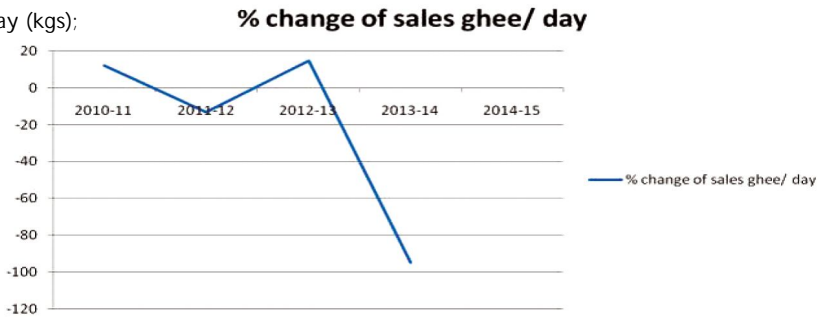
**Table 6:** % Change in Avg. Liquid Milk Sale to cities /day (ltr.)

Year	% Change
2010-11	3.99
2011-12	3.97
2012-13	8.20
2013-14	3.68



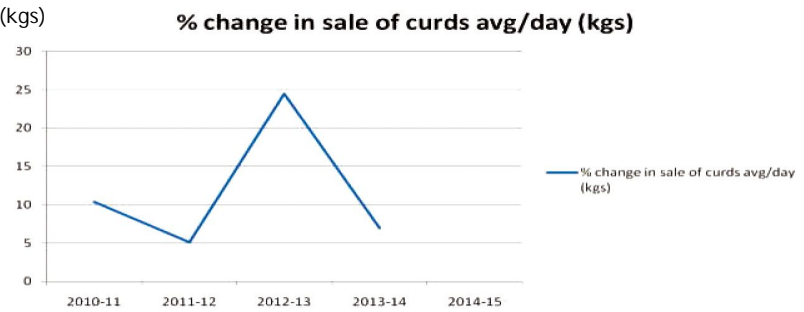
**Table 7:** % Change in Sales of ghee avg/day (kgs);

Year	% change
2010-11	11.95
2011-12	-13.20
2012-13	14.51
2013-14	-94.72



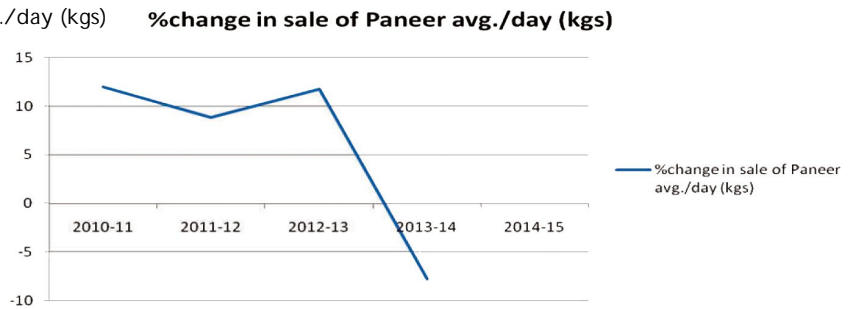
**Table 8:** % Change in Sales of Curd avg/day (kgs)

Year	%change
2010-11	10.36
2011-12	5.1
2012-13	24.49
2013-14	6.92



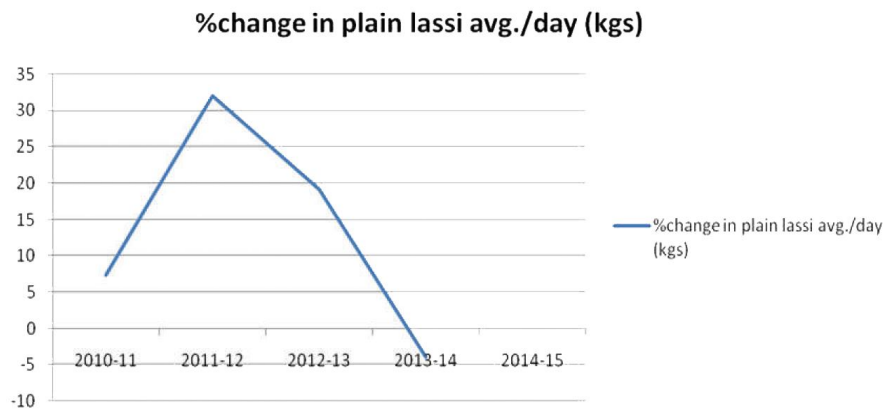
**Table 9:** % Change in sale of Paneer avg./day (kgs)

Year	%age change
2010-11	11.95
2011-12	8.84
2012-13	11.72
2013-14	-7.76



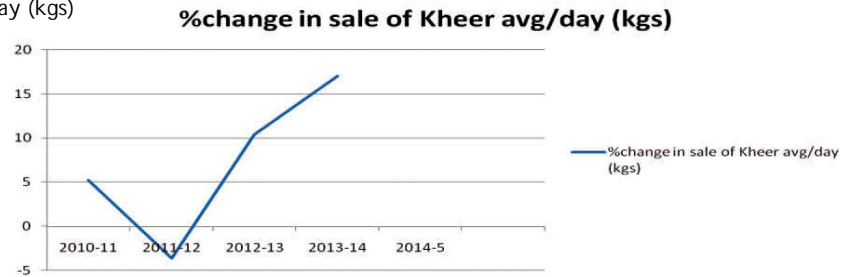
**Table 10:** % Change in sale of Plain Lassi avg./day(kgs.)

Year	% change
2010-11	7.28
2011-12	32.04
2012-13	19.09
2013-14	-3.96



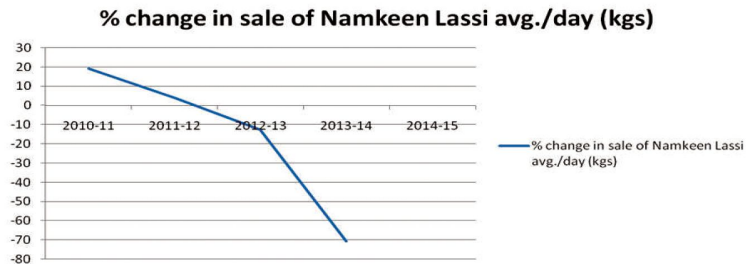
**Table 11:** % Change in sale Kheer avg./day (kgs)

Year	% change
2010-11	5.23
2011-12	-3.67
2012-13	10.43
2013-14	17.06



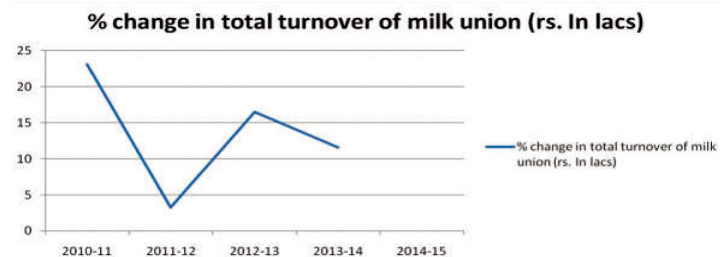
**Table 12:** % Change in sale of Namkeen Lassi avg./day (kgs)

Year	%change
2010-11	19.17
2011-12	04
2012-13	-12.61
2013-14	-70.76



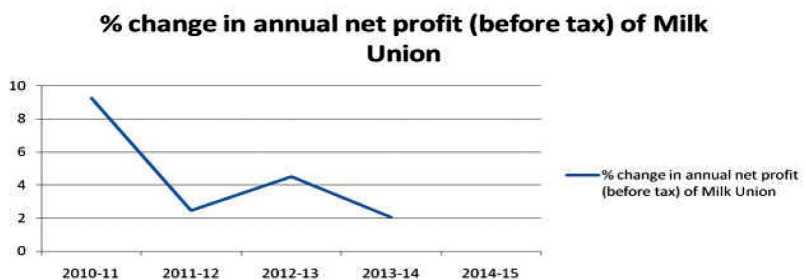
**Table 13:** % change in total turnover of Milk Union (Rs. in lacs).

Year	%age change
2010-11	23.11
2011-12	3.21
2012-13	16.15
2013-14	11.51



**Table 14:** %change in annual net profit (before tax) of Milk Union

Year	%age change
2010-11	9.26
2011-12	2.47
2012-13	4.51
2013-14	2.065



*Consider the Demand for Ghee –*

As the price of ghee rises, quantity demanded falls because:

- (1) People consume less ghee.
- (2) Some people drop out of the market for ghee and refined oil instead.

Along the demand curve all other determinants of the quantity demanded for ghee (e.g., consumer incomes, the price of orange juice and cereal) are held constant. The price of ghee is the only determinant of demand for ghee that is allowed to change.

*Law of Demand*

The lower the price of the good, the larger the

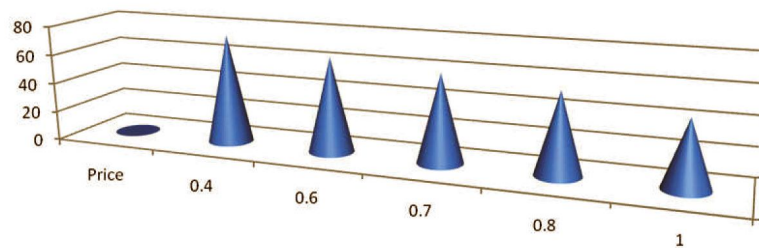
quantity consumers wish to purchase. In general, demand curves have a negative slope.

*Supply and Quantity Supplied*

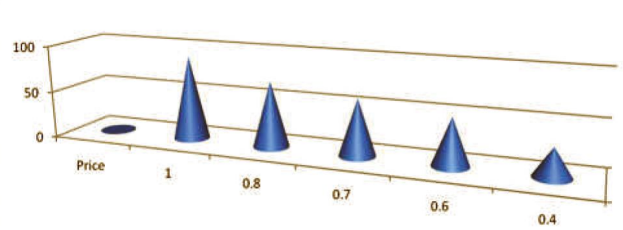
Quantity supplied is not a fixed number and depends on many factors. For example, there is more milk if there are more dairy farmers, and less milk if bad weather kills cows or destroys their feed. But we want to focus on the relationship between the price of a good and the production of the good.

Along the supply curve all other determinants of quantity supplied (e.g., the price of feed, the weather, etc.) are held constant. The price of milk is the only determinant of the supply of milk that is allowed to change.

Price (dollars /quarts)	Quantity (billion of quarts/ year)
0.4	75
0.6	65
0.7	60
0.8	55
1.0	45



Quantity Supplied (Billion of quarts/year)	Price
0	
1.0	90
0.8	70
0.7	60
0.6	50
0.4	30



**Law of Supply**

The higher the price of a good, the larger the quantity firms want to produce. In general, supply curves have a positive slope.

**Equilibrium of Supply and Demand**

In a free market, the quantity of goods and services is determined by the intersection of supply and demand. In equilibrium, consumers are willing to buy exactly what producers are willing to sell.

Consider the Following Chart to Understand how the Milk Market Moves Toward Equilibrium

The equilibrium occurs at the price of 70 cents. The forces of supply and demand push prices toward this

equilibrium. If the price is below the equilibrium price, a shortage occurs. In this case, frustrated consumers will offer farmers higher prices to get the milk they desire, forcing prices up. If the price is above the equilibrium price, a surplus occurs. In this case, frustrated sellers will lower prices to clear out their inventories, lowering milk prices. Markets are not always in equilibrium, but free markets normally move toward equilibrium.

**Price Floor**

A price floor is a legal minimum on the price that may be charged for a commodity. The government imposes price floors to help the sellers in a market. Examples include minimum wage legislation and agricultural price supports.

Price (dollar)	Quantity Demanded	Quantity Supplied	Surplus/ Shortage	Price Response
1.00	45	90	Surplus by 45	Fall
0.80	55	70	Surplus by 15	Fall
0.70	60	60	Neither	Stay Same
0.60	65	50	Shortage of 15	Rise
0.40	75	30	Shortage of 45	Rise

**Problems Associated with Price Floors**

- Disposal of the goods: The government has to purchase, store, and dispose of the agricultural surplus. If the surplus is not purchased and destroyed prices would fall because frustrated sellers would offer lower prices to eliminate their inventories.
- Sellers offer perks or discounts to get around the law. For example- airlines competed in food quality when they were regulated. Today they compete in price and have lousy food.
- Encourages over-investment in the industry.

Inefficient businesses can survive with a high enough price floor. But once the price floor is lifted many firms cannot survive.

**Elasticity of Demand Elasticity of Demand**

Measures how responsive consumer purchases are to a change in price. Demand elasticity is important to firms.

If consumers reduce purchases sharply after a price increase, the firm may not want to raise prices because their total revenues will fall. Price elasticity is

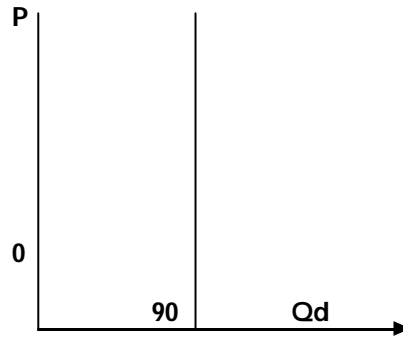
calculated as:

$\% \Delta Q / \% \Delta P = \eta$  = Price Elasticity and the Shapes of Demand Curves  
The shape of demand curves conveys some information about elasticity.

*Price Elasticity and the Shapes of Demand Curves*

The shape of demand curves conveys some information about elasticity.

**Elasticity = 0**



This demand curve is perfectly inelastic. The quantity demanded is 90 regardless of price and the

$\% \Delta Q$  is zero. Thus, consumer purchases are completely unresponsive to a change in price.

Total Turnover of Milk Union (Rs. in lacs).

Year	Y (sales)	€X	€X <sup>2</sup>	€XY
2010-11	3.7252	1	1	3.7252
2011-12	4.8449	2	4	9.6898
2012-13	5.0058	3	9	15.0174
2013-14	59.7036	4	16	238.8144
2014-15	6.7469	5	25	33.7345
	=80.0264	=15	=55	=300.9813

*Regression Analysis*

$\Sigma = na + b \Sigma X$

$\Sigma XY = a \Sigma X + b \Sigma X^2$

$80.0264 = 5a + 15b$  (a)

$300.9813 = 15a + 55b$  (b)

$1200.396 = 75a + 225b$

$1504.9065 = 75a + 275b$

$304.5105 = 50b$

$B = 6.09021$

Substitute values in (a)

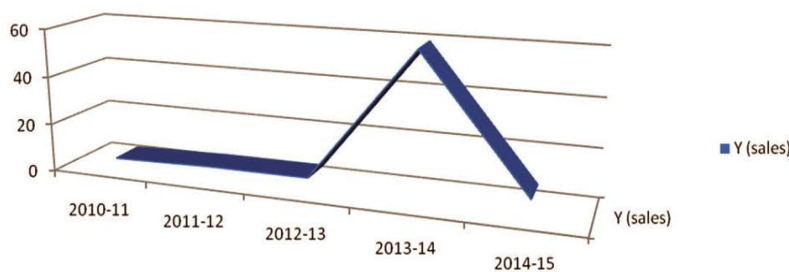
$A = 2.265$

**$Y = a + bX$**

$2.265 + 6.09021 * 5 = 32.7160$

Estimated sales for next year is 32.7160 lacs.

**Y (sales)**



*SWOT Analysis*

*Strengths*

1. Brand Loyalty among the rural people for Verka

products.

2. Good brand image of Verka KHEER in the minds of rural people.

3. Faith on Verka products by the rural farmers.
4. Rural people satisfaction with quality, price, quantity and availability is also strengthen the dairy business.

#### *Weaknesses*

1. Lack of proper advertisements by the plant, such as posters, glow signs, etc.
2. Lack of proper distribution system in rural areas.
3. Lack of proper marketing network in rural areas as like in urban areas.
4. Very high rates of KHEER for Rs.15 for 200 mg.

#### *Opportunities*

1. Greatly improved expert potential for milk products of western as well as traditional types.
2. Proper utilization of available resources to decrease per unit cost.
3. by product utilization for import substitution.
4. Growing demand for milk and milk products.

#### *Threats*

1. Introduction of foreign products in Indian market.
2. Poor quality of milk.
3. The liberalization of Dairy Industry is likely to be exploited by multi -nationals. They will be interested in manufacturing milk products which yield high profits. It will create milk shortage in

the country adversely affecting the consumers.

4. Export of quality feed under the liberalization policy.

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