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## India

### Dairy and Products

#### Annual

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#### Report Highlights:

**Despite reduced fodder availability stemming from drought conditions in the major milk producing western states of India, strong private investment in dairy facilities is expected to support increased milk production, forecast at 81 million tons in 2001 and estimated at 79 million tons in 2000. In the absence of export subsidies, India will likely emerge as a regular supplier of dairy products to nearby markets.**

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Includes PSD changes: Yes  
Includes Trade Matrix: Yes  
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## SECTION I - SITUATION AND OUTLOOK

### Production

Despite reduced fodder availability stemming from drought conditions in the major milk producing western states of India, strong private investment in dairy facilities is expected to support increased milk production, forecast at 81 million tons in 2001 and estimated at 79 million tons in 2000. Under the Milk and Milk Products Order (MMPO) of 1992, the total processing capacity registered through March 1999 stood at 58.6 million liters per day. A rising number of smaller dairy processing facilities are being established to meet the growing demand for milk in urban areas.

Increased dairy processing capacity has led to stronger demand and higher farm gate prices for raw milk, encouraging dairy farmers to expand milk production and improve their feeding and maintenance practices. However, taxes levied by some states on the procurement and marketing of fluid milk have served to impede growth of the organized sector and stifled development of the infrastructure. Government financial institutions vested with the responsibility of infrastructure development have begun channeling investment toward milk procurement and transportation infrastructure in rural areas.

Dairying in India is traditionally a backyard or roadside venture. However, strong private sector investment supported by government financial institutions has encouraged increasing capitalization. These newly established facilities are generally located in and around urban areas. Supported by a fat-based milk pricing system, the share of buffalo milk in total milk production continues to increase and is estimated at 54 percent in 2000. The average price for the fluid milk received by producers in March 2000, was rs. 11.50 - 13.75/liter (\$261 - 313/mt) for buffalo milk (7% fat, 9% SNF) and rs. 7.50 - 11.75/liter (\$170 -267/mt) for cow's milk (4% fat, 8.5% SNF).

### Production Developments

Selective breeding of dairy animals rather than cross-breeding with the exogenous breeds has become the norm in government sponsored dairy herd improvement programs. Despite its poor success rate, Artificial Insemination remains the most preferred technique in the government's efforts in dairy herd improvement. Due to the high cost of embryo transfer technology, usage is limited to research labs for experimental purposes only. The government funds a number of animal husbandry research and development activities through the Agricultural universities. Funding for these programs totaled rs. 2.8 billion (\$62 million) in 1998/99 (April/March).

Improved profitability and increasing commercialization of the dairy sector have led to increased use of compound feeds estimated at six million tons in 1999, compared with 5.5 million tons in 1998. The growth occurred due to a decline in the price of protein meals on low export demand and a decline in fodder supplies due to drought like conditions in the major western states of India.

## Consumption

An estimated one fifth of total milk production is consumed at the producer-household level with the balance marketed through village-level vendors, dairy cooperatives or private dairies. Roughly, 50 percent of total production is procured by the cooperatives and the private entrepreneurs for further processing or for marketing as fluid milk. The share of milk purchased by cooperatives and private dairies has increased at the expense of local vendors, with the volume purchased by private dairies growing fastest. While, 60 percent of the milk procured by the cooperatives is marketed as fluid milk, private dairies market only 45 percent in fluid form with balance being processed into value-added dairy products such as ghee (melted, clarified butter), milk powder, milk-based sweet meats, cheese and ice-cream. Ghee is used by most households as a premium cooking medium.

Continued expansion in milk processing capacity by the private sector, coupled with the need to sustain fluid milk supplies during the lean season and comparatively higher 2000 prices have led to an increase in total milk powder production, estimated at 275,000 tons in 2000 (compared to 240,000 tons last year). Production of NFDM which is mixed with butter oil to produce reconstituted milk is estimated at 150,000 tons during 2000, accounting for 55 percent of the total milk powder production. Production of NFDM is forecast to reach 165,000 tons in 2001, assuming strong milk prices, a widening of the supply-demand gap during the lean season and continued private investment in milk processing and fluid milk marketing in the urban areas. Butter/ghee production increased from 1.75 million tons in 1999, to an estimated 1.95 million tons in MY 2000, with production of ghee (melted butter) estimated at 1.55 million tons and butter at 400,000 tons (including about 45,000 tons of white butter for table purposes). An estimated 75 percent of total ghee/butter production is produced in the unorganized sector. Butter/ghee production is forecast to increase by 15 percent to 2.25 million tons in 2001. Use of white butter for table purposes is limited to urban areas, supported by consumers greater exposure to the western food habits and lifestyle.

Per-capita milk consumption in 1999 is estimated at 220 grams/day, which is still below the WHO recommended level of 283 grams/day. Rapid growth in private sector dairy processing facilities, and increasing average household income are expected to lead to an increase in the demand for value-added products. Approximately 55 percent of total fluid milk production is used in the production of value-added dairy products. Higher average incomes, changing urban lifestyles and food habits coupled with geometric growth in the urban population have contributed to the growing demand for western-style milk products such as table butter, processed cheese and ice cream. Capacities for production of western-style cheese have increased in recent years to meet growing demand from fast food chains and the household sector. In keeping with a reputed study which identified value-added dairy products as a high-growth market, a number of national and multinational food processing majors have added value-added dairy products to their product manufacturing/marketing portfolio. Consumption of ice cream is also growing at 15 percent, estimated at about 70 million liters during 1999. During 1999, several international manufacturers entered the Indian ice-cream market with their imported brands containing exotic flavors to serve niche consumers.

## Trade

Trade in fluid milk is negligible due to lack of storage, transportation infrastructure and demand (except for some informal cross-border trade). With the exception of butter oil and NFDM (which have been "freely" traded for a number of years), imports of most other milk products have until recently been effectively banned. However, effective April 1, 2001 India will remove all quantitative restrictions on imports. Though the licensing requirement will be removed, imports will remain subject to relatively high tariff (e.g., a cumulative tariff of 67 percent in the case of most branded dairy products). Effective June 12, 2000 a Tariff Rate Quota (TRQ) was established for SMP imports under which imports of up to 10,000 tons are allowed at a 15 percent tariff, with quantities above that level attracting a 60 percent duty. The Agricultural and Processed Food Export Development Authority has been vested with the responsibility of administering the TRQ.

Low world prices coupled with reduced stocks and increased demand led to record NFDM imports during 1999 estimated at 17,750 metric tons. Imports of NFDM are forecast to decline drastically to 3,000 tons during 2000 in response to higher world prices and lower domestic prices. Imports of butter/butter oil during 1999 increased to 4,311 tons compared with 3,881 tons during 1998. Imports were basically from two countries namely New Zealand and Australia due to their proximity and price advantage. Imports during 1999 are expected to be marginally higher estimated at 5,000 tons.

Export quotas for milk powder were abolished in 1998. Despite lower world prices and strong domestic demand, exports of NFDM increased slightly to 2,150 tons in 1999 compared with 1,354 tons exported during 1998. Taking into account current high world prices for milk powder, the Industry expects the 2000 milk powder exports to cross 10,000 tons. Industry sources maintain that in the absence of export subsidies, India will likely emerge as a regular supplier of milk products to nearby markets.

Indian exports of ghee/butter are mostly confined to packaged, branded products to cater to the ethnic Indian populations residing overseas. Exports of butter increased marginally during 1999 and are estimated at 526 tons compared with 476 tons exported during 1998, despite the abolition of quota system due to low world prices for butter. However, trade sources indicate that most Indian butter exports are branded, packaged and standardized catering to the Indians and the south Asian community living in the middle east and the east Asian countries making Indian butter exports, price insensitive.

## Market Opportunities

Imports of NFDM and butter oil for use in the production of reconstituted milk are expected to continue during the April-August lean production season. This is a long-term market opportunity for US exporters provided their prices are competitive vis-a-vis Oceania and EU prices. Demand for processed cheese and high quality dairy products by luxury hotels and fast food chains is also expected to grow in concert with rising average income. Growth in sales of imported ice cream offers a niche market and the one US company already exporting ice cream to India reports better

growth in sales due to the wider offering of flavors. Imports of flavored US yoghurt is a possibility to cater to the embryonic but growing market demand of quality conscious consumers.

## SECTION II - STATISTICAL TABLES

## Commodity, Dairy Milk Fluid, PSD

|                                |                    |         |       |         |     |         |                  |
|--------------------------------|--------------------|---------|-------|---------|-----|---------|------------------|
| PSD Table                      |                    |         |       |         |     |         |                  |
| Country:                       | India              |         |       |         |     |         |                  |
| Commodity:                     | Dairy, Milk, Fluid |         |       |         |     |         |                  |
|                                |                    | 1999    |       | 2000    |     | 2001    | UOM              |
|                                | Old                | New     | Old   | New     | Old | New     |                  |
| Calendar Year Begin            |                    | 01/1999 |       | 01/2000 |     | 01/2001 | (MONTH/<br>YEAR) |
| Cows In Milk                   | 35500              | 35500   | 35800 | 35750   | 0   | 35900   | (1000<br>HEAD)   |
| Cows Milk Production           | 36000              | 36000   | 36500 | 36250   | 0   | 36400   | (1000 MT)        |
| Other Milk Production          | 41000              | 41000   | 42750 | 43000   | 0   | 44850   | (1000 MT)        |
| TOTAL Production               | 77000              | 77000   | 79250 | 79250   | 0   | 81250   | (1000 MT)        |
| Intra EC Imports               | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| Other Imports                  | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| TOTAL Imports                  | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| TOTAL SUPPLY                   | 77000              | 77000   | 79250 | 79250   | 0   | 81250   | (1000 MT)        |
| Intra EC Exports               | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| Other Exports                  | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| TOTAL Exports                  | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| Fluid Use Dom. Consum.         | 33000              | 33000   | 33500 | 33000   | 0   | 33250   | (1000 MT)        |
| Factory Use Consum.            | 44000              | 44000   | 45750 | 46250   | 0   | 48000   | (1000 MT)        |
| Feed Use Dom. Consum.          | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| TOTAL Dom. Consumption         | 77000              | 77000   | 79250 | 79250   | 0   | 81250   | (1000 MT)        |
| TOTAL DISTRIBUTION             | 77000              | 77000   | 79250 | 79250   | 0   | 81250   | (1000 MT)        |
| Calendar Yr. Imp. from<br>U.S. | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |
| Calendar Yr. Exp. to U.S.      | 0                  | 0       | 0     | 0       | 0   | 0       | (1000 MT)        |

**Commodity, Dairy Milk Nonfat Dry, PSD**

| PSD Table                   |                         |         |     |         |     |         |              |
|-----------------------------|-------------------------|---------|-----|---------|-----|---------|--------------|
| Country:                    | India                   |         |     |         |     |         |              |
| Commodity:                  | Dairy, Milk, Nonfat Dry |         |     |         |     |         |              |
|                             |                         | 1999    |     | 2000    |     | 2001    | UOM          |
|                             | Old                     | New     | Old | New     | Old | New     |              |
| Calendar Year Begin         |                         | 01/1999 |     | 01/2000 |     | 01/2001 | (MONTH/YEAR) |
| Beginning Stocks            | 26                      | 26      | 30  | 42      | 30  | 33      | (1000 MT)    |
| Production                  | 130                     | 130     | 145 | 150     | 0   | 165     | (1000 MT)    |
| Intra EC Imports            | 0                       | 0       | 0   | 0       | 0   | 0       | (1000 MT)    |
| Other Imports               | 1                       | 18      | 2   | 3       | 0   | 2       | (1000 MT)    |
| TOTAL Imports               | 1                       | 18      | 2   | 3       | 0   | 2       | (1000 MT)    |
| TOTAL SUPPLY                | 157                     | 174     | 177 | 195     | 30  | 200     | (1000 MT)    |
| Intra EC Exports            | 0                       | 0       | 0   | 0       | 0   | 0       | (1000 MT)    |
| Other Exports               | 2                       | 2       | 2   | 12      | 0   | 8       | (1000 MT)    |
| TOTAL Exports               | 2                       | 2       | 2   | 12      | 0   | 8       | (1000 MT)    |
| Human Dom. Consumption      | 125                     | 130     | 145 | 150     | 0   | 165     | (1000 MT)    |
| Other Use, Losses           | 0                       | 0       | 0   | 0       | 0   | 0       | (1000 MT)    |
| Total Dom. Consumption      | 125                     | 130     | 145 | 150     | 0   | 165     | (1000 MT)    |
| TOTAL Use                   | 127                     | 132     | 147 | 162     | 0   | 173     | (1000 MT)    |
| Ending Stocks               | 30                      | 42      | 30  | 33      | 0   | 27      | (1000 MT)    |
| TOTAL DISTRIBUTION          | 157                     | 174     | 177 | 195     | 0   | 200     | (1000 MT)    |
| Calendar Yr. Imp. from U.S. | 0                       | 0       | 0   | 0       | 0   | 0       | (1000 MT)    |
| Calendar Yr. Exp. to U.S.   | 0                       | 0       | 0   | 0       | 0   | 0       | (1000 MT)    |

**Commodity, Butter, PSD**

|                             |               |         |      |         |     |         |              |
|-----------------------------|---------------|---------|------|---------|-----|---------|--------------|
| PSD Table                   |               |         |      |         |     |         |              |
| Country:                    | India         |         |      |         |     |         |              |
| Commodity:                  | Dairy, Butter |         |      |         |     |         |              |
|                             |               | 1999    |      | 2000    |     | 2001    | UOM          |
|                             | Old           | New     | Old  | New     | Old | New     |              |
| Calendar Year Begin         |               | 01/1999 |      | 01/2000 |     | 01/2001 | (MONTH/YEAR) |
| Beginning Stocks            | 0             | 0       | 0    | 0       | 0   | 0       | (1000 MT)    |
| Production                  | 1750          | 1750    | 1950 | 1950    | 0   | 2250    | (1000 MT)    |
| Intra EC Imports            | 0             | 0       | 0    | 0       | 0   | 0       | (1000 MT)    |
| Other Imports               | 5             | 4       | 8    | 5       | 0   | 5       | (1000 MT)    |
| TOTAL Imports               | 5             | 4       | 8    | 5       | 0   | 5       | (1000 MT)    |
| TOTAL SUPPLY                | 1755          | 1754    | 1958 | 1955    | 0   | 2255    | (1000 MT)    |
| Intra EC Exports            | 0             | 0       | 0    | 0       | 0   | 0       | (1000 MT)    |
| Other Exports               | 1             | 1       | 2    | 2       | 0   | 4       | (1000 MT)    |
| TOTAL Exports               | 1             | 1       | 2    | 2       | 0   | 4       | (1000 MT)    |
| Domestic Consumption        | 1754          | 1753    | 1956 | 1953    | 0   | 2251    | (1000 MT)    |
| TOTAL Use                   | 1755          | 1754    | 1958 | 1955    | 0   | 2255    | (1000 MT)    |
| Ending Stocks               | 0             | 0       | 0    | 0       | 0   | 0       | (1000 MT)    |
| TOTAL DISTRIBUTION          | 1755          | 1754    | 1958 | 1955    | 0   | 2255    | (1000 MT)    |
| Calendar Yr. Imp. from U.S. | 1             | 1       | 2    | 2       | 0   | 4       | (1000 MT)    |
| Calendar Yr. Exp. to U.S.   | 0             | 0       | 0    | 0       | 0   | 0       | (1000 MT)    |

**Commodity, Dairy Milk Nonfat Dry, Export Matrix**

|                     |         |        |      |
|---------------------|---------|--------|------|
| Export Trade Matrix |         |        |      |
| Country:            |         | Units: | Tons |
| Commodity:          |         |        |      |
| Time period:        | Jan-Dec |        |      |
| Exports for         | 1999    |        | 2000 |
| U.S.                |         | U.S.   | NA   |
| Others              |         | Others |      |
| UAE                 | 960     |        | NA   |
| Srilanka            | 520     |        | NA   |
| Philippines         | 315     |        | NA   |
| Bangladesh          | 225     |        | NA   |
| Korea RP            | 65      |        | NA   |
| Afghanistan         | 35      |        | NA   |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
| Total for Others    | 2120    |        | 0    |
| Others not listed   | 30      |        |      |
| Grand Total         | 2150    |        | 0    |

**Commodity, Butter, Export Matrix**

|                     |         |        |      |
|---------------------|---------|--------|------|
| Export Trade Matrix |         |        |      |
| Country:            |         | Units: | Tons |
| Commodity:          |         |        |      |
| Time period:        | Jan-Dec |        |      |
| Exports for         | 1999    |        | 2000 |
| U.S.                | 120     | U.S.   | NA   |
| Others              |         | Others |      |
| UAE                 | 178     |        | NA   |
| Malaysia            | 78      |        | NA   |
| Singapore           | 51      |        | NA   |
| Philippines         | 35      |        | NA   |
| Nepal               | 25      |        | NA   |
| Oman                | 21      |        | NA   |
| Nepal               | 12      |        | NA   |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
| Total for Others    | 400     |        | 0    |
| Others not listed   | 6       |        |      |
| Grand Total         | 526     |        | 0    |

**Commodity, Dairy Milk Nonfat Dry, Import Matrix**

|                     |         |        |      |
|---------------------|---------|--------|------|
| Import Trade Matrix |         |        |      |
| Country:            |         | Units: | Tons |
| Commodity:          |         |        |      |
| Time period:        | JAN-DEC |        |      |
| Imports for         | 1999    |        | 2000 |
| U.S.                | 1       | U.S.   | NA   |
| Others              |         | Others |      |
| Australia           | 5750    |        | NA   |
| Canada              | 4150    |        | NA   |
| New Zealand         | 2600    |        | NA   |
| Belgium             | 2250    |        | NA   |
| Netherlands         | 1150    |        | NA   |
| Denmark             | 600     |        | NA   |
| Ireland             | 75      |        | NA   |
| Germany             | 50      |        | NA   |
|                     |         |        |      |
|                     |         |        |      |
| Total for Others    | 16625   |        | 0    |
| Others not listed   | 1400    |        |      |
| Grand Total         | 18026   |        | 0    |

**Commodity, Butter, Import Matrix**

|                     |         |        |      |
|---------------------|---------|--------|------|
| Import Trade Matrix |         |        |      |
| Country:            |         | Units: | Tons |
| Commodity:          |         |        |      |
| Time period:        | Jan-Dec |        |      |
| Imports for         | 1999    |        | 2000 |
| U.S.                |         | U.S.   | NA   |
| Others              |         | Others |      |
| New Zealand         | 3949    |        | NA   |
| Australia           | 362     |        | NA   |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
|                     |         |        |      |
| Total for Others    | 4311    |        | 0    |
| Others not listed   |         |        |      |
| Grand Total         | 4311    |        | 0    |