

USDA Foreign Agricultural Service

GAIN Report

Global Agricultural Information Network

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India

Dairy and Products Annual

2017

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Report Highlights:

India's fluid milk production in Calendar Year (CY) 2018 is forecast to increase by around four percent to 167 million metric tons (MMT) assuming a normal monsoon. CY 2018 NFDM and butter exports are projected at 15,000 and 10,000 metric tons respectively on expectations of moderate export demand. India's domestic production continues to fall short of increasing demand which is not able to be met with imports due to veterinary health certificate requirements that restrict trade.

Executive Summary:

India's fluid milk production in CY 2018 is forecast to increase by around four percent to 167 million metric tons (MMT) assuming a normal monsoon. Demand for most of the value added milk products is rising with growing incomes, urbanization, and demographic changes. India's milk production is constrained mainly due to factors such as lower milk productivity, water scarcity, and insufficient feed and fodder resources. CY 2018 NFD and butter exports are projected at 15,000 and 10,000 metric tons respectively on moderate export demand. India's domestic production continues to fall short of increasing demand which is not able to be met with imports due to veterinary health certificate requirements that restrict trade.

Commodities:

Dairy, Butter

Dairy, Milk, Fluid

Dairy, Milk, Nonfat Dry

Production:

India's CY 2018 fluid milk production is forecast to rise by 4.4 percent to 167 million metric tons (MMT) assuming a normal monsoon. CY 2018 non-fat dry milk (NFD) production levels are estimated at 600,000 MT based on increasing domestic demand and moderate export expectations. CY 2018 combined butter and ghee (clarified butter) production is estimated at 5.6 MMT, up 3.7 percent from previous year on rising domestic demand due to population growth and demographic shifts.

Indian dairy production is considered a low input/low output system mostly constituted by small and marginal farmers and landless laborers owning less than five cows or water buffaloes. Indian dairy industry estimates around 70 million small scale dairy farms. Medium sized dairy farms from 50 to 200 cattle are increasing in some of the major dairy states such as Punjab, Gujarat, Maharashtra, and Andhra Pradesh. Over 90 percent of India's milk production is concentrated in 14 out of 29 total states (the top five states are Uttar Pradesh, Rajasthan, Andhra Pradesh, Gujarat, and Punjab). More than 50 percent of the India's milk production originates from water buffalo milk. The water buffaloes are preferred by some farmers due to its higher fat content milk as milk prices are determined by fat and solids-not-fat (SNF) content. In addition, the water buffaloes can also be sold for slaughter, unlike cattle, the slaughter of which is banned in most Indian states.

According to industry estimates, the commercial value chain, including cooperative and private dairies, handles around 25 percent of total milk production. This proportion of milk is further processed and marketed as packaged fluid milk and other value added dairy products. Dairy farmers sell around 60 percent of milk production to the commercial value chain and unorganized dairies while retaining 40 percent for household consumption. The cooperatives and private processors purchase milk from the farmers through their milk collection centers established close to the dairy farms at village level. The Government of India (GOI) estimates demand for milk to increase to 200 MMT by the year 2021-22, requiring a 20 percent increase in milk production. In order to augment the milk production to fulfill rising domestic demand, GOI has implemented the National Dairy Plan (NDP) through the National

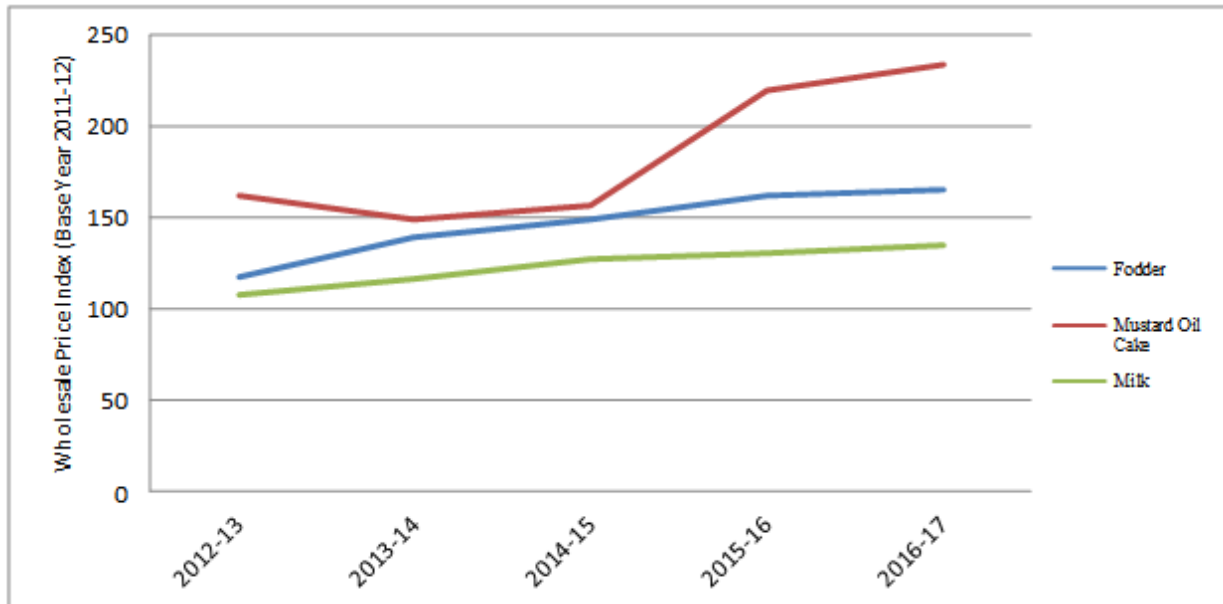
Dairy Development Board (NDDB) which focuses on breed/genetic improvement, artificial insemination, fodder development and expansion of milk procurement systems at the village level. Phase I of the NDP with total outlay of around \$350 million is under implementation from Indian Fiscal Year (IFY) 2011-12 to 2018-19. One program target is the increase in artificial insemination usage from the current level of 25 percent to 35 percent by the end of NDP phase I. In order to achieve this target, India requires increased annual production of semen doses of various breeds from the current level of 67 million doses to 100 million doses. NDP also focuses on *ration balancing program* under which extension advisory services are provided to the farmers for feeding balanced and nutritious feed to the dairy cows. Local advisors provide farmers feed and nutrition advice through the use of simple feed formulation software. The program aims to help farmers reduce the cost of feed, which accounts for 70 percent of the cost of milk production, by optimizing, the efficiency of available feedstuffs.

Low genetic potential, lack of nutritional feeds and inadequate veterinary services are some of the key factors affecting the productivity of animals. As per Government of India (GOI) statistics for the fiscal year 2014-15, the average milk yield of indigenous cattle, cross-bred cattle and water buffaloes is 2.5, 7.2 and 5.2 Kg per day respectively which is significantly less than 22 and 28 kg per day milk yield in U.K. and United States, respectively. The availability of feed and fodder is another major challenge to improve milk yield. According to industry estimates, by 2020 India may face significant deficits of dry fodder, green fodder and concentrates to the extent of 11, 35 and 45 percent against estimated demand of 468, 213 and 81 million metric tons, respectively. Currently only four percent of the cropping area is under fodder cultivation. The area under fodder cultivation may not increase substantially due to competing use of agricultural land for food and other cash crops. The use of compound cattle feed is limited, 8-10 million metric tons against the total feed requirement of around 80 million metric tons.

Prices

The dairy cooperatives and private milk processors review their milk procurement prices periodically based on supply-demand situation and other factors such as increases in feed and input costs. The farm gate prices offered by government supported state level dairy cooperatives are the benchmark prices which are generally followed by the private dairies. Reportedly, a few state governments also provide financial subsidies to dairy cooperatives so that they can offer remunerative milk prices to the farmers. The input costs in terms of fodder and oil cake prices (Mustard oil cake) from fiscal year 2012-13 to 2016-17, increased at a compound annual growth rate of 9 and 10 percent respectively while milk prices increased by only 6 percent limiting the farmer's profits (Figure 1). The average farm gate prices for milk in September 2017 reportedly ranged between INR 40 to 48 per liter (\$0.61 to \$0.73 per liter) for water buffalo milk (six percent fat and nine percent SNF), and INR 28 to 35 per liter (\$0.43 to \$0.53 per liter) for cow milk (four percent fat and eight-and-a-half percent SNF).

Figure 1. India: Rising Feed Costs and Milk Prices (Fiscal Year-April-March)



Source: Ministry of Commerce and Industry, Government of India

Production Policies and Programs

GOI's Department of Animal Husbandry, Dairying and Fisheries (DAHDF) and various state governments implement programs for breed improvement, dairy development, feed and fodder resources development, and animal disease control. DAHDF support states to implement a national control program for diseases such as Foot-and-Mouth Disease and Brucellosis. DAHDF also monitor animal diseases across the country through a web based national disease reporting system. DAHDF's National Program for Bovine Breeding and Dairy Development (NPBBDD), support activities such as breeding services, creation of infrastructure for quality milk production, procurement, processing, and marketing, providing inputs to dairy farmers, and farm management training. DAHDF also focuses on development and conservation of indigenous breeds such as *Tharparkar*, *Gir*, *Red Sindhi*, *Rathi*, *Kankrej* and *Sahiwal* to increase their genetic potential and milk productivity. DAHDF also supports state governments to provide subsidy to the milk producers for the insurance of dairy animals. Similarly, NDDDB has developed an Information Network for Animal Productivity and Health (INAPH), an information technology application to collect data on breeding, nutrition and health services. The animals registered in the network are also ear tagged with a unique digit number. In November 2016, GOI introduced a new scheme entitled 'National Mission on Bovine Productivity' with a financial allocation of around \$126 million to be spent over a period of three years for the genetic improvement of cattle and water buffalo population through delivery of breeding inputs to the dairy farms.

Consumption:

CY 2018 fluid milk consumption is projected at 67.7 MMT, up four percent in comparison to previous year on population growth and rising incomes. India's large vegetarian consumer population depends on milk and dairy products as a major source of protein. According to industry sources, milk demand is growing by six to seven million metric tons annually. CY 2018 NFDM and butter consumption is forecast to increase to 600,000 MT and 5.6 MMT respectively on population growth and demographic

shifts. Besides fluid milk consumption, the consumption of value added dairy products is also growing due to higher incomes, urbanization and demographic changes. The demand for *ghee* (clarified butter) and butter continues to remain robust. Reportedly, *ghee* is the most consumed value added dairy product. The demand for fermented dairy products such as yoghurt, yoghurt drinks (Butter Milk), cheese, and ice-cream is also growing substantially, particularly amongst urban middle and high end consumer segments (see processing section). For more details on changing consumption patterns, please see [IN4089](#).

Processing

India's processed dairy segment is growing due to increased demand for packaged fluid milk and diversified dairy products. According to NDDDB, the total installed processing capacity of the dairy cooperative sector is approximately 43 million liters per day while the total registered processing capacity of private dairy sector is 73 million liters per day. According to industry estimates around 70 percent of the processed milk is sold as fluid milk with the remaining used in manufacture of value added products. The packaged milk in India is mostly marketed as pasteurized milk in various variants depending on the fat content. Available variants in the market include: *full cream milk* (6 percent fat and 9.0 percent solid not fat (snf)), *standardized milk* (4.5 percent fat and 8.5 percent snf), *toned milk* (3.0 percent fat and 8.5 percent snf), *double toned milk* (1.5 percent fat and 9 percent snf) and *skim milk* (not more than 0.5 percent fat and 8.7 percent snf). Most of the private and cooperatives dairies do not have separate collection system for cow and water buffalo milk; therefore the packaged milk is mostly a mix of cow and water buffalo milk. However, there are a few dairy processors which also market exclusive cow milk. With rising health conscientious consumers, the demand for packaged milk is increasing due to concerns about food safety and quality. Similarly, the demand for ultra-high temperature (UHT) milk sold in aseptic packaging is rising owing to its long shelf life and perceived high quality. The UHT milk is particularly in demand for defense forces deployed in remote locations as well as in milk deficient regions of the northeastern states. Consumption of value added dairy products are experiencing significant annual growth rates of around 15-20 percent due to rising disposable income, urbanization, dual income households and other demographic shifts. This is true for products such as dairy whitener, butter, *ghee* (clarified butter), *paneer* (cottage cheese), flavored milk, ice cream, cheese, yogurt, butter milk, and ethnic sweets. Please see [IN5125](#) for more information on the growing cheese market.

The collection of milk from predominantly small-sized dairy farms in India is a huge challenge for dairy processing industry as it requires large investment in procurement and logistics infrastructure. The procurement of milk from small and scattered farms also poses challenges in maintaining the quality of milk. Food safety remains a major challenge as large part of India's total milk production is handled and marketed by small vendors in the unorganized sector who have limited training and resources for the efficient handling of milk. To address the food safety issues and improve the quality of milk in the supply chain, GOI is implementing a program on quality and clean milk production. The program provides financial assistance to states to improve milk quality and food safety at the farm and village level. The program includes activities such as training of farmers, installation of bulk milk coolers, strengthening of laboratory testing capabilities and monitoring data collected from milk collection centers. GOI's Ministry of Food Processing Industries also provides subsidies to the private sector and dairy cooperatives to build cold chain infrastructure. GOI also recently created a 'Dairy Processing and

Infrastructure Development Fund' with an outlay of \$1.7 billion to be utilized during the period IFY 2017-18 to 2028-29. The fund will provide financial assistance as loans to dairy cooperatives for building an efficient milk procurement system such as chilling infrastructure, installation of electronic milk adulteration testing equipment and other dairy processing systems.

Trade:

Exports

India's exports are minimal due to high domestic consumption and uncompetitive global prices. India's CY 2018 NFDM exports are forecast to increase marginally to 15,000 metric tons mainly due to uncompetitive export prices. CY 2016 NFDM and butter exports are revised to reflect customs data. CY 2018 butter exports are forecast flat at 10,000 MT on expectations of moderate demand. India's dairy exports mainly include NFDM, fats and oils derived from milk, cheese, lactose products, casein, butter, and ice-cream to countries such as Bangladesh, Pakistan, Nepal, Afghanistan, Bhutan, United Arab Emirates, United States and Singapore. In CY 2016, India's dairy exports were valued at \$172 million, up five percent in comparison to previous year. From CY 2011 to CY 2016, India's dairy exports value increased at a compound annual growth rate of 10.1 percent.

Imports

India's dairy imports are insignificant. The major dairy product imports include milk powder, fats and oils, casein, butter, whey, cheese and lactose. The imports of milk powder and butter are irregular and depend on the domestic supply situation. India's imports in CY 2016 were valued at \$110 million, 5.3 percent less than the previous year. However, imports in terms of volume increased by 26 percent to 58,595 metric tons in CY 2016. India's veterinary health certificate requirements currently restrict dairy imports from the United States.

Policy:

Trade Policy

India's Food Safety and Standards Authority of India (FSSAI) regulate milk and dairy products under the [Food Safety and Standards Regulations](#) (FSSR), 2011. The FSSR is applicable equally to both domestic and imported foods. Please see, [IN1174](#) , [IN4123](#) and [IN4089](#) for more information on import procedures, food safety requirements, and other policies. The import of milk and dairy products into India requires a sanitary import permit from GOI's Department of Animal Husbandry, Dairying, and Fisheries (DAHDF) and a veterinary certificate from the exporting country's veterinary authority. India's import certification requirements for milk and dairy products are available on DAHDF's website (<http://dahd.nic.in/dahd/default.aspx>). India applies tariff rate quotas (TRQ) for imports of NFDM; imports above the TRQ are levied tariffs of 60 percent. Table 1, at the end of this report, provides tariff structure details.

India recently revised its guidelines for import/export of bovine germplasm (revised April 2016) which are reportedly less restrictive. However, the import requires multiple approvals at the state and federal level which restricts trade significantly (For more details see [revised guidelines](#) for import/export of bovine germplasm). GOI recently published veterinary health certificates for live bovine, bovine semen, and embryo imports. For more details see DAHDF's website (<http://dahd.nic.in/dahd/trade.aspx>).

India has further extended the ban on Chinese milk and dairy products until June 23, 2018 or until further notice, whichever is earlier. The notification also prohibits chocolates and chocolate products, candies, confectionary, and food preparations made with fluid milk or dairy solids as an ingredient.

Table 1. India: Tariff Structure for Various Dairy Products, 2017

HS CODE	ITEM DESCRIPTION	BASIC	IGST	TOTAL DUTY with 3 % EDUCATION CESS	IMPORT POLICY
04011000 - 04015000	Milk and cream, not concentrated nor containing added sugar or other sweetening matter	30	0/5	30.9/37.445	Free San P
04021010	Milk and cream, concentrated or containing added sugar or other sweetening matter	60	5	68.00	Free San P
04021020 - 04021090	Milk and cream, concentrated or containing added sugar or other sweetening matter	60	5	68.00	Free San P
04022100	Milk and cream, not containing added sugar or other sweetening matter	60	5	69.89	Free San P
040229	Other: whole milk, milk for babies, other	30	5	37.445	Free San P
04029110	Condensed milk	30	18	54.462	Free San P
04029190	Other	30	5	37.445	Free San P
040299	Other: whole milk, condensed milk, other	30	5/18	37.445/54.462	Free San P
0403	Buttermilk, curdled milk and cream, yogurt, kephir & other fermented or acidified milk & cream, whether or not concentrated or containing added sugar or other sweetening matter or flavored or containing added fruits, nuts or coco	30	0/5	30.9/37.445	Free San P
0404	Whey, whether or not concentrated or containing added sugar or other sweetening matter; products consisting of natural milk constituents, whether or not containing added sugar or other sweetening matter, not elsewhere specified or include	30	5	37.445	Free San P

04051000	Butter	30	12	46.608	Free San P
04052000	Dairy spreads	40	12	58.144	Free San P
04059010-04059020	Butter Oil and Ghee	30	12	46.608	Free San P
04059090	Other	40	12	58.144	Free San P
04061000	Fresh (unripened or uncured) cheese, including whey cheese & curd	30	12	46.608	Free San P
04062000	Grated or powdered cheese of all kinds	30	12	46.608	Free San P
04063000	Processed cheese not grated or powdered	30	12	46.608	Free San P
04064000	Blue-veined cheese and other cheese containing veins produced by <i>Penicilliumroqueforti</i>	30	12	46.608	Free San P
04069000	Other cheese	30	0/5/12	30.9/37.445/46.608	Free San P
170211	Lactose and lactose syrup containing by weight 99 percent or more lactose, expressed as anhydrous lactose, calculated on the dry matter	25	18	48.385	Free
21050000	Ice cream and other edible ice, whether or not containing cocoa	30	18	54.462	Free
3501	Casein, Caseinates and other casein derivatives; casein glues	20	18	42.308	Free

Source: GOI Notified Harmonized Tariff Schedule (<http://www.cbec.gov.in/>)

Production, Supply and Demand Data Statistics:

Dairy, Butter Market Begin Year	2016		2017		2018	
	Apr 2016		Apr 2017		Apr 2018	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
India						
Beginning Stocks	8	8	9	9	0	9
Production	5200	5200	5400	5400	0	5600
Other Imports	6	6	10	10	0	10
Total Imports	6	6	10	10	0	10
Total Supply	5214	5214	5419	5419	0	5619
Other Exports	9	9	10	10	0	10
Total Exports	9	9	10	10	0	10
Domestic Consumption	5196	5196	5400	5400	0	5600
Total Use	5205	5205	5410	5410	0	5610
Ending Stocks	9	9	9	9	0	9

Total Distribution	5214	5214	5419	5419	0	5619
(1000 MT)						

Table 3. India: Commodity, Dairy, Milk, Fluid, PSD						
Dairy, Milk, Fluid Market Begin Year	2016		2017		2018	
	Apr 2016		Apr 2017		Apr 2018	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
India						
Cows In Milk	54500	54500	56500	56500	0	58500
Cows Milk Production	68000	68000	72000	72000	0	76000
Other Milk Production	86000	86000	88000	88000	0	91000
Total Production	154000	154000	160000	160000	0	167000
Other Imports	0	0	0	0	0	0
Total Imports	0	0	0	0	0	0
Total Supply	154000	154000	160000	160000	0	167000
Other Exports	0	0	0	0	0	0
Total Exports	0	0	0	0	0	0
Fluid Use Dom. Consum.	62750	62750	65200	65200	0	66800
Factory Use Consum.	91250	91250	94800	94800	0	100200
Feed Use Dom. Consum.	0	0	0	0	0	0
Total Dom. Consumption	154000	154000	160000	160000	0	167000
Total Distribution	154000	154000	160000	160000	0	167000
(1000 HEAD) ,(1000 MT)						

Table 4. India: Commodity, Dairy, Milk, Nonfat Dry, PSD			
Dairy, Milk, Nonfat	2016	2017	2018

Dry Market Begin Year						
	Jan 2016		Jan 2017		Jan 2018	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
India						
Beginning Stocks	55	55	45	45	0	30
Production	540	540	570	570	0	600
Other Imports	0	0	0	0	0	0
Total Imports	0	0	0	0	0	0
Total Supply	595	595	615	615	0	630
Other Exports	19	20	10	10	0	15
Total Exports	19	20	10	10	0	15
Human Dom. Consumption	531	530	575	575	0	600
Other Use, Losses	0	0	0	0	0	0
Total Dom. Consumption	531	530	575	575	0	600
Total Use	550	550	585	585	0	615
Ending Stocks	45	45	30	30	0	15
Total Distribution	595	595	615	615	0	630
(1000 MT)						