CHAPTER ONE

INTRODUCTION

Background of the study, Introduction to the Marketing Strategy, Indian Dairy Industry, Milk grid system and profile of the selected district
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1.1 BACKGROUND OF THE STUDY
In the present study, the dairy market is analyzed taking into consideration manufacturers and/or packagers of milk and milk products as players. Food retailers, distributors and end-users are considered as the key buyers, and dairy farmers as the key suppliers.

Focus of the study is mainly on the marketing strategies adopted by manufacturers and/or packagers (consist of state-owned, co-operatives and private players) of milk and milk products in the selected region of the Maharashtra state.

The Indian dairy market is highly concentrated, with top three players holding more than 50% \(^1\) share of the total market value. Suppliers (farmers) commonly integrate forward, as dairy co-operatives. Along with private players, co-operatives offer farmers the opportunity to access larger markets and use capital items, such as packaging and processing plants.

The dairy market is comparatively easy to enter as a small enterprise, however in order to supply to the masses, market consumer companies must be large and have some level of integration, if successful market entry is to be secured.

Competition, however, is strong as there are numerous players present that are generally similar to one another despite most operating diverse dairy portfolios.

In India, the main distribution channels for the dairy market are independent retailers, which account for around 11% \(^2\) share of the total market value. Food and beverage retail is fragmented in India: the non-organized segment accounts for a significant share of its revenues, and independents and small supermarket chains are yet to prove their significance in the organized segment.

\(^1\)[Datamonitor-Industry profile-Dairy in India- Publication Date: October 2010-Reference Code: 0102-0711]
The dairy market in India is highly price sensitive; as buyers are tend to choose the cheaper option, especially in the milk market. Manufacturers and/or packagers can target end-users with their branding strategies, or develop more individual, premium products to counter balance the power of buyer to make purchasing decisions on price alone. Overall, buyer power is assessed as the strongest factor.

Key suppliers to this market are dairy farmers. Dairy products are by definition made of milk, and there are therefore no real alternatives to raw materials. Dairy cooperatives, which typically integrate dairy farming, milk collection, processing, and packaging, are present; however, they have a much more prominent role in India. [3] Almost 100,000 dairy cooperatives are organized into 170 “producer unions”, which are combined at state level into 15 cooperative milk marketing federations. Some of the latter have strong brands and enjoy consumer recognition, i.e. Amul.

As the Indian dairy market is dominated by cooperatives, the interest of suppliers are further up streamed, which include manufacturing of cattle feed, milking machines, packaging, and providers of service, such as veterinary care and artificial insemination. The products involved are fairly commoditized, and there are a reasonable number of suppliers; also, the ability of cooperatives to purchase on behalf of their members (who may be very small-scale farmers) means that the supplier power is correspondingly decreased. Overall, the supplier power is moderate.

In the Indian dairy market, small-scale entry, perhaps as an artisanal producer of premium dairy products, does not require very large amounts of capital. However, for new entrants aiming to challenge the major players in the mass-consumer market, entry barriers are higher. Scale economies in production are important, especially in countries, where a consolidated food retail sector means that players are forced to compete intensely on price.

Most dairy products are perishable, which means that reliable supply and distribution chains are vital to avoid the costs of wastage – this can be a particular barrier to entry in less developed economies.

Leading dairy product manufacturers may have strong brands, aimed at retaining end-user loyalty, which means that new players will have a more difficult task to distinguish their own brands. Overall, there is a strong likelihood of new players in the dairy market.

From the consumer's point of view, dairy products may be used directly as food or beverages, but also ingredients for other home-made foods. There is a wide range of food and drink that can be used in similar ways to dairy products, so if dairy prices raise too high, it is possible for consumers to replace them with alternatives. This reduces the pricing freedom of retailers and market players. Some of the alternatives may have advantages for retailers, such as cheaper storage or higher margins.

Dairy products are important parts of most peoples’ diet, with the benefits of calcium highly publicized, therefore are unlikely to be completely replaced. Overall, the threat of substitutes is assessed as moderate.

The Indian dairy market is tending towards concentration, with top three players holding more than 50%[^1] share of the total market value. The market is dominated by milk federations, such as Gujarat Co-operative Milk Marketing Federation and Kerala Cooperative Milk Marketing Federation. This indicates the presence of large sized competitors, which boosts competition. Switching costs for buyers are not particularly high, although some retailers may allocate contracts to single suppliers of dairy products.

The larger multinational (MNCs) players tend to operate in a number of fast moving consumer goods markets, therefore may not be as reliant on sales of milk and milk products, which decreases competition. As dairy products are usually perishable, storage costs are high. Industrial production of dairy products requires substantial, specialized assets, and the need to sell these off when leaving the market, translates into high exit costs. The strong growth in the Indian dairy products market in recent years eases competition to a certain extent. Overall, the level of competition is assessed as moderate.

[^1]: Datamonitor-Industry profile-Dairy in India- Publication Date: October 2010- Reference Code: 0102-0711
1.1.1 OBJECTIVES
The proposed study aims to study the marketing strategies adopted by the dairy companies. This study also aims to develop appropriate options, which can be used by the professional and by the companies to take appropriate decisions related to dairy marketing.

This study specifically attempts to create a systematic understanding of:
1. To study the knowledge companies have about customer and competition in dairy industry.

2. To study marketing strategies adopted by companies and its impact on the market effectiveness and profitability using multiple regression.

3. To study the measures adopted by companies for gaining competitive advantage.

1.1.2 SCOPE OF THE STUDY
This study focuses on the fieldwork to collect detailed data related to the present marketing strategies adopted by the manufacturers and/or packagers (consist of state-owned, co-operatives and private players) of milk and milk products in Pune district for marketing as well as perceptonal consumer demands and competitive advantage that are influencing our industry and will dominate in the future also. And the emerging trends that are more dramatically reshaping the dairy market.

My comments tend to focus on Pune district, one of the prosperous milk shed of the state of Maharashtra. The study is an attempt, on relatively large scale, to understand the market, marketing strategies and marketing practices in greater details.

1.1.3 ORGANIZATION OF THE THESIS
The thesis is organized around the following chapters.

Chapter 1: Introduction: This chapter throws light on the background of the study, objectives, scope of the research, introduction to marketing strategy, introduction to the Indian dairy market, introduction to the Indian dairy market and the profile of the selected district.
**Chapter 2: Review of literature:** This chapter is devoted towards the review of the extent knowledge in the field at national and international level.

**Chapter 3: Research Methodology:** This chapter provides details of research methodology. But results are presented in chapter on data analysis.

**Chapter 4: Data Analysis and Interpretation:** This chapter provides detailed data analysis which is presented hypothesis-wise.

**Chapter 5: Conclusion:** This chapter contains conclusions (including findings). Specific contribution of the research, limitations and scope for the future research are also discussed.

### 1.2 INTRODUCTION TO THE MARKETING STRATEGY

**DEFINITION OF MARKETING**

The American Marketing Association defines marketing as “the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives.” Marketers use an assortment of strategies to guide how, when, and where product information is presented to consumers. Their goal is to persuade consumers to buy a particular brand or product.

Successful marketing strategies produce an aspiration for a product. A marketer, therefore, needs to understand end user likes and dislikes. In addition, marketers must know what information will persuade consumers to buy their product, and whom consumers perceive as a credible source of information.

Some marketing strategies use fictional characters, celebrities, or experts to sell products, while other strategies use specific statements or “health claims” that state the benefits of using a specific product or eating a particular food.
1.2.1 DEVELOPING MARKETING STRATEGY [4]

Marketing strategy is a process that can allow an organization to concentrate its limited resources on the greatest opportunities to increase sales and achieve a sustainable competitive advantage. [5]

Marketing strategies serve as the elementary groundwork of marketing plans designed to fill market needs and reach marketing objectives. [6] Plans and objectives are generally tested for measurable results.

Commonly, marketing strategies are developed as multi-year plans, with a tactical plan detailing definite actions to be accomplished in the current year. Time horizons covered by the marketing plan vary by company, by industry, and by nation, however, time horizons are becoming shorter as the speed of change in the environment increases. [7]

Marketing strategies are dynamic and interactive. They are partially planned and partially unplanned.

Marketing strategy involves careful scanning of the internal and external environments which are summarized in a SWOT analysis. [8] Internal environmental factors include the marketing mix, plus performance analysis and strategic constraints. [9] External environmental factors include customer analysis, competitor analysis, target market analysis, as well as evaluation of any elements of the technological, economic, cultural or political/legal environment likely to impact success. [7][10] A key component of marketing strategy is often to keep marketing in line with a company’s overarching mission statement. [11]

[6] Marketing basics marketing strategy based on market needs, targets and goals
[8] Hausman Marketing Letter Definition of Marketing Series
Once a thorough environmental scan is complete, a strategic plan can be constructed to identify business alternatives, establish challenging goals, determine the optimal marketing mix to attain these goals, and detail implementation.\[^{[7]}\] A final step in developing a marketing strategy is to create a plan to monitor progress and a set of contingencies if problems arise in the implementation of the plan.

### 1.2.2 TYPES OF MARKETING STRATEGIES

Marketing strategies may differ depending on the distinctive situation of the individual business. However, there are a number of ways of categorizing some generic strategies. A brief description of the most common categorizing schemes is presented below:

#### 1.2.2.1 STRATEGIES BASED ON MARKET DOMINANCE

In this scheme, firms are classified based on their market portion or supremacy of an industry. Typically there are four types of market dominance strategies:

- Leader
- Challenger
- Follower
- Niche

#### 1.2.2.2 PORTER GENERIC MARKETING STRATEGIES

Strategy on the dimensions of strategic scope and strategic strength. Strategic scope refers to the market penetration while strategic power refers to the firm’s sustainable competitive advantage.\[^{[12]}\] The generic strategy framework (Porter 1984) comprises two alternatives each with two alternative scopes. These are Differentiation and low-cost leadership each with a dimension of Focus-broad or narrow.

- Product differentiation (broad)
- Cost leadership (broad)
- Market segmentation (narrow)


\[^{[12]}\] The generic strategy framework (Porter 1984)

#### 1.2.2.3 INNOVATION STRATEGIES
This deals with the firm’s rate of the fresh product development and business model innovation. It asks whether the company is on the cutting edge of technology and business innovation. There are three types:

- Pioneers
- Close followers
- Late followers

1.2.2.4 GROWTH STRATEGIES

In this scheme we ask the question, “How should the firm grow?” There are a number of varied ways of answering that question, but the most regular gives four answers:

- Horizontal integration
- Vertical integration
- Diversification
- Intensification

A more detailed scheme uses the categories [13]:

- Prospector
- Analyzer
- Defender
- Reactor
- Marketing warfare strategies – This scheme draws parallels between marketing strategies and military strategies.

1.2.3 STRATEGIC MODELS

Marketing participants often employ strategic models and tools to analyze marketing decisions. When beginning a strategic study, the 3Cs can be employed to get a broad understanding of the strategic environment. An Ansoff Matrix is also often used to convey an organization’s strategic positioning of their marketing mix. The 4Ps can then be utilized to shape a marketing plan to pursue a defined strategy. There are many companies especially those in the Consumer Package Goods (CPG) market that admit the theory of running their business centered on Consumer, Shopper & Retailer needs.


Their Marketing departments consume quality time looking for “Growth Opportunities” in their categories by identifying suitable insights (both mindsets and behaviors) on their target Consumers, Shoppers and retail partners.
These growth opportunities emerge from changes in market trends, segment dynamics changing and also inside brand or operational business challenges. The Marketing team can then prioritize these growth opportunities and begin to develop strategies to make the most of the opportunities that could include new or custom-made products, services as well as changes to the 7Ps.

1.2.4 REAL-LIFE MARKETING
Real-life marketing primarily revolves around the application of a enormous deal of common-sense; dealing with a limited number of factors, in an environment of imperfect information and inadequate resources complicated by uncertainty and tight timescales. Use of classical marketing techniques, in these circumstances, is inevitably limited and uneven.

Thus, for example, many new products will become apparent from irrational processes and the rational development method may be used (if at all) to screen out the most terrible non-runners. The plan of the advertising, and the packaging, will be the output of the creative minds employed; which management will then screen, often by ‘gut-reaction’, to make sure that it is reasonable.

For most of their time, marketing managers use instinct and knowledge to analyze and handle the complicated, and exclusive, situations being faced; without easy reference to theory. This will often be ‘flying by the seat of the pants’, or ‘gut-reaction’; where the overall strategy, coupled with the data of the customer which has been absorbed almost by a method of osmosis, will establish the quality of the marketing employed. This, almost instinctive management, is what is sometimes called ‘coarse marketing’; to differentiate it from the refined, aesthetically pleasing, form favored by the theorists.

1.2.5 PRINCIPLES OF MARKETING STRATEGY [14]

[14] Rajan Varadarajan—a Professor of Marketing at the Mays Business School at Texas A&M University propose these five principles of marketing strategy

Facilitate a business to achieve competitive advantages
The purpose of marketing strategy is to facilitate a business achieve and carry on a competitive advantage in the marketplace.
Here, the phrase “to facilitate a business achieve” rather than “to achieve” is used in light of the multi-functional reach of competitive strategy that underlies a business achieving and sustaining a competitive advantage. Since a number of principles that I am proposing relate to the principle of marketing strategy, some might view “a purpose” as more suitable than “the purpose.”

**Assumption:** Achieving and sustaining a competitive advantage is the means to achieving market performance objectives (e.g., market share, sales, market share growth and sales growth) and economic performance objectives (e.g. return on investment, earnings growth).

**Create market-based assets**
The purpose of marketing strategy is to generate market-based relational assets and market-based intellectual assets.


**Consumer and customer behavior modification**
The purpose of marketing strategy is to outline the behaviors of customers and consumers in ways that are favorable to their acquisition, possession and/or consumption of the firm’s product offerings.

Among the avenues available to firms to accomplish consumer and customer behavior modification are: persuasive communication, branding, positioning, product innovation, packaging, distribution and pricing.


**Enhance salience of non-price criteria in buyer’s choice decisions**
The purpose of marketing strategy is to boost the salience of non-price criteria vis-à-vis price in buyers’ choice decisions.
**Assumptions and Premises:**

1. Two extensive sets of criteria – price and non-price criteria – influence the buying decisions (e.g., brand choice decisions) of individuals and organizations.

2. Through pursuit of a strategy of differentiation of a business' product offering from the generic product, firms can boost the importance of non-price criteria relative to price in the buyer's product choice decision process, and thereby command a price premium in the marketplace relative to the generic product.

3. Through pursuit of a strategy of differentiation of a business' product offerings from its competitors' product offerings, firms can enhance the importance of non-price measure relative to price in the buyer's brand choice decision process.

4. The range of options available to a business for pursuing a strategy of differentiation encompasses all non-price criteria that buyers either currently aspect into the brand choice decision process or can be persuaded to factor into the brand choice decision process.

5. A business incurs definite costs in differentiating its product offering from its competitors' product offerings and/or the generic product.

6. All else being equal, a strategy of differentiation will enable a business to enhance its financial show, when the incremental cost of differentiation per unit is lower than the price premium that a unit of the differentiated product is able to control in the marketplace.

7. Holding all other factors stable, those dimensions of differentiation for which the incremental cost of differentiation is lower than the incremental price premium that such differentiation is likely to control in the marketplace constitute feasible avenues for differentiation.

**Enhancing strategy effectiveness through segmentation, differentiation and positioning**

Segmenting the market into homogenous subgroups, developing differentiated offerings reactive to the needs of individual market segments, and distinctively positioning the offerings is generally conducive to enhancing the effectiveness of a business' marketing strategy.

**Assumptions and Premises:**

1. The effectiveness of a strategy of differentiation is contingent upon heterogeneity of demand.
2. Heterogeneity of demand can either be a pre-existing state of the marketplace, or a consequence of heterogeneity of supply and the marketing efforts of competing businesses to stimulate demand heterogeneity.

3. Differentiation implies heterogeneity of supply.

4. Differentiation encompasses positioning.

5. Positioning implies differentiation.

1.2.6 IMPACT AND INFLUENCE OF MARKETING STRATEGIES

Marketing strategies directly impact food purchasing and eating habits. For example, in the late 1970s scientists announced a possible link between eating a high-fiber diet and a reduced risk of cancer. However, consumers did not immediately increase their consumption of high-fiber cereals. But in 1984 advertisements claiming a relationship between high-fiber diets and protection against cancer appeared, and by 1987 approximately 2 million households had begun eating high-fiber cereal. Since then, other health claims, supported by scientific studies, have influenced consumers to decrease consumption of foods high in saturated fat and to increase consumption of fruits, vegetables, skim milk, poultry, and fish.\(^{16}\)

Of course, not all marketing campaigns are based on scientific studies, and not all health claims are truthful. In July 2000 a panel of experts from the U.S. Department of Agriculture supported complaints made by the Physicians Committee for Responsible Medicine that the “Got Milk” advertisements contained untruthful health claims that suggested that milk consumption improved sports performance, since these claims lacked scientific support.

In addition, the panel agreed with the physicians’ claim that whole milk consumption may actually increase the risk of heart disease and prostate cancer, and recommended that this information be included in advertisements.

\(^{16}\) Connor, John M., et al. (1985). The Food Manufacturing Industries: Structure, Strategies, Performance, and Policies. Lexington, KY: D.C. Heath. The remarkable spending power and pressure of children on parental purchases has attracted marketers, and, as a result, marketing strategies aimed at children and young people have increased. Currently, about one-fourth of all television commercials are related to food, and approximately one-half of these are selling snacks and other foods low in nutritional value. Many of the commercials aimed at children and young people use catchy music, jingles, humor, and well-known
characters to promote products. The impact of these strategies is illustrated by studies showing that when a majority of television commercials that children view are for high-sugar foods, they are more likely to choose unhealthy foods over nutritious alternatives, and vice-versa.

1.2.7 MARKETING PLAN

The information was derived from many sources, including Michael Porter’s book Competitive Advantage and the works of Philip Kotler. Concepts addressed include ‘generic’ strategies and strategies for pricing, distribution, promotion, advertising and market segmentation. Factors such as market penetration, market share, profit margins, budgets, financial analysis, capital investment, government actions, demographic changes, emerging technology and cultural trends are also addressed.

Having selected the direction most beneficial for the overall interests of the enterprise, the next step is to choose a strategy for the offering that will be most effective in the market. This means choosing one of the following ‘generic’ strategies (first described by Michael Porter in his work, Competitive Advantage).

1.2.8 GENERIC STRATEGIES

1.2.8.1 A cost leadership strategy is based on the conception that you can produce and market a good worth product or service at a lower cost than your competitors. These low costs should transform to profit margins that are higher than the industry average. Some of the circumstances that should exist to support a cost leadership strategy comprise of an on-going availability of operating capital, good process engineering skills, close management of labor, products designed for easiness of manufacturing and low cost distribution.

1.2.8.2 A differentiation strategy is one of creating a product or service that is perceived as being exceptional “throughout the industry”. The stress can be on brand image, proprietary technology, special features, superior service, a strong distributor set-up or other aspects that may be exclusive to your industry. This uniqueness should also convert to profit margins that are higher than the industry average. In addition, some of the circumstances that should exist to sustain a differentiation strategy include strong marketing abilities, effective product engineering, creative personnel, the ability to execute basic research and a good reputation.
1.2.8.3 A focus strategy may be the most advanced of the generic strategies, in that it is a more 'concentrated' form of either the cost control or differentiation strategy. It is designed to address a “focused” segment of the marketplace, product form or cost management method and is usually employed when it isn’t appropriate to have a go an ‘across the board’ use of cost leadership or differentiation. It is based on the concept of serving a specific target in such an exceptional manner, those others cannot compete. Usually this means addressing a significantly smaller market segment than others in the industry, but because of least competition, profit margins can be very high.

1.3 INTRODUCTION TO THE INDIAN DAIRY INDUSTRY

Dairy industry in India has gone through a lot of change, transforming itself from import-dependent industry to a self-reliant industry. The success of dairy industry revolves around three things, viz. procurement, processing and marketing of dairy products.

Production is the base on which a building of dairy industry stands. Procurement, processing and marketing are the other aspects that need to be strengthened for the healthy growth of the dairy industry to serve the consumers so that economic multiplier effects of dairying are realized.

The Indian dairy market grew strongly in 2005-2009 period, reaching double digit rates, as a result of strong sales growth in the package milk category. Gradual deceleration is expected in the forecast period; however, the growth within the market will remain strong.

The Indian dairy market generated total revenues [17] of $4.4 billion in 2009, representing a compound annual growth rate [17] (CAGR) of 11.9% for the period spanning 2005-2009. Milk sales proved the most lucrative for the Indian dairy market in 2009, generating total revenues of $4 billion, equivalent to 90.5% of the market’s overall value. The performance of the market is forecast to decelerate, with an anticipated CAGR of 8.4% for the five-year period 2009-2014, which is expected to lead the market to a value [17] of $6.6 billion by the end of 2014.

Indians have held milk in high esteem through the ages, considering its good enough as an offering to God. Since childhood, it is drilled in the head that milk is the food
par excellence. It provides 95% of animal proteins and almost 100% of animal fats in the diet. Its wide acceptance as necessary nutritious and whole-some food reflects its enormous potential demand.

1.3.1 INDIAN DAIRY INDUSTRY-A PROFILE

Today, India is ‘The Oyster’ [18] (T. Jaithalia et.al.) of the global dairy industry. It offers opportunities galore to entrepreneurs worldwide, who wish to capitalize on one of the world’s largest and fastest growing markets for milk and milk products. A bagful of ‘pearls’ [18] awaits the international dairy processor in India. The Indian dairy industry is rapidly growing, trying to keep pace with the galloping progress around the world.

India’s milk output is expected to touch 121.5 million tonnes in the current year, translating into a growth of nearly 4% vis-à-vis the previous year, according to a [19] US Department of Agriculture (USDA) report. “India’s milk production in 2010 is estimated at 117 million tonnes and is forecast to increase approximately 4% to a record 121.5 million tonnes in 2011, reflecting a near normal monsoon...,” the USDA said in a report.

Earlier, the USDA had projected that production of milk would amount to 113.5 million tonnes in 2010. However, it later revised the estimate upward to 117 million tonnes on account of the good monsoon last year, which led to increased availability of fodder for cattle.

[17] Datamonitor-Industry profile-Dairy in India- Publication Date: October 2010- Reference Code: 0102-0711
[18] A chemistry paper submitted by Mr. T. Jaithalia pg.2
[19] US Department of Agriculture (USDA) report

“Liquid milk production in 2010 is revised to reflect greater than 4% growth over 2009 production due to a strong monsoon and related good fodder availability,” the report said. In 2009, liquid milk production in the country stood at 112 million tonnes, despite poor monsoon rainfall.

The milk production will go up due to the improved management practices adopted by Indian dairies and efforts by the private and public sector to improve cattle genetics, besides good fodder availability, the USDA report said. India is the world’s largest producer of dairy products and home to the world’s largest dairy herd. However, the country still faces a production shortfall due to massive demand from the growing population.
India’s dairy sector is expected to triple its production in the next 10 years in view of expanding potential for export to Europe and the West. Moreover with WTO regulations expected to come into force in coming years all the developed countries which are among big exporters today would have to withdraw the support and subsidy to their domestic milk products sector. Also India today is the lowest cost producer of per litre of milk in the world, at 27 cents, compared with the U.S’ 63 cents, and Japan’s $2.8 dollars. Also to take advantage of this lowest cost of milk production and increasing production in the country multinational companies are planning to expand their activities here. Some of these milk producers have already obtained quality standard certificates from the authorities. This will help them in marketing their products in foreign countries in processed form.

The urban market for milk products is expected to grow at an accelerated pace of around 33% per annum to around Rs.43, 500 crores by year 2005.

This growth is going to come from the greater emphasis on the processed foods sector and also by increase in the conversion of milk into milk products. By 2005, the value of Indian dairy produce is expected to be Rs. 10, 00,000 million. Presently the market is valued at around Rs.7, 00,000mn.

Figure 1.1: Factory farms in India
1.3.2 MILK YIELD COMPARISON

Table 1.1: Milk yield comparison

<table>
<thead>
<tr>
<th>Country</th>
<th>Milk Yield (Kgs per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>7002</td>
</tr>
<tr>
<td>UK</td>
<td>5417</td>
</tr>
<tr>
<td>Canada</td>
<td>5348</td>
</tr>
<tr>
<td>New Zealand</td>
<td>2976</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1052</td>
</tr>
<tr>
<td>India</td>
<td>795</td>
</tr>
<tr>
<td>World (Average)</td>
<td>2021</td>
</tr>
</tbody>
</table>

Source: Export prospects for agro-based industries, World Trade Centre, Mumbai

1.3.3 PRODUCTION OF MILK IN INDIA

Table 1.2: Production of milk in India

<table>
<thead>
<tr>
<th>Year</th>
<th>Production in million MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988-89</td>
<td>48.4</td>
</tr>
<tr>
<td>1989-90</td>
<td>51.4</td>
</tr>
<tr>
<td>1990-91</td>
<td>53.7</td>
</tr>
<tr>
<td>1991-92</td>
<td>56.3</td>
</tr>
<tr>
<td>1992-93</td>
<td>58.6</td>
</tr>
<tr>
<td>1993-94</td>
<td>61.2</td>
</tr>
</tbody>
</table>
1994-95 63.5
1995-96 65
1996-97 68.5
1997-98 70.8
1998-99 74.7
1999-00 78.1
2000-01 81.0
2010 (E) 117
2011 (T) 121

\[E\text{=estimated, \quad} T\text{=target/expected}\]


### 1.3.4 WORLD’S MAJOR MILK PRODUCERS (Million MTs)

Table 1.3: World’s major milk producers

<table>
<thead>
<tr>
<th>Country</th>
<th>1997-98</th>
<th>1998-99 (Approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>71</td>
<td>74.5</td>
</tr>
<tr>
<td>USA</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>Russia</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Germany</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>France</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Pakistan</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>Country</td>
<td>1999</td>
<td>2000</td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Brazil</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>UK</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Ukraine</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Poland</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>New Zealand</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Netherlands</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Italy</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Australia</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>


1.3.5 OPERATION FLOOD

The transition of the Indian milk industry from a situation of net import to that of surplus has been led by the efforts of National Dairy Development Board’s Operation Flood Programme under the aegis of the former Chairman of the board Dr. Kurien. Launched in 1970, Operation Flood has led to the modernization of India’s dairy sector and created a strong network for procurement processing and distribution of milk by the co-operative sector. Per capita availability of milk has increased from 132 gm per day in 1950 to over 220 gm per day in 1998.

The main thrust of Operation Flood was to organize dairy cooperatives in the milkshed areas of the village, and to link them to the four Metro cities, which are the main markets for milk. The efforts undertaken by NDDB have not only led to enhanced production, improvement in methods of processing and development of a strong marketing network, but have also led to the emergence of dairying as an important source of employment and income generation in the rural areas. It has also led to an improvement in yields, longer lactation periods, shorter calving intervals, etc through the use of modern breeding techniques.

Establishment of milk collection centers and chilling centers has enhanced life of raw milk and enabled minimization of wastage due to spoilage of milk. Operation Flood has been one of the world’s largest dairy development programmes and looking at the success achieved in India by adopting the co-operative route, a few other countries have also replicated the model of India’s White Revolution.

1.3.6 PER CAPITA AVAILABILITY OF MILK
Table 1.4: Per capita availability of milk

<table>
<thead>
<tr>
<th>Year</th>
<th>gm/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>132</td>
</tr>
<tr>
<td>1960</td>
<td>127</td>
</tr>
<tr>
<td>1968</td>
<td>113</td>
</tr>
<tr>
<td>1973</td>
<td>111</td>
</tr>
<tr>
<td>1980*</td>
<td>128</td>
</tr>
<tr>
<td>1990</td>
<td>178</td>
</tr>
<tr>
<td>1992</td>
<td>192</td>
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<td>1999</td>
<td>203</td>
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<tr>
<td>2000</td>
<td>212</td>
</tr>
<tr>
<td>2001E</td>
<td>225</td>
</tr>
<tr>
<td>2002P</td>
<td>250</td>
</tr>
</tbody>
</table>

* Operation flood was launched in 1970


1.3.7 MILK MARKETING IN INDIA

Dairy farming is a source of supplementary income for thousands of small and marginal farmers and landless laborers in India. Market oriented smallholder dairying offers significant scope for diversification and thus helps in increasing income and employment for the farmers. The profitability of dairy enterprise depends upon cost structure and a remunerative price for which a good marketing outlet is crucial. Milk is procured, processed and sold by various mediators involved in the dairy business from the point of production to consumption either as fresh liquid milk or processed milk products.

Conventionally, these mediators engaged in milk marketing have been classified into ‘organized or formal’ and ‘unorganized or informal’, though a clear definition of organized and unorganized does not exist. An ‘informal’ path is defined as where
some or all the actors involved in milk production, collection, processing and
distribution operate outside the sector that is regulated and where in practice, taxes
and subsidies apply and are not evaded. Broadly, the dairy cooperatives,

Government run milk producing units and large private dairies are classified as
‘formal’ sector where as village vendors, local halwais, bhattawalas, curd and tea
shops, contractors and small-scale private dairies are classified as ‘Informal’
segment.

Though the share of organized market has steadily increased over the last few
decades, the informal sector still accounts for a very large proportion of marketed
milk in the country. In the year 2002-03, nearly [20] 85 percent of the marketed milk
was handled by the informal segment comprising middlemen, private milk traders
and direct sale from producer to consumer.

Moreover, nearly 85 percent of all the milk that entered the exchange economy found
its way into the urban areas. Thus, it is the urban demand that is the main source of
cash for rural milk producers. It is further estimated that out of 3700 cities and towns
in India, only 778 are served by organized milk distribution network. Only [20] 15
percent of the Milk marketed is packed, of which 94 percent is in pouches. It is
evident that not only is the informal sector very large, it is the only channel available
to about 80 percent of the towns in India.__________

[20] Indian Dairyman Report, 2002

1.3.7.1 Growing urbanization
The effective milk market is largely confined to urban areas. The expected rise in
urban population would be an advantage to the Indian dairying. Presently, the
organized sector both cooperative and private and the traditional sector cater to this
market.

1.3.7.2 Potential for further growth
Of the three A’s of marketing – availability, acceptability and affordability,
Indian dairying is already endowed with the first two. People in India love to drink
milk. Hence no efforts are needed to make it acceptable. Its availability is not a
limitation either, because of the ample scope for increasing milk production, given the
prevailing low yields from dairy cattle. It leaves the third vital marketing factor
affordability. How to make milk affordable for the large majority with limited
purchasing power? That is essence of the challenge. One practical way is to pack
milk in small quantities of 250 ml or less in polythene sachets. Already, the glass bottle for retailing milk has given way to single-use sachets which are more economical. Another viable alternative is to sell small quantities of milk powder in mini-sachets, adequate for two cups of tea or coffee.

**1.3.7.3 Indian (traditional) milk products**

There are a large variety of traditional Indian milk products such as:

- Makkhan – Unsalted butter
- Ghee – Butter oil prepared by heat clarification, for longer shelf life
- Kheer – A sweet mix of boiled milk, sugar and rice
- Basundi – Milk and sugar boiled down till it thickens
- Rabri – Sweetened cream
- Dahi – A type of curd
- Lassi – Curd mixed with water and sugar/salt
- Channa/Paneer – Milk mixed with lactic acid to coagulate
- Khoa – Evaporated milk, used as a base to produce sweet meats

The market for indigenous based milk food products is difficult to estimate as most of these products are manufactured at home or in small cottage industries catering to local areas.

Consumers while purchasing dairy products look for freshness, quality, taste and texture, variety and convenience. Products like Dahi and sweets like Kheer, Basundi and Rabri are perishable products with a shelf life of less than a day. These products are therefore manufactured and sold by local milk and sweet shops. There are several such small shops within the vicinity of residential areas. Consumer loyalty is built by consistent quality, taste and freshness. There are several sweetmeat shops, which have built a strong brand franchise, and have several branches located in various parts of a city.

**1.3.7.4 Branding of traditional milk products**

Among the traditional milk products, ghee is the only product, which is currently marketed, in a branded form. Main ghee brands are Sagar, Milkman (Britannia), Amul (GCMMF), Aarey (Mafco Ltd), Vijaya (AP Dairy Development Cooperative Federation), Verka (Punjab Dairy Cooperative), Everyday (Nestle) and Farm Fresh (Wockhardt).
With increasing urbanization and changing consumer preferences, there is possibility of large scale manufacture of indigenous milk products also. The equipments in milk manufacturing have versatility and can be adapted for several products. For instance, equipments used to manufacture yogurt also can be adapted for large scale production of Indian curd products (Dahi and Lassi). Significant research work has been done on dairy equipments under the aegis of NDDB.

Mafco Limited sells Lassi under the Aarey brand and flavored milk under the Energee franchise (in the Western region, mainly in Mumbai). Britannia has launched flavored milk in various flavors in tetra packs.

GCMMF has also made a beginning in branding of other traditional milk products with the launch of packaged Paneer under the Amul brand. It has also created a new umbrella brand “Amul Mithaee”, for a range of ethnic Indian sweets that are proposed to be launched the first new product Amul Mithaee Gulabjamun has already been launched in major Indian markets.

1.3.7.5 Western milk products
Western milk products such as butter, cheese and yogurt have gained popularity in the Indian market only during the last few years. However consumption has been expanding with increasing urbanization.

1.3.7.6 Regulatory framework
The dairy industry was de-licensed in 1991 with a view to encourage private investment and flow of capital and new technology in the segment. Although de-licensing attracted a large number of players, concerns on issues like excess capacity, sale of contaminated/ substandard quality of milk etc induced the Government to promulgate the MMPO (Milk and Milk Products Order) in 1992. Milk and Milk Products Order (MMPO) regulates milk and milk products production in the country.

1.3.7.7 Amul's secret of success
The system succeeded mainly because it provides an assured market at remunerative prices for producers’ milk besides acting as a channel to market the production enhancement package. What's more, it does not disturb the agro-system of the farmers. It also enables the consumer an access to high quality milk and milk products. Contrary to the traditional system, when the profit of the business was
cornered by the middlemen, the system ensured that the profit goes to the participants for their socio-economic upliftment and common good. Looking back on the path traversed by Amul, the following features make it a pattern and model for emulation elsewhere. Amul has been able to:

- Produce an appropriate blend of the policy makers farmers board of management and the professionals: each group appreciating its roles and limitations
- Bring at the command of the rural milk producers the best of the technology and harness its fruit for betterment
- Provide a support system to the milk producers without disturbing their agro-economic systems
- Plough back the profits, by prudent use of men, material and machines, in the rural sector for the common good and betterment of the member producers and
- Even though, growing with time and on scale, it has remained with the smallest producer members. In that sense, Amul is an example par excellence, of an intervention for rural change.


The Union looks after policy formulation, processing and marketing of milk, provision of technical inputs to enhance milk yield of animals, the artificial insemination service, veterinary care, better feeds and the like – all through the village societies.

1.4 NATIONAL MILK GRID

The mechanical modernization of dairies in the cooperative, public and private sector has led to far reaching changes in the milk marketing, preservation and transportation of dairy products. Taking note of such development, the national commission on agriculture has come out with the idea of regional and national milk grid. Such milk grids effectively link the producers and consumers and thereby render certain benefits for both. Firstly, such a national grid connecting all the regional milk grids ensures the supply of milk to all the major urban centers dispersed throughout the length and breadth of the country.
Secondly, it enables the transfer of milk and milk products from surplus dairies to deficit ones and thereby help to overcome the regional imbalance supply and demand and areas of consumption. Thirdly, it will pave way for mutual arrangement of surplus producing dairies and the recipient dairies either in the fluid form or in the dry form in order to tide over temporary difficulties and seasonal imbalances. National milk grid was started in 1970 as an effective tool of milk producers in the country by giving a wider market scope in the industry. It aimed to provide a national market for milk and milk products.

The concept of milk grid is more acceptable and practicable to cooperative dairies than to private and public sector dairies. The cooperative believes in integrated development and are based on federal pattern of development and above all the principle of cooperation among cooperatives is the underlying principle of cooperative growth. The economic and technical advantages that will be accrued by the development of milk grid are as follow:

- Improvements in the marketing prospects
- Balancing in the seasonal fluctuations in the milk production
- Optimum utilization of available plant capacities of dairies in cooperative, public and private sectors
- Reduction in the overheads of small milk processors and unions, which need not individually go in for separate processing facility
- Easy enforcement of common standards and controls
- Reduction in inventory and optimum allocation of raw material

The benefits of both producers and consumers are clear. To producers, the grid brings city milk prices nearer, including a fair share of lean season price premia, which used to be pocketed by private traders. To consumers, the grid ensures a regular and timely supply of good quality milk throughout the year, instead of usual watered down milk every summer. To producers and consumers alike, the grid brings more rational prices throughout the year. Considering Mumbai, Kolkata, Chennai, Pune and Delhi in totality-the grid has already brought substantial changes in milk supplies and price since 1970.

The major objective of the national milk grid has been to reduce the regional supply and demand imbalance in milk by linking surplus producing areas with potential consumption centers.

1.5 PROFILE OF THE SELECTED DISTRICT [22]
A brief review of socio-economic and geographic conditions of the district has been undertaken. In the historical, political, agricultural and industrial map of all the 34 districts of Maharashtra state, Pune district holds a leading rank in respect of sugarcane cultivation and sugar industry as well as other industries.

The total area of this district is 15642 square kilometers. It is 5 % of the total area of the state of Maharashtra. Pune is the central administrative place, situated on Mumbai-Benguluru highway. It is 190 kms. Away from Mumbai, the capital of Maharashtra. There are fourteen tehsils in the district. They are – 1) Haveli 2) Shirur 3) Mulshi 4) Maval 5) Daund 6) Indapur 7) Baramati 8) Purandhar 9) Rajgurunagar 10) Junnar 11) Ambegaon 12) Bhor 13) Velhe 14) Pune City.

Pune and Pimpri-Chinchwad are the two municipal corporations in the district. There are three cantonment boards called Pune, Dehuroad and Khadki. There are eleven municipal councils in the district. They are - Alandi (Tal.-Rajgurunagar), Jejuri and Saswad (Tal.-Purandhar), Talegaon Dabhade and Lonavala (Tal.-Maval), Bhor, Daund, Baramati, Shirur, Junnar and Indapur.

[22] Profile of the district is collected from the official website of Pune district.

1.5.1 Pune district

Pune is well known as the ‘Queen of Deccan’ due to its scenic beauty and rich natural resources. Besides, it is famous for its religious and historical places. Pune city is known on the world map because of its educational, research and development institutions. The district also has an importance as an important military base. Pune is the most industrialized district in western Maharashtra and a famous IT hub in the country.

1.5.2 Pune’s culture

Pune exemplifies an indigenous Marathi culture and ethos, in which education, arts and crafts, and theatres are given due prominence. It is the birthplace of the poet-saint Tukaram (in Dehu) and Jnaneshvara (in Alandi), the author of the well-known commentary ‘Jnaneshwari’, on the “Bhagavad-Gita”.
It is the home of great freedom fighters like Bal Gangadhar Tilak, Agarkar and Gopal Krishna Gokhale. Jayant Narlikar, the famous contemporary scientist, is from Pune. Pune is the seat of North Indian Classical music. Annually, in the month of December, it hosts a three nightlong cultural program of vocal and instrumental classical music, called “Savai-Gandharva”. Pune has been an example for the blending of the culture and heritage with modernization and its side effects. With the Pune festival, Osho Commune International, Pune is the ‘veritable heartland’ of cultural Maharashtra – while you may not be looking to absorb culture through every pore, some of it certainly rubs off on you. Pune is the cultural capital of the Maharashtra.

1.5.3 Geographical location
Pune district is located between 17 degrees 54’ and 10 degrees 24’ north latitude and 73 degrees 19’ and 75 degrees 10’ east longitude. The district has geographical area of 15,642 sq.km. Pune district is bound by Ahmadnagar district on north-east,
Solapur district on the south-east, Satara district on south, Raigad district on the west and Thane district on the north-west. It is the second largest district in the state and covers 5.10% of the total geographical area of the state. The landscape of Pune district is distributed triangularly in western Maharashtra at the foothills of the Sahyadri Mountains and is divided into three parts: “Ghatmatha”, “Maval” and “Desh”. Pune district forms a part of the tropical monsoon land and therefore shows a significant seasonal variation in temperature as well as rainfall conditions. Climate of the western region of Pune is cool whereas the eastern part is hot and dry.

1.5.4 Transport and trade linkage
The district is well connected with the state capital and surrounding district headquarters through road and rail linkages. The road network consists of Express Highways, National Highways, State Highways and Major District Roads. The rail network consists of both broad gauge (Electrified and Non Electrified) double track as well as single track lines. The district headquarter has connectivity through airways for transport and trade to major airports within the country and to select international destinations. In spite of availability of perennial river stretches, there is no significant utilization of waterways in the district.

1.5.5 Road network
The district has total length of 13,642 km of roads (2001) of which 5394 km roads are bituminous surface, 3554 km roads of water bound macadam surface and 4694 km of other surface roads i.e. unmetalled road. The roads are classified according to their importance. Of the total road length in the district, 331 km road length is covered by National Highways and 1368 km by State Highways. The major and other district roads have a total length of 5388 km, which passes through all the talukas. Almost all the villages are well connected by water bound macadam road. The total length of village roads is 6555 km.

Following National Highways pass through the district:
National Highway No. 4 (Mumbai-Bangalore) – The NH-4 passes through following places in the district: Khandala, Lonavala, Talegaon, Chinchwad, Pune and Khed-Shivapur. It enters from Raigad district and exits in Satara district. Total length of NH4 in the district is 120 km.
National Highway No. 9 (Pune-Solapur-Hyderabad) – The NH-9 starts at Pune district and passes through Loni, Bhigawan and Indapur. It exits in Solapur district. Total length of NH9 in the district is 152km.

National Highway No. 50 (Pune-Nasik) – The NH-50 originates at Pune and passes through Chakan, Rajgurunagar, Manchar, Narayangaon, Aalephata and it exits in Nasik district. The total length of NH50 in the district is 95km.

1.5.6 Rail network
The broad gauge single and double track rail length within the district have a total length of 311 km. Of these, single line is 162 km and the double line is 149 km. Pune and Daund are the two railway junctions in the district. Following are the three main railway routes passing through the district:
Mumbai-Pune-Solapur rail route
Pune-Miraj rail route
Daund-Baramati rail route

1.5.7 Air route
Pune is well connected through domestic airlines with the entire country. The airport located at Lohegaon has recently acquired status of an international airport and is being used to carry domestic as well as international traffic. Also, it is proposed to develop an international air-cargo hub near Rajgurunagar tahasil of district.

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[22] Profile of the district is collected from the official website of Pune district.