

FUTURE TRENDS OF GROWING DEMAND FOR MILK AND DAIRY PRODUCTS AND MILK SUPPLY IN INDIA

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India is a major producer of raw milk (the ingredient for milk and dairy products) with a massive output worth \$26.9 billion in 2014. At 150 million tons (2016), India's milk consumption is the highest in the world and accounts for 26% of world consumption. It is mainly used in beverages, such as Chai drinks—a favorite with common Indian people—as well as in producing unique Indian dairy foods, such as ghee (butter oil), dahi (yogurt), and paneer (cottage cheese), which are commonly home-made.

In recent years, with the increasing premiumization and diversification of consumer needs, the uses of milk have been expanding from traditional dairy products to new products with high added value. It is expected that this trend will lead to further growth in milk consumption. This article will focus on the present situation and future trends of demand for milk and dairy products in India and the supply of milk as an ingredient for these products.

PRODUCTIVITY IMPROVEMENT A PRIORITY FOR THE DAIRY FARMING INDUSTRY

Behind the expansion of the Indian milk market to its current vast size lies population growth, as well as an increase in per capita consumption. Per capita milk consumption has been on a steep upward trend since around 1980 due to steady economic growth. In particular, rapid economic growth in the 2000s has caused this trend to accelerate. According to the latest statistics published by the United Nations Food and Agriculture Organization (FAO), per capita consumption has reached 85 kg, or 2.2 times the 1980 level.

While this figure is high when compared with those for other Asian nations, such as Japan (72 kg), China (33 kg) and Vietnam (16 kg), it is still only one-third of the per capita consumption in the United States, the EU, and Australia. This indicates that there is still room for further growth going forward. The Indian government has predicted that milk consumption in FY 2023 (April 2023-March 2024) will be 1.7 times higher than the FY 2015 total. Accordingly, there will be a need to increase milk supply to meet the growing demand. The Indian dairy farming sector plays a role in responding to the need, but it is facing a major productivity problem.

India is the world's largest raw-milk producer. The country has the largest number of cattle (300 million), including buffalo, and the largest number of dairy farming households (75 million) in the world. However, the majority of dairy farms are small in scale. There are not only small farms run by families who own small pieces of farmland and keep a few cows in their gardens (Photo 1), but also

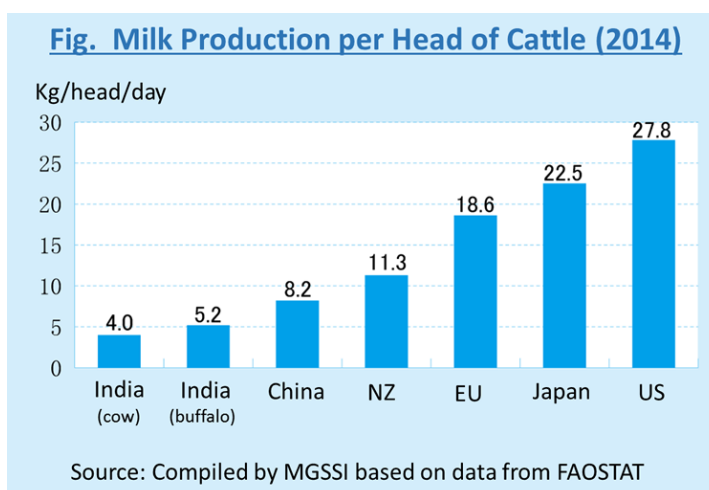


Photo 1:
At a farm visited by the author, four or five cows and in the farmer's garden. The farmer was making cottage cheese from the milk and supplying it to a neighborhood sweet shop.

more than a few dairy farmers who own no land. These small-scale dairy farmers rarely provide their cattle with high-quality feed supplied by feed manufacturers. Farmers with their own land generally feed their cattle small amounts of rice and food scraps on a subsistence basis. Landless farmers put their cattle “to pasture” in town, and the cattle eat organic garbage discarded at the roadside.

Poverty is the main reason for small-scale farmers to depend on no-cost feed. However, in the first place, many of them do not have the intention of spending money in order to increase their milk production. One factor behind this is that these farmers do not rely solely on milk income. Although the use of draft cattle is diminishing with the spread of tractors, cattle remain an important livelihood, including cow dung cakes, sun-dried on house walls for use as fuel, as well as cow urine, which can be sold for use in traditional Indian medicine.

These characteristics of Indian dairy farming are manifested in low productivity. An international comparison based on FAO statistics shows that milk production per head of cattle per day amounts to 27.8 kg in the United States and 22.5 kg in Japan (2014), compared with just 4.0 kg for a dairy cow and 5.2 kg for a buffalo in India (see graph on right). Statistics published independently by the Indian government also show that overall output is low at 4.6 kg (FY 2015). A more detailed breakdown reveals that indigenous cows produce 3.4 kg per head, and buffalo 5.8 kg. Even with highly productive exotic cows and crossbred cows, output is only 11.2 kg and 7.3 kg respectively.



To keep pace with future growth in demand, the industry will need to improve productivity. Productivity improvement measures in the Indian government’s National Action Plan for Dairy Development include the introduction of exotic cows, cross breeding, and the improvement of nutrition and hygiene. The plan aims to increase daily output per cow to 7.1 kg by FY 2023, equivalent to 1.5 times the FY 2015 level.

Since 2008, the grain major Cargill, which also engages in feed production business, has been building a supply structure for high-quality feed in conjunction with an education program for Indian dairy farmers. In September 2016 it opened a feed plant in the Indian state of Punjab. In response to such actions by the industry as well as Cargill, a new type of dairy farm management is spreading, in order to capture the opportunities brought by demand expansion. These new dairy farmers give priority to yields and are willing to spend money on production equipment and inputs, including feed. Modern dairy farmers are expected to make an important contribution to the supply of milk in India.

CAPACITY EXPANSION AND SAFETY IMPROVEMENT PURSUED BY THE MILK

DISTRIBUTION AND PROCESSING INDUSTRY

The priorities for milk distribution and processing are capacity expansion to meet demand growth, and the improvement of safety. There is a possibility that the private sector will lead efforts to modernize not only production but also downstream processes.

Around 50% of milk produced in India is consumed by the producers themselves, and the rest is distributed in the market. However, 61% of the distributed milk is handled by small-scale, non-organized operators, who can do little to increase their logistics and processing capacity. In addition, many of these small-scale operators do

not have refrigeration equipment, which causes food safety issues. One of the goals identified by the government in the Action Plan is to reduce the share of non-organized operators from 61% to 14% by FY 2023, while raising the percentage of milk procured by the organized sector.

Procurement channels in the organized sector include India's dairy cooperatives and private-sector companies. The dairy cooperatives are supported by the National Dairy Development Board (NDDB), which is a governmental organization established in 1965. There are 15.83 million farmers under the ambit of 170 thousand village level dairy cooperative societies, and fluid milk collected from them through 198 dairy cooperative milk unions throughout India is sold as a beverage, mainly through kiosks (Photo 2). Food manufacturing giant Nestlé is a major presence among the private-sector companies that procure milk.



Photo2:

Dairy cooperatives' milk is sold as a beverage in polypacks under the "Amul" and "Mother Dairy" brands. Although sold chilled, the milk needs to be boiled to drink.

Currently the dairy cooperative sector and private sector each procure about 19% of the total quantity distributed. The goal under the government's plan is to increase the dairy cooperatives' share to 33%, and that of private-sector companies to 50%. These goals reflect the expectation that private investment will lead to increases in refrigeration and processing capacity.

CONSUMPTION-DRIVEN GROWTH

As outlined above, small dairy farmers and non-organized distributors currently play central roles in the supply of milk. However, this structure is unlikely to keep pace with future demand expansion. Modern business entities, including new types of farmers and private-sector companies, are expected to become major players and see more business opportunities going forward. Accordingly, such opportunities will likely be extended to not only suppliers of animal nutrition, veterinary medicine, and hygienic, efficient livestock farming equipment, but also the industries of cold-chain facilities and logistics.

In addition, it is expected that rising incomes, especially in urban areas, as well as urbanization and an increase in double-income households will bring changes in lifestyles and preferences. Therefore, new initiatives are pursued on the supply side to capture business opportunities arising from qualitative changes in the demand for milk and dairy products.

Whyte Farms LLP operates a medium-scale dairy farm about 100 km south of Delhi. Although a recent start-up, the company has created a unique business model. Whyte Farms has adopted a highly automated and mechanized approach to dairy farming. They use their own fodder grown in an organic manner using the manure derived from its own cattle. The milking process is fully automated and the milk produced at the farm is pasteurized and packaged in PET bottles in its own facilities, and then delivered to the subscribers in a chilled state by the company itself.

Whyte Farms milk is nutritionally enriched with Omega 3 fatty acids, Vitamin A&D, organic Selenium and has high levels of beta Carotene. Whyte Farms claims that it supplies the freshest milk in India by delivering it within hours of milking whereas regular packaged milk may take days to reach the consumer due to a long milk collection chain process. While standard milk lasts for only a day even when refrigerated, Whyte Farms milk lasts for at least three days and will keep for as long as a week under a good refrigeration condition in winter due to a very low somatic cell count. In addition, the company has eliminated human intervention at all stages from feeding to packaging. Whyte farms milk is pasteurized and is very much safer to drink than other standard

milk in India. Like most international packaged milk, Whyte Farms milk is not required to be boiled and could be consumed directly. Moreover, it does not have the odor of the standard milk. Also, they are introducing glass bottle packaging soon for a more eco-friendly packaging.

Whyte Farms sells its milk at about double the price of the standard milk. Currently, there has been a sharp rise among its foreign customers such as embassies and other international working communities, especially from Korea and Japan, but the majority of buyers are Indians. This shows that although India as a whole is classed as a low-income country, there is already a customer base, consisting mainly of high-income people, who will pay premium prices for high-added-value products.

There are various other types of high-added-value dairy products, ranging from those offering high convenience and health benefits. Some examples are as follows: pre-packaged cheese and yogurt products that do not require cooking; baby foods; dairy whiteners; ultra-high temperature milk; ice cream; and probiotic dairy products. India's wealthy population has already reached 17 million and is expected to increase to 33 million by 2025. As consumers who are willing to pay a premium for high-added-value products can no longer be called "niche" customers, capturing their premiumized and diverse needs will lead to major business opportunities.

Column: No Increase in Meat Consumption in India Despite Economic Growth

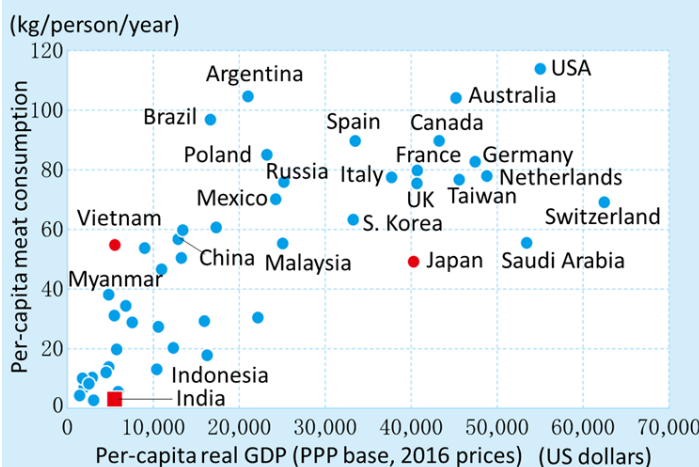
With its population of 1.3 billion, India is already a giant market for food. However, the growth of that market is following a different direction from markets in other countries.

In most countries, consumption of meat expands in line with income growth (see graph on right). Meat market growth has been especially notable in Asian emerging countries. In Vietnam, a country that has a similar income level to India, annual per capita meat consumption is at 55 kg, already higher than the level in Japan.

In contrast with these countries, India's per capita meat consumption is just 3 kg. One reason for this is the fact that the majority of Indians follow the Hindu religion, which forbids the consumption of beef. Another reason is India's high vegetarian population.

As India is experiencing rapid economic growth, milk consumption is rising while meat consumption is not growing. This trend needs to be seen as a key characteristic of the Indian food market.

Correlation bet. Income Level and Meat Consumption (2013)



Source: Compiled by MGSSI based on UN data (except Taiwan's GDP, which is based on IMF data)