

## Indian Dairy & Dairy Products Industry Update

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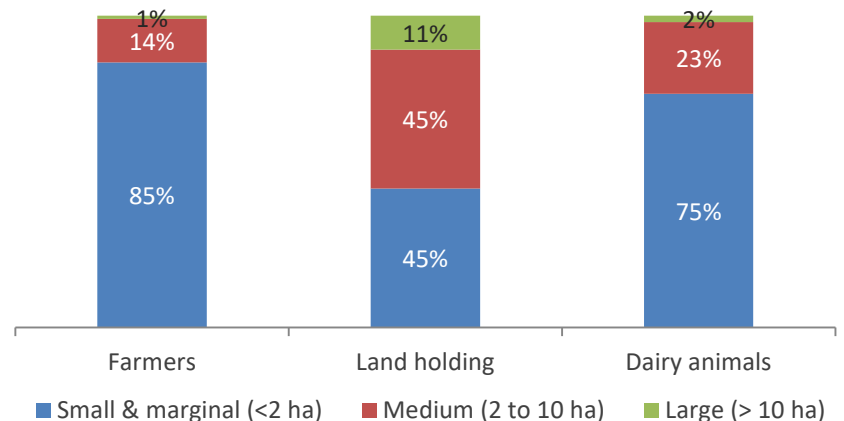
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**Overview**

India is the largest producer of milk in the world. The milk revolution (“Operation Flood”), started by National Dairy Development Board (NDDB) in 1970, transformed India from being milk deficient to the largest milk producer surpassing USA in 1988. The program was led by Dr Verghese Kurien, known as the Father of White Revolution in India. The Indian Dairy industry is at the cusp of another revolution, moving towards increased contribution from various value-added milk products. India, in its quest to become a matured dairy industry, is aggressively transitioning from just plain vanilla loose/ pouch milk to value-added products (VAP) market and from unorganized/local to more of an organized and branded market. These two structural shifts from unorganized to organized market and from liquid milk/ powder to value-added dairy products will provide long-term growth visibility to the organized dairy sector. The value added products will require capex in the initial phase, will improve the margins and return on investments over long run for the companies in the sector. The demand for value-added products will be driven by changes in macro-economic factors like increase in urbanization, nuclear families, increasing number of dual income households with working women and improved per capita spending. Most of the milk in the country is produced by small, marginal farmers and landless labourers.

**Chart 1: Category wise farmer’s land holding and animal holding**



Source: National Dairy Development Board (NDDB)

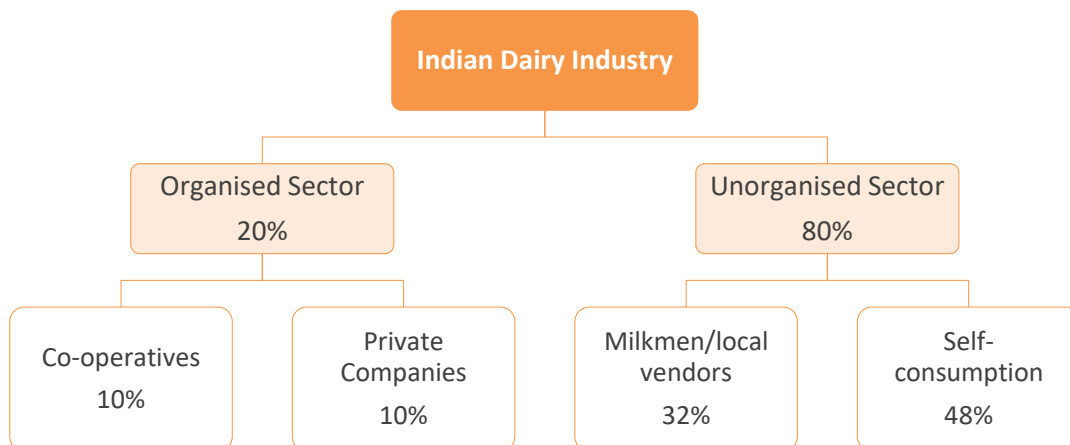
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The Indian dairy & dairy products industry comprises milk and large variety of milk products like flavoured milk, ghee, butter, curd, butter milk, cheese, paneer, ice cream, etc. Milk consumption in India is regular part of the dietary programme in the country as it comes with healthy nutrients such as calcium, proteins, vitamins, phosphorus, etc irrespective of the region and hence demand is likely to rise continuously with sustainable growth potential providing health benefits such as maintaining normal blood pressure, strengthening bones and providing energy, repairing muscle tissues, etc. among many others. It contributes over 20% to the agriculture GDP of the country. India has also retained the leadership position in milk production by producing 188 mn tonnes in FY19; accounting for about 22% of global milk production. Hence, dairy industry has played a crucial role in the agro-based Indian economy.

### Structure of the Indian Dairy Industry

The Indian dairy industry is divided into the organized and unorganized segments. The unorganized segment consists of traditional milkmen, vendors and self-consumption at home, and the organized segment consists of cooperatives and private dairies. As per the Annual Report for FY19 of Dept. of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture & Farmers Welfare, GOI, co-operatives & private dairies still procure only about 20% of the milk produced in the country, while 32% is sold in the unorganized market and about 48% is consumed locally. About 40% of the milk sold is handled by the organised sector and the remaining 60% by the unorganised sector. However, in most of the developed nations, 90% of the surplus milk is processed through organized sector. With the increase in population, rise in per capita income, changing lifestyle, affordable aspirational food habits, export opportunities etc., the demand for milk is expected to rise. **As per the Department of animal husbandry and dairying, it is estimated that the demand for milk would be in the range of 200 - 210 million tonnes by FY22.**

Structure of Indian Dairy Industry



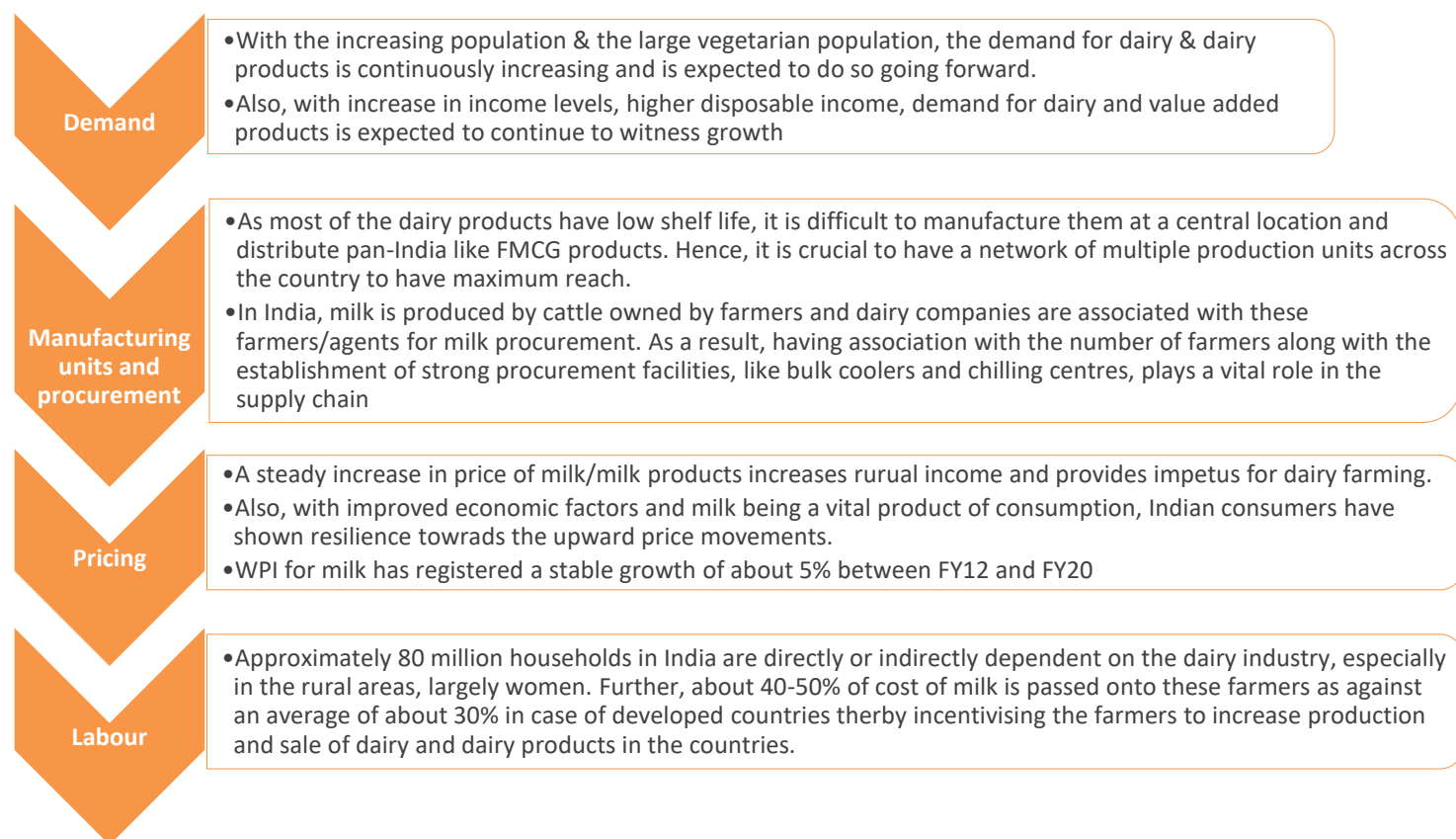
Source: Dept. of Animal Husbandry, dairying & fisheries, Ministry of Agriculture & Farmers Welfare, GOI

The dairy product industry has relatively low product differentiation. At the same time the industry is unorganised with a large number of small players. Organised dairy industry accounts for around 20% of the total milk produced. Approximately half of the milk produced is marketed. Out of the total milk distributed jointly by the organized and unorganized segments, about 50% is consumed in milk form and the balance is converted into various milk products like

milk powder, ghee, butter, cheese, yoghurt, etc. Cost effective technologies, mechanisation and quality control measures are seldom exercised in the unorganised sector and remain key issues to be addressed.

There is immense room for the organized sector to gain market share of marketable milk from unorganized sector by introducing standardization in milk quality testing and transparency in computing consideration being paid to farmers for their milk along with educating farmers on best dairy and animal husbandry practices. This could also dovetail well with the shift of consumer preference from unorganized to organized market. As per the Department of Animal Husbandry, Dairying and Fisheries, the organized milk handling is expected to grow from 20% at present to 50% by FY23.

#### 4 pillars of Dairy Industry



Source: CMIE, Industry, CARE Ratings

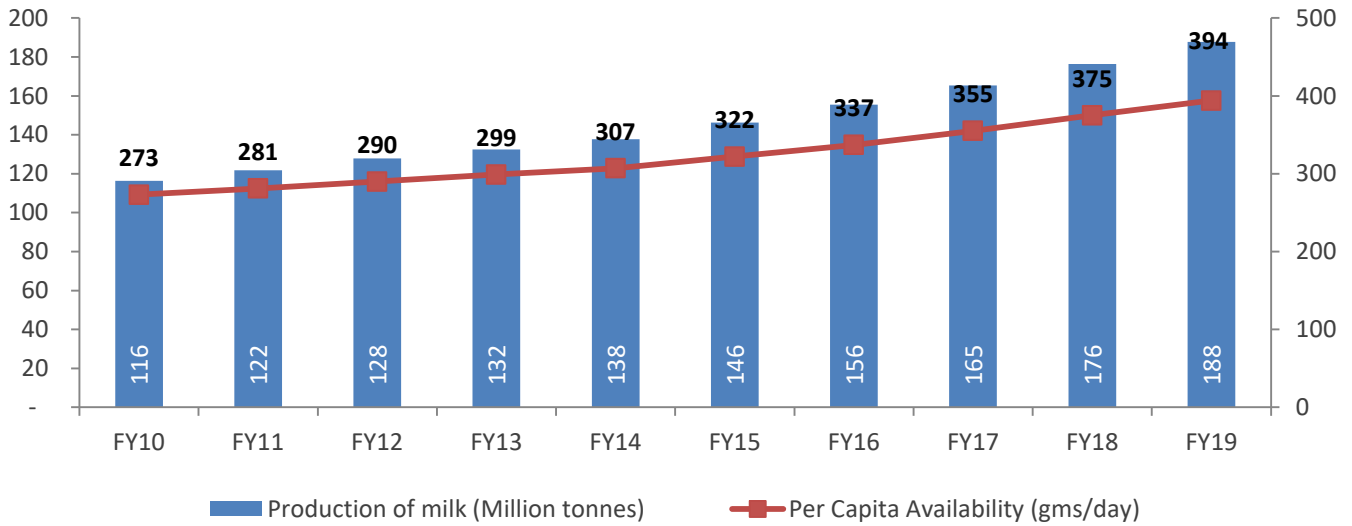
#### Milk production in India

The dairy sector in India has grown substantially over the years. According to NDDDB, India ranks first among the world’s milk producing nations, achieving an annual output of 188 million tonnes during the year FY19 which is approximately 2 times that of the USA, over 5 times of China and over 4 times of Pakistan.

In FY19, milk production stood at 188 million tonnes, registering a largely stable y-o-y growth of about 6.5% vis-à-vis a growth of about 6.6% witnessed during the previous year. Milk production has witnessed a steady growth in the country registering a CAGR of about 5.5% between FY10 and FY19. However, the production recorded a higher CAGR of 6.4% between FY16 and FY19 led by increased consumption of dairy products in the country.

Also, the per capita availability of milk in the country registered a CAGR of about 4.2% between FY10 and FY19 and a CAGR of about 5.2% between FY16 and FY19. Per capita availability increased from 273 grams per day in FY10 to 394 grams per day in FY19.

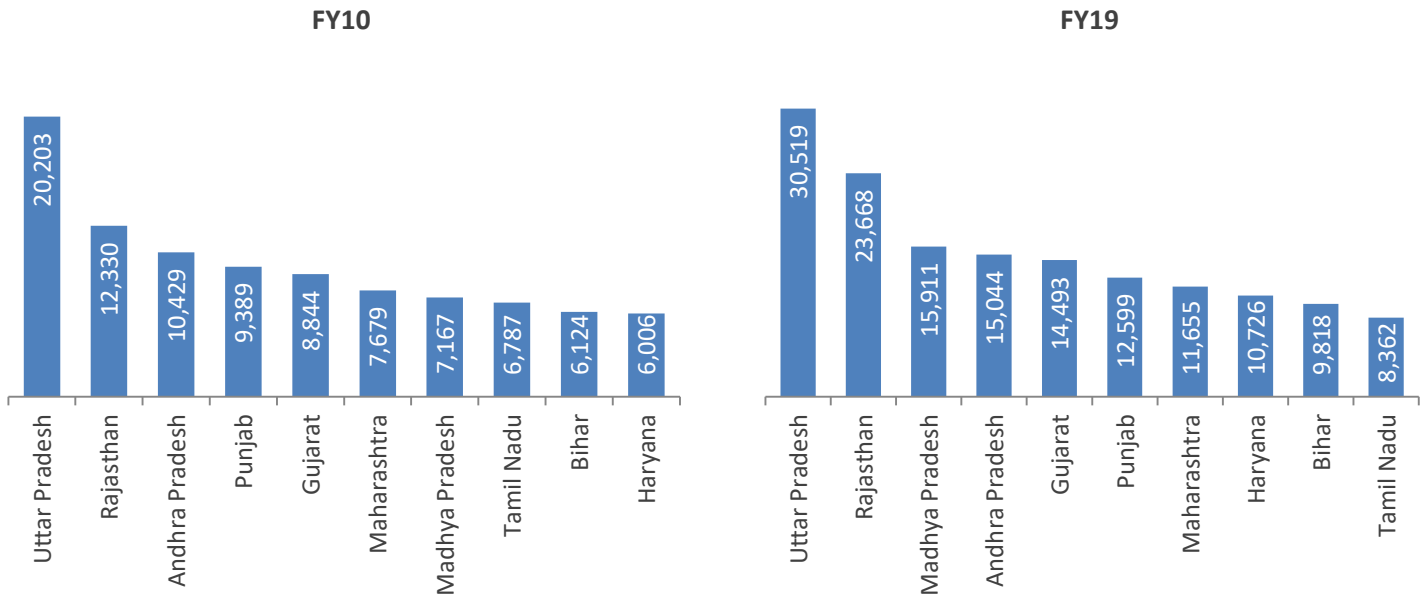
**Chart 1: Annual Milk production in India (Million tonnes) and per capita availability of milk (gms/day)**



Source: National Dairy Development Board (NDDB)

**State –wise production**

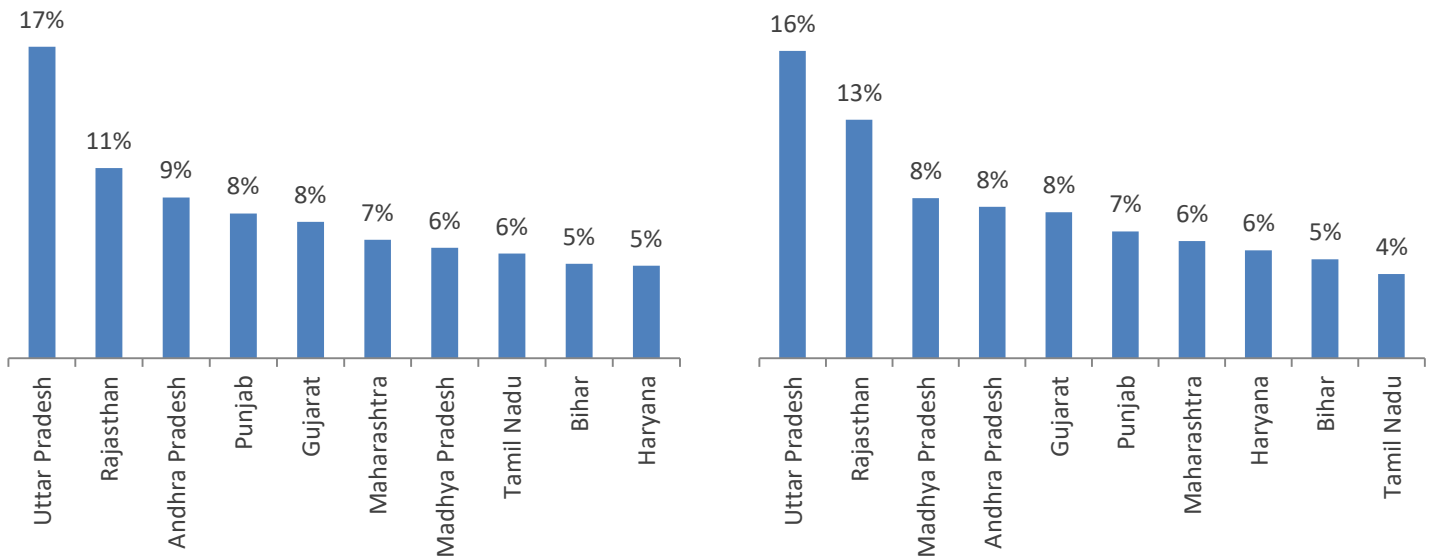
**Chart 2: State-wise milk production (000 tonnes)**



Source: National Dairy Development Board (NDDB)

The top 10 states of milk producers have continued to remain constant over the last few years accounting for a share of over 80% in the total milk production in the country. In FY10, Madhya Pradesh ranked 7<sup>th</sup> in the milk production and it has moved up to 3<sup>rd</sup> position in FY19, while Punjab has moved to 6<sup>th</sup> position, down from 4<sup>th</sup> in FY10.

**Chart 3: Top-10 milk producing states (% share in total production)**  
FY10 FY19

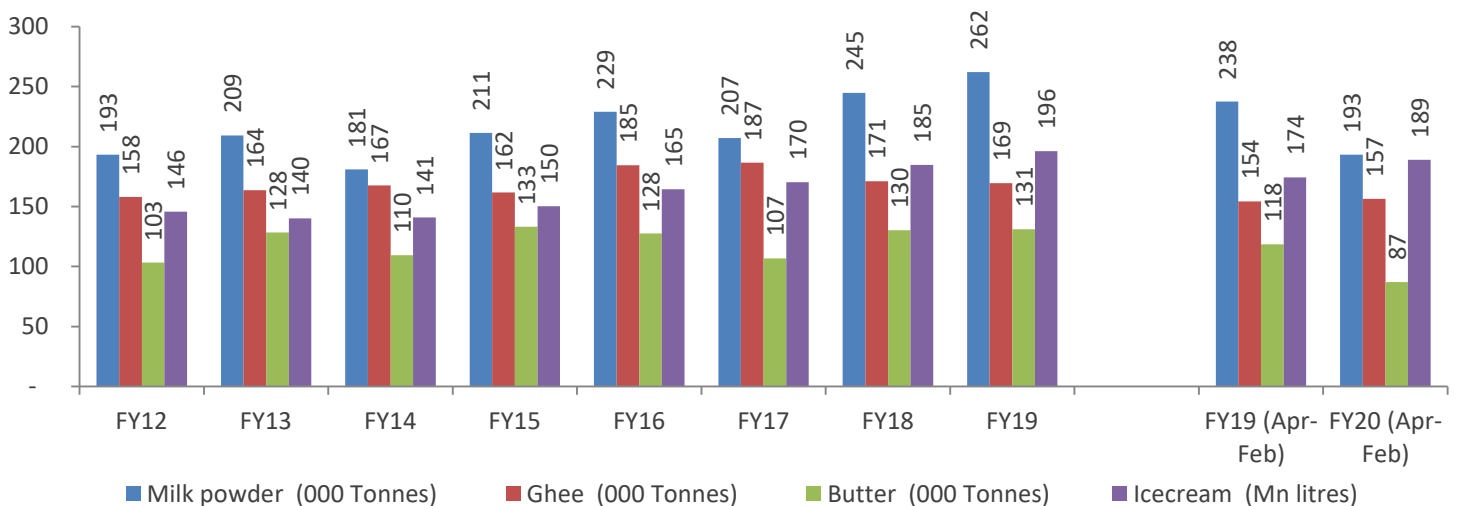


Source: National Dairy Development Board (NDDB)

### Dairy Products

During the last five to ten years, India has seen dramatic shift towards consumption of value-added products such as cheese, yoghurt, UHT (ultra-heat treatment) milk, flavored milk, and whey. To tap the advantages of the changing consumer food preferences, most organized players are expanding product portfolios in the value-added segment. This segment offers high growth potential and better margins versus the liquid milk and Skimmed Milk Powder (SMP) segment.

**Chart 4: Production of milk products**



Source: CMIE

**Table 1: Production & growth of milk products**

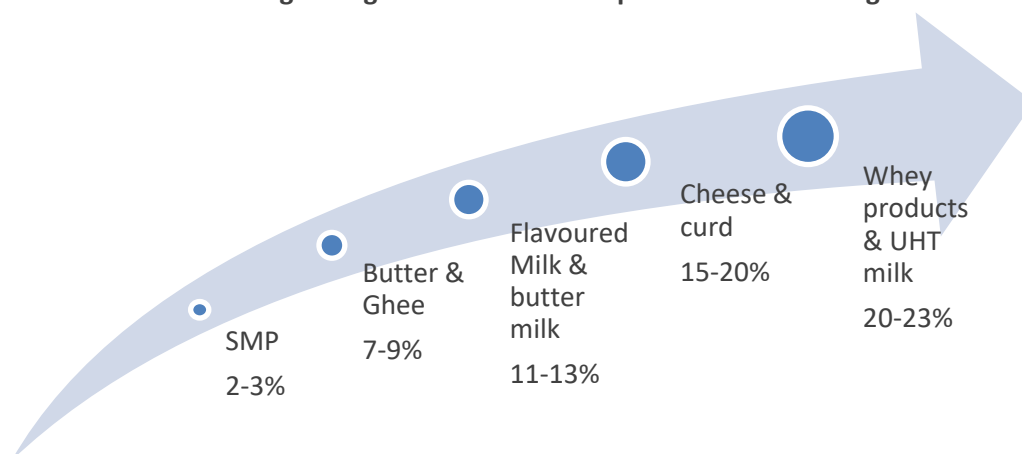
	Milk powder (000 Tonnes)	Growth rate (%)	Ghee (000 Tonnes)	Growth rate (%)	Butter (000 Tonnes)	Growth rate (%)	Icecream (Mn litres)	Growth rate (%)
FY13	209	8.4%	164	3.6%	128	24.3%	140	-3.9%
FY14	181	-13.6%	167	2.3%	110	-14.7%	141	0.6%
FY15	211	16.9%	162	-3.5%	133	21.5%	150	6.7%
FY16	229	8.3%	185	14.1%	128	-4.2%	165	9.4%
FY17	207	-9.6%	187	1.1%	107	-16.3%	170	3.6%
FY18	245	18.1%	171	-8.3%	130	22.0%	185	8.5%
FY19	262	7.1%	169	-1.0%	131	0.6%	196	6.2%
FY19 (Apr-Feb)	238	8.5%	154	-1.6%	118	2.0%	174	7.5%
FY20 (Apr-Feb)	193	-18.7%	157	1.5%	87	-26.6%	189	8.4%

Source: CMIE

The value-added products overall contribute to ~35-40% of the total dairy market in India and commodity products together contribute to almost ~65% of market share. Furthermore, within the value-added segment, largest product category is ghee, having a market share of about 15-18% in the overall dairy market. While loose packets of curd is available locally, a key characteristic of emerging value-added products like UHT milk, flavoured milk, low-fat curd/yogurt, cheese and whey is that 100% of these products are sold through organized market. **The value-added products market is under-penetrated, thus having tremendous scope for the growth and is expected to grow at much faster rate as compared with the commodity market.**

Considering the higher growth potential, the private companies have added capacities in the value-added product categories for the past few years such as cheese, curd, flavoured milk, along with addition in the milk procurement capacities. The private players are also investing in brand building exercise and aiming to add more B2C business in their portfolio.

**Chart 5: Average margins for value added products across categories**



Note: SMP – skimmed milk powder, UHT – ultra-heat treatment  
Source: Industry

**Trade**

India’s export of its dairy products has increased to countries like Bhutan, Afghanistan, Canada, Egypt, and the United Arab Emirates. India has also imported a significant amount of dairy products from countries like France, New Zealand, Ireland, France, Ukraine, and Italy.

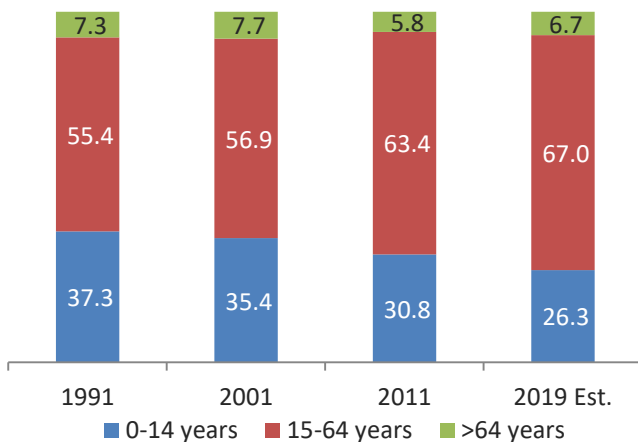
According to CMIE, as of FY19, of the total exports of milk powder globally in quantity terms, top 5 countries account for about 90% of the share. About 47% of milk powder is exported to Bangladesh followed by Malaysia (17%), Afghanistan (13%), Pakistan (8%) and UAE (5%). In terms of malted food, top 5 countries account for about 75% share with USA holding a share of about 19% followed by UAE (16%), Bhutan (14%), Nepal (13%) and Bangladesh (12%). In terms of imports of milk powder, top 5 countries account for a share of about 92% as of FY19. India imports about 40% its total imports of milk powder from France followed by Denmark (34%), Australia (7%), Canada (6%) and Germany (5%).

**Growth drivers**

**1. Demographic advantage**

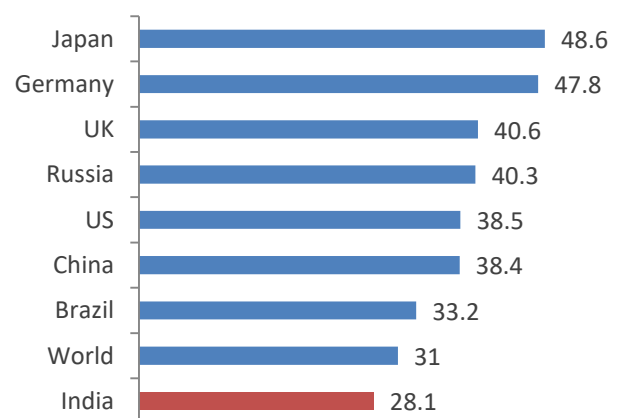
- The growing Indian population has also led to increase in the ‘earning population’ (age group 15-60) of the country. The proportion of Indian populace in the age group of 15-64 years increased from 55.4% in 1991 to 67% in 2019. Also, about 25-30% population stands below 14 years of age that consumes higher quantities of milk in the country. Value-added dairy products have been gaining importance due to changes in demographic and dietary patterns
- Considering the huge size of the Indian population, the lower median age implies a higher number of working people thereby clearly outlining the immense earning as well as spending potential of the Indian populace
- Taking into account the age group below 25 years being one of the highest spending age group, the current age dynamics are expected to boost the retail sales of dairy and dairy products in India. The median age of India is 28.7 years, one of the lowest globally in comparison to 38.5 years in the US, 48.6 years in Japan and 38.4 years in China.

**Chart 6: Age distribution of Indian population (%)**



Source: CIA – The World Factbook

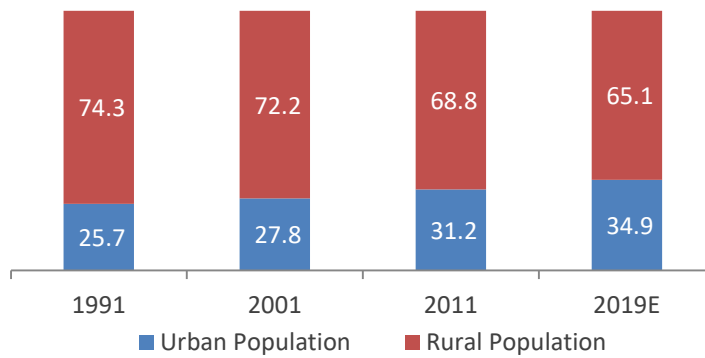
**Chart 7: Median age of population – 2019E**



### 2. Rapid urbanization

- A majority of India still lives in the ‘villages’. This statement no doubt holds true but the figures suggest that there has been a paradigm shift of the Indian populace in terms of rural–urban divide. The aspirations of higher income, brand awareness, higher standard of living etc. that leads to higher demand for clean, hygienic, ready-to-eat products holds great potential for the dairy industry in the country.

**Chart 8: Population Division (%)**

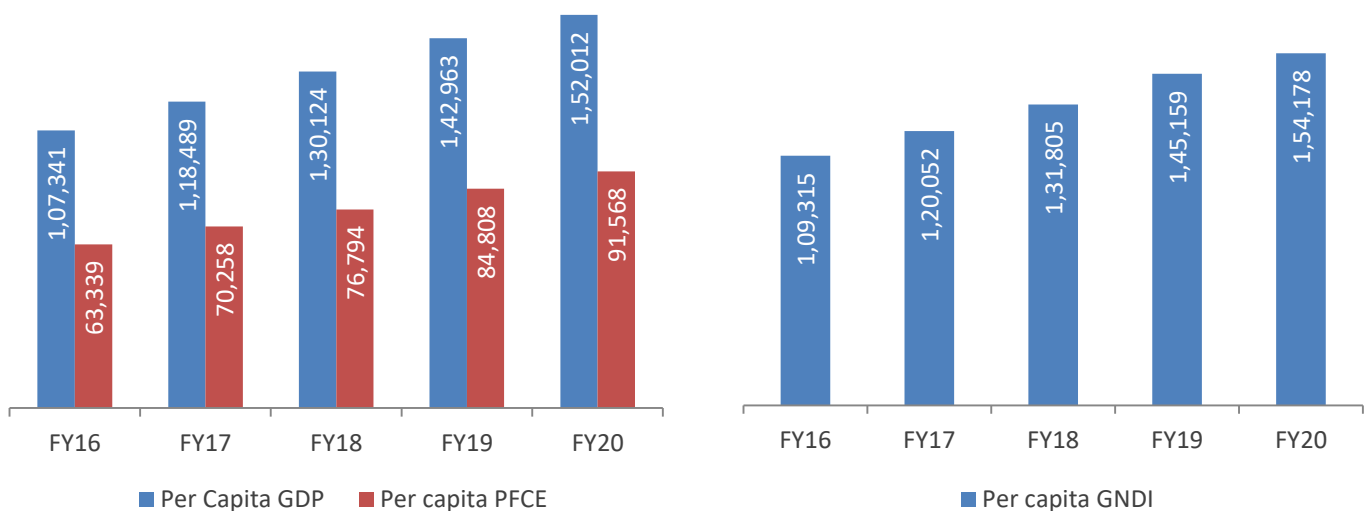


Source: Census, CIA - The World Factbook

### 3. Rising income levels & growing per capita expenditure

- In the last decade, Indian economy has progressed rapidly in terms of consumption as well as expenditure. Correspondingly, India’s per capita GDP has gone up from Rs 107,341 in FY16 to Rs 152,012 in FY20 at a CAGR of 9.1% fuelling a consumption boom in the country. Correspondingly, the per capita personal disposable income surged from Rs 109,315 in FY16 to Rs 154,178 in FY20 at a CAGR of 9%. Similarly, the per capita private final consumption expenditure too rose from Rs 63,339 in FY16 to Rs 91,568 in FY20 at a CAGR of 9.7%. The growth in country’s per capita GDP in turn has increased the disposable income of the populace ultimately driving the country’s consumption rapidly

**Chart 9: Per capita indicators (Rs at current prices)**



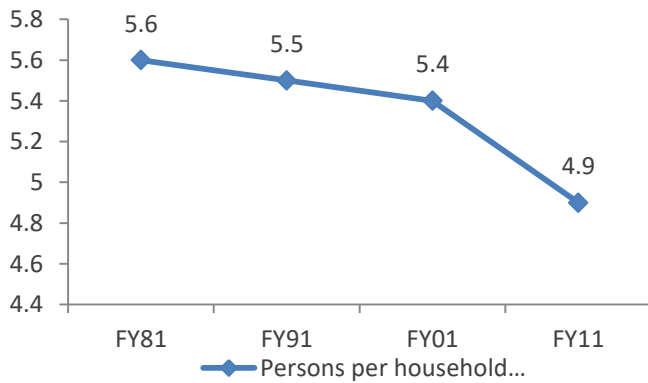
Source: CMIE



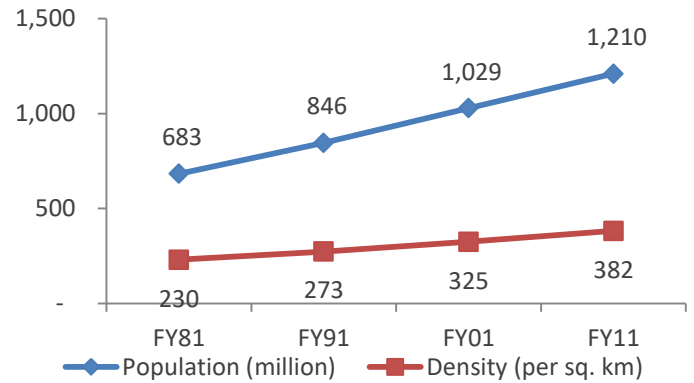
#### 4. Rising growth in number of nuclear families

- The rapid growth of population, increased urbanisation and the unavailability of large real estate spaces have led to the growth of nuclear families in the country. The average number of person per household has reduced from 5.6 in FY81 to 4.9 in FY11
- The growing number of households has not only pushed the demand for necessities but the combined mix of greater purchasing power and willingness to spend has resulted in the nuclear family’s shifting focus towards luxury/semi-luxury products and change in consumption patterns

**Chart 10: Trends in family size**



**Chart 11: Growth in population and density**

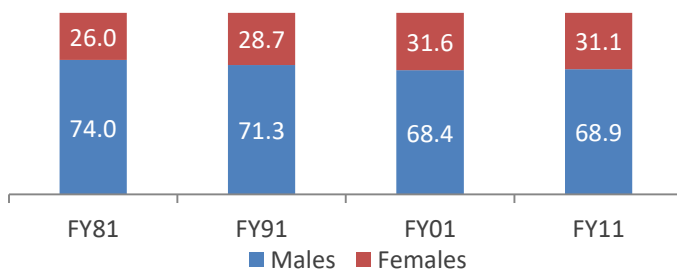


Source: Census of India

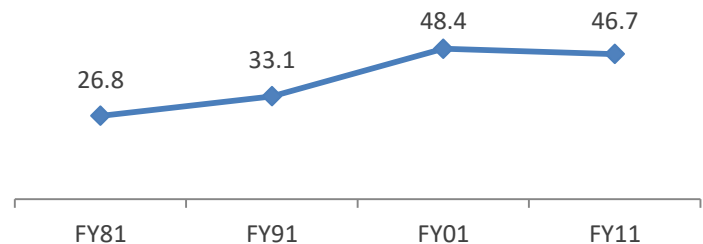
#### 5. Dual income households

- On the backdrop of growing Indian economy during the recent years, the participation of female workforce in the country’s economic activities has increased considerably. The proportion of the female workforce which accounted for 26% of the country’s workforce in FY71 has scaled to 31% during FY11. Notably, the percentage of working women involved in the organised industrial activities too has increased from 27% in FY81 to 47% in FY11. The limitation on availability of data for past few years as well as the number of dual income households in the country is to be noted here.
- The higher purchasing power in the hands of ‘working-women class’ compared to the housewives enhances the ability of the former to spend much more comparatively. Further the ‘time constraint’ factor also needs to be accounted for by the working women while making purchases of various day-to-day requirements. Capitalizing on the same, the industry has various value added and ready-to-eat products in the market

**Chart 12: Share in total working population (%)**



**Chart 13: Proportion of females working in organised industrial activities (%)**



Source: Census of India, Socio-Economic Statistics – 2011, CMIE

**6. Increasing health awareness & vegetarianism**

- Over the last few years, there has been a growing awareness towards health and nutrition. Also, approximately 30% of the country’s population follows vegetarianism and the share is ever increasing.
- This has led to increasing quality and safety concerns fuelling demand for packaged food. Younger consumers are especially trending towards more health conscious eating habits and growing needs for additional nutrient sources is driving growth of value added dairy products.

**Risks and limitations of the Indian dairy industry**

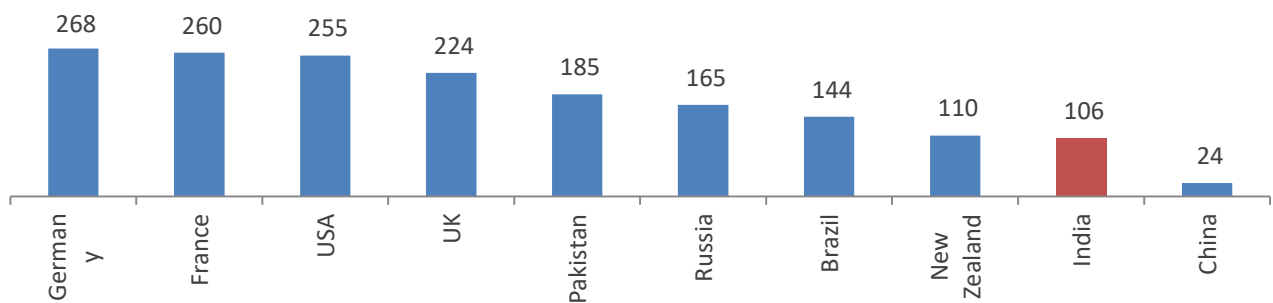
**1. Dominance of the unorganised sector**

As mentioned earlier, unorganized sectors have predominance over the Indian Dairy Industry. On account of the same, despite India being the largest producer of milk and milk products, none of the major Indian dairy companies feature on the list of top 15 major dairy giants, while one makes it to the list of top 20 dairy companies in the world.

**2. Per capita milk consumption**

The per capita consumption of milk in India stands at 106 kgs per year, which is well below that of other major milk markets, except for China as can be seen below:

**Chart 14: per capita consumption of milk (Top 10 milk producing countries) (2017)**



Source: Statista, Our world in data, Industry

**3. Regional play**

- Being a highly perishable product, milk is required to be procured from nearby areas in order to take it for processing. Furthermore, for the liquid milk, procurement and distribution distance should be minimal for the economies of profitability to play out. Also, the availability of animals in a particular area, farmers’ inclination towards selling the produce to co-operatives and self-consumption, demand and supply for the milk and dairy products within a region affect the prices of the milk. As a result, the milk prices in India vary with state to state and region to region within a particular state.

**4. Weather conditions and environmental factors**

- Climate change and scarcity of water are the major threats to the dairy industry. A temperate weather is more conducive to higher milk production – the raw milk availability declines during summers. A drought or a rainfall deficit results in increased cost of cattle feed and reduced availability of cattle fodder thereby constraining milk supply. Such adverse weather and seasonal conditions may lead to a decline in supply and a spike in raw milk prices.

## 5. New product risk

- Anticipating and responding to the changing consumer preferences in a timely manner helps building a strong consumer demand for the brand. Therefore, continuous investments in research and development as well as introduction of new products with different variants of existing products become very important for the players. With majority of players in the industry being in the unorganised segment, this can sometimes pose a challenge to such small players.

## Financials

CARE has analysed the basic revenue and cost structure of the organised dairy industry in India. After increasing by about 9% in FY18, net sales (revenue) of the industry witnessed a lower growth of over 3% in FY19. While the industry demand slowdown was generally due to lower growth in the economy during FY19, the decline in profits was largely led by one company in the set that recorded a huge increase in its other expenses (provision for doubtful debts, bad debts written off, foreign exchange fluctuations, etc) during the year.

**Table 2: Industry Sales and Margins – Annual (dairy products)**

30 companies	Rs crore			Growth rates (%)	
	FY17	FY18	FY19	FY18	FY19
Net sales	54,555	59,439	61,300	9.0	3.1
Operating Profits	1,984	2,014	-794	1.5	*
Operating Profit Margin (%)	3.6	3.4	-1.3		
Net Profits	931	510	-2,514	-45.2	*
Net Profit Margin (%)	1.7	0.9	-4.1		

Note: 1. \* cannot be ascertained due to high positive/negative values

2. The industry margins are based on the financial results of 30 players in the dairy & dairy products industry

Source: CARE Ratings, Ace Equity

As of FY19, 210 Dairy Cooperative Milk Unions exists which cover about 16.5 million farmers under the ambit of 185,903 village level dairy corporative societies. The Cooperative Milk Unions have procured an average of 496 Lakh Kg per day of milk during the year as compared to 473 lakh per day in the previous year recording a growth of 4.8%. The sale of liquid milk by the Cooperative Dairies has reached 327 lakh liters per day during the year vis-à-vis 337 lakh liters per day during the previous year, registering a decline of about 3% on y-o-y basis.

## Government policies & regulations

The industry is not regulated in terms of scalability barriers. Government has not imposed any price control on the industry and allowed 100% FDI. In order to promote the food processing industry, the government has given concessions under the GST regime keeping it nil for processed dairy products, while the basic customs duty on skimmed milk is kept at about 1%. While milk, curd and buttermilk continue to be exempted from tax coverage, some value-added products such as butter and cheese have ended up incurring a higher tax rate under GST as against the pre-GST average tax rate.

**Table 3: GST rates for major milk products**

Products	Pre GST	Post GST
Curd, Lassi, Butter Milk, Unbranded paneer	4%	0%
Ultra-Heat Treatment (UHT) Milk, Cream, Yogurt, Whey, Milk powder	6%	5%
Butter, cheese	5-7%	12%
Condensed milk, Ice cream	10-12%	18%

Source: CBEC

**Some recent announcements by the government to provide stimulus to the industry**

1. The finance minister has proposed to set up Animal Husbandry Infrastructure Development Fund worth Rs 150 billion in order to support private investment in dairy processing, value addition, and cattle feed infrastructure. It plans to provide incentives for setting up plants for export of niche products. The minister also proposed to launch a National Animal Disease Control Programme for Foot and Mouth Disease (FMD) and Brucellosis with a total outlay of Rs 133 billion. It will ensure 100% vaccination of cattle, buffalo, sheep, goat and pig population.
2. On May 14, 2020, the Centre announced a Rs 1 billion interest subvention scheme on working capital in order to help milk co-operatives and farmer-owned milk producer companies (FPC) struggling with excess milk supply following restricted procurement by private dairies amid the nation-wide lockdown over coronavirus (Covid-19). The scheme, which will be operated through the National Dairy Development Board, is aimed at helping dairies convert the surplus quantity of milk into high shelf-value products such as milk powder, white butter and ghee, among others. The programme provides for interest subvention of two per cent per annum on working capital, with an additional incentive of two per cent per annum interest subvention to be given in case of prompt and timely repayment or interest servicing. As per reports, it would be available on working capital loans taken by dairies and FPCs from scheduled commercial banks.

Source: CMIE

**Investments**

Project completions in the dairy products industry are expected to drop to about Rs 27 billion during 2019 and 2021 as compared to a total of nearly Rs 32 billion worth projects commissioned between 2017 and 2019. The lockdown imposed by the government in order to contain the spread of the pandemic Covid-19 is expected to significantly impact project commissioning in the industry. This has affected not only demand but also impacted the entire supply chain.

Demand for milk and other dairy products has dropped significantly since the lockdown which resulted in the closure of hotels, restaurants, sweet marts and the unorganised tea stalls. According to reports, milk consumption in the country has witnessed a drop of about 25-30% during the period. Though the lockdown was supposed to be in force from March 23, 2020 to April 14, 2020, it has now been extended for the fourth time to May 31, 2020 and now June 2020 end with the spread of Covid-19 not showing any signs of slowing down in India. The lockdown has also disrupted the supply chain as transportation has been restricted. Many farmers are finding it difficult to sell their produce. Also, dairies are hesitating to purchase milk due to the drop in consumption and also low demand for skimmed milk powder (SMP). This has resulted in a drop in prices of milk. Dairies are likely to face a tough time grappling with the issue of oversupply of milk in the domestic market which may also impact margins. Further, the government has now announced 'Unlock 1.0' starting from June 1, 2020 to June 30, 2020, empowering the states to prohibit certain activities while putting restrictions in some states for

containment of the virus depending on the situation and spread of covid-19. While home-delivery for restaurants was permitted in lockdown 4.0 with certain restrictions, dine-in facility with 50% occupancy is permitted for all non-AC restaurants starting June 8, 2020. However, decision to open restaurants remains with the states. Hence, plans for expansion and investment in capital expenditure are expected to take a back seat in the near term. At present, project investments are expected to drop to nil in the March 2020 and June 2020 quarter on account of the lockdown conditions, which are likely to extend further.

## Outlook

- Demand for milk and other dairy products has dropped significantly in the country since the lockdown which resulted in the closure of hotels, restaurants, sweet marts and the unorganised tea stalls. According to reports, milk consumption in the country has witnessed a drop of about 25-30% during April and May 2020. However, some of this demand was largely met by an increased consumption by the households led by lockdown.
- **CARE Ratings estimates milk production to have increased by about 3.9% in FY20 to reach 195 million tonnes. Also, between FY19 and FY23, milk production is expected to increase at about 4.8% CAGR to reach 226 million tonnes by FY23 while the per capita availability is expected to witness a CAGR of about 4.6% during the period to cross 470 grams per day by FY23**
- With the gradual relaxations in lockdown starting June 2020 and opening of various sweet shops, restaurants and hotels in the country, the demand for dairy products is expected to pick up slowly.
- Further, procurement of SMP / milk at low prices by organised dairy players who have already hiked retail milk prices, shall aid margin growth in coming months. Shift to branded and packaged milk from loose milk due to fear of contracting the disease will also be favourable for the demand of products of organised players.
- The long-term outlook of Indian dairy sector is favourable on account of increasing population, increase in per capita consumption, increase in expenditure on package food, brand awareness, urbanization & increase in nuclear families and government support. The growth would be primarily driven by increase in the demand for value-added milk products, which is also margin accretive for the players.