India's Dairy Exports: Opportunities, Challenges and Strategies

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India is the largest milk producer as well as consumer in the world and its milk production is estimated to exceed the milk production of the entire European Union by 2018 and the gap is expected to widen. India also has the distinction to be the lowest cost milk producer in the world. Milk production and selling is crucial to livelihood of over 600 million people in rural India with a herd size of 1-3 milch animals unlike large scale dairy farms in Europe.

The establishment of multilateral trading system under the WTO, on one hand opened up opportunities in international trade by increased market access and worldwide reduction in import tariffs, both for production and exports but in practice, these are being used as potent tools especially by developed countries such as the US and the EU not only to obstruct entry of dairy and other agricultural products from developing countries but also distort the free and fair operation in the international markets.

The paper attempts to carry out an analysis of India's competitive edge in the global dairy production and its international trade, crucially examines the major challenges and strategies for promoting exports of dairy products from India.

Key word: Dairy, globalisation, WTO, Agreement on Agriculture, subsidies, export subsidies, nontariff barriers, international trade, domestic support, AMS, Technical Barriers to Trade, SPS, Tariff, exports, dairy trade, trade, milk trade, India, new trade order, dairy exports

Introduction

The globalization of dairy industry has led to paradigm shift of international dairy markets from being supply driven to demand driven. Thus, the international dairy market is getting increasingly responsive to market signals and changing consumer preferences, rather than merely by excess production and depressed world prices. Dairy sector has become among the highest gross value sectors in agriculture with higher prices and correspondingly higher value of milk production. The prospects of sustained high prices for dairy products is creating incentives for investment expansion and restructuring of local dairy industries. Milk production, international demand patterns and economic development in various parts of the world impact the world dairy trade.

The establishment of multilateral trading system under the WTO that came in existence on 1 January, 1995 led to a new trade order in the world. On one hand the WTO opened up opportunities in international trade by increased market access and worldwide reduction in import tariffs. Though WTO aims at eliminating non-tariff barriers which include quota restriction, direct subsidies both for production and exports, quality issues etc. but in practice, these are being used as potent tools especially by developed countries such as the US and the EU not only to obstruct entry of goods from developing countries but also distort the free and fair operation in the international markets¹.

The expected growth in production and consumption of dairy products in developing countries would further reduce the ratio of international dairy trade to global milk production² to 6% in the next decade. However, during the last decade, the international trade volumes grew at an average of 3% per annum and overtook dairy production that increased at about 2.4% per year during the period. This reveals the growing significance of international trade and its rapidly rising integration of global production patterns and markets.

 Joshi, Rakesh Mohan, International Business, Oxford University Press (2014), Eleventh Impression, New Delhi
2 OECD-FAO Agricultural Outlook 2013-2022



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2. Global milk production and India

World milk production³ is projected to increase at an average of 1.8% during the next 10 years compared to 2.3% average annual growth experienced in the past decade. The world milk production is projected to increase by 164 million tons, out of which 74% of additional milk production is expected to come from developing countries out of which India alone accounts for 29% of global gains. After years of double digit growth in milk production in China, the melamine crisis shattered the consumer confidence in domestically produced dairy products. The Chinese focus has shifted from increasing milk quantity to improving milk quality and the milk production is expected to grow at an average of 2% per annum compared with the previous decadal growth of 7% per annum.

The average growth in milk production in Developed countries is expected to be at the rate of 1% per annum in the next decade compared to 0.8% in the previous. This is due to the higher yield experienced in developed countries. Despite that, the milk production growth in developing countries is set to be at the rate of 2.5% per annum which is double the rate of 1% in developed countries. The share of developed countries in the global milk production is expected to fall below 50% by 2022.

Indian subcontinent is among the few regions in the world where consumption of milk and milk products is historically imbibed in its culture unlike China and several other countries in Asia and Africa where consumption of milk products is a recent phenomenon.

The livestock sector in India has been regarded as one of the most pro-poor sectors with considerable positive development translating into increased income and employment to millions of people across the country. Over the last four decades, while India has made considerable progress in industrial sector; the growth in agriculture sector has hovered around three percent. The contribution of agriculture to country's GDP⁴ has also declined steadily from 50 percent in 1947, the year of India's independence to 13.7% in 2013. On the

3 OECD-FAO Agricultural Outlook 2013-2022, p.208 4 Quarterly Review 2013-14 (April-June), Ministry of Finance, Department of Economic Affairs, pg.31 other hand, the contribution of the livestock sector to overall GDP remained at about five percent during the last three decades. The dairy and livestock sector contribute over 25 percent to the GDP of agriculture⁵. Within the livestock sector, dairying has emerged as an important source of income and employment. The sector has excellent forward and backward linkages, which promotes many industries and increases income of vulnerable groups in rural area especially for marginal and small farmers and contributes to a third of the gross income of rural households and nearly half for the landless.

The milk revolution in India reveals an exceptional success story as the milk production increased remarkably from 17 million tons in 1950-51 to an estimated 140 million tons in 2013-14 and emerged at the largest milk producer in the World far ahead of the second largest producer the US. Moreover, India's milk production⁶ is expected to grow to 176 million tons by 2022 and far exceed the total milk production of the entire European Union. This has been achieved through ingenious organisations of a large number of small milk producers spread across the rural areas of the country. The Operation Flood, one of the world's largest dairy development programmes, played a crucial role in achieving transformation of dairy industry in India. In addition to being the largest milk producer, India also has the distinction to be the lowest cost milk producer. More interestingly, there is a wide gap in the next highest producers: the US (89 million tons), China (43 million tons) and Pakistan (33 million tons).

This phenomenal growth in milk production has been due to demand side development on one hand and supply side promotions on the other. The per capita availability has also increased from 112 gram/day in 1970-71 to 297 gm/day in 2012-13 (Figure 2).

Despite India being the largest milk producer in the world, its yield continues to remain miserably low at 1.1 per ton per head during 2010-12. USA has the world's highest milk yield with 9.7 tonnes per head followed by European Union (6.6 tonnes per head) during the same period. The enormous





⁵ Bhasin, N. R., Indian Dairyman, pp.14-15, November, 2011 6 OECD-FAO Agricultural Outlook 2013-22

Figure 1: India: The largest milk producing country in the world would even take over the Entire European Union by 2022



World Milk Production

Source: OECD-FAO agricultural outlook 2013-22



Figure 2: Production and per capita availability of Milk in India

Source: Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Government of India



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Figure 3: Milk yield in India continues to remain miserably low

Source: OECD-FAO Agricultural Outlook 2013-22

gap in milk yields and reliance on other animals for milk purpose such as sheep, goats and camels which inherently have lower milk yields compared to milch cows is responsible, to a large extent for huge disparity between the share of milk production and inventories between developed and developing countries especially India.

Emerging international dairy trade scenario

International trade is often used to bridge the gap between the demand and supply. Figure 4 reveals that world dairy exports have increased from US \$27.61 billion in 2001 to US \$84.46 billion in 2013. The global economic crisis during the recent



Figure 4: World Dairy Exports

Source: Trade map.



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Figure 5: Composition of world dairy exports (2003)



years led to sluggishness of trade volumes to US \$52.4 in 2009. Consequent to the melamine crisis in 2008 in China, the demand for imported dairy products in China soared as domestically produced milk products were perceived as health hazards. Chinese demand has considerably boosted the international dairy trade especially for the whole milk powder.

Cheese and curd were highest traded products globally in 2013 (Figure 5-6) with 38% share of world exports followed by milk and cream concentrated or sweetened (29%), milk and cream not concentrated nor sweetened (11%), butter and other milk fats (10%), whey and natural milk products(7%) and buttermilk and yoghurt (6%).



Figure 6: Composition of world dairy exports (2013)

Source: Trade Map



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Figure 7: World's major dairy exporting countries (2003)

Source: Trade Map

Germany remains the largest exporter of dairy products with 13.3% of share in exports in 2013 slightly lower than 15% in 2003 (Fig. 7-8). The share of France has significantly declined from 12% in 2003 to 9% in 2013. The position of the

US that was under pressure during the last decade improved from 1.9% in 2003 to 6.1% in 2013. On the other hand, there has been a remarkable growth in share of other countries from 28% in 2003 to 30% in 2013.





Source: Trade Map



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Price trends in dairy industry

The prices of global dairy products increased to its peak in 2011 are expected to rise in nominal terms while are likely to remain flat in real terms, as indicated in Figure 9-14. High production costs are expected to moderate the price fall despite the fact that food prices are likely to decrease over the short run. World market prices are expected to be 10% higher for SMP and 30% higher for butter during the present decade ending 2022.

(in nominal terms) 9000 8000 WMP 7000 6000 5000 US SPer Ton SMP 4000 3000 2000 1000 0 2016 2013 2018 2019 2020 2021 2021 2022 2015 1991 1992 1993 566 800 99 966 366 900 00 66 8 00 8 8 103 103 201 201 103 SMP WMP

Figure 9: Trends in international WMP and SMP prices

Source: OECD-FAO Agricultural Outlook 2013-22



(in real terms)



Source: OECD-FAO Agricultural Outlook 2013-22



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Figure 11: Trends in international butter prices (in nominal terms)

Source. OECD-FAO agricultural outlook 2015-22





Source: OECD-FAO agricultural outlook 2013-22







Figure 13: Trends in international Cheese prices (in Nominal Terms)

Source: OECD-FAO agricultural outlook 2013-22





Source: OECD-FAO agricultural outlook 2013-22



The growing concern about health and nutrition is likely to bring opportunities as well as challenges to the dairy industry. The perceived benefits among the consumers of various bacteria strains has made Pro-biotic sector among the fastest growing dairy business. Though the health claims of functional dairy products are being revisited in several countries, it provides tremendous marketing opportunities for high value added dairy products.

The trends of tightening Food Law Legislations and the debate over the issue is also a matter of concern. For instance, an EU proposal asked for an indication on a package as to whether a product has ever been frozen, in order to improve transparency which also includes dairy products such as butter and cheese. Denmark implemented a tax on saturated fat in October, 2011 which also concerns certain dairy products, as a measure to reduce the incidence of cardiovascular diseases and obesity. To develop effective strategic responses to newly evolving regulations would remain the key challenge in international marketing of dairy products.

Emerging trends in India's international dairy trade

India remains the largest milk producing country in the world contributing about 15 percent of the total world milk production. But, due to its large and rapidly growing domestic demand especially in view of increase in population and rising income levels, it has become the net dairy importer in the years 2010-12. India's share in global milk exports is 0.68% in 2013 whereas its share in the milk imports is 0.04%. This trade pattern is attributed to increase in production of bulk of milk produced in liquid form by the dairy producer.

India's dairy exports exhibited highly fluctuating trend mainly due to fluctuations in dairy production, domestic demand and prices in international markets. Traditionally, India has been a net importer of dairy products till Operation Flood began showing results. The trend for imports continued till 1993, when, for the first time, exports exceeded its imports. However, between 1993 and 1999 imports and exports kept edging each other out, and by 2000, India became a net exporter of dairy products. Its exports continued to increase almost consistently from a meagre of US \$ 3.45 million in 1996 to US \$ 270 in 2008 but declined subsequently to US \$ 88.95 million in 2009. Also, with increasing income levels in urban centres, the demand for processed dairy products has gone up leaving little surpluses for exports. On the other hand the rapidly growing domestic demand led to increase in India's dairy imports from a meagre of US \$ 1.48 in 1996 to US \$ 177.4 million in 2011. As a result, India became a net importer of milk products (Fig. 15) during 2010-2011. However, India's dairy exports grew



Figure 15: India's dairy trade



much rapidly during the subsequent years whereas its imports declined. In 2013, India's dairy exports grew to US \$575 million compared to its imports of US \$ 34.6 million and India re-emerged as the net exporter of dairy products. dairy exports in 2013, its share has increased considerably from 70% in 2003 primarily due to decrease in export of butter and other fats and oil derived from milk which accounted for 7.45% of India's dairy exports (Fig. 16-17) besides



Figure16: Composition of India's dairy exports (in Value Terms) (2003)

Source: Trade map.

Though milk and cream concentrated or sweetened accounted for the highest share of 88.65% in India's

cheese and curd (2.49%), milk and cream not concentrated nor sweetened (1%), buttermilk and yoghurt (1%).

Figure17: Composition of India's dairy exports (in Value Terms) (2013)



Asian and African countries remain the major destinations for India's dairy exports. In the Asian region, neighbouring countries in South Asia & the Middle East are the main buyers. Bangladesh and Egypt are the largest importers of Indian dairy products accounting for 17% and 14% share (Fig. 18-19) respectively in 2013. Despite several efforts, India has not been able to penetrate into the markets of Europe and North America while the markets in South America also remain untapped. Unless India enhances exports of its value added products with higher shelf-life, it would be difficult to have any significant increase in its dairy exports.



Figure 18: International markets for India's dairy exports (2003)

Source: Trade Map

Figure 19: International markets for India's dairy exports (2013)



Source: Trade map.





Sourcing of Dairy imports by India has witnessed a significant shift from Australia (18%) in 2003 to in 2013 (Fig. 20-21). The share of European suppliers has more or less remained unchanged, as shown in figure 20 and 21.

Major challenges in promoting exports of dairy products from India

Despite phenomenal growth in milk production to become the largest milk producing country in the world, dairy exports from India face a number of challenges that may be summarised as follows:



Figure 20: Countries for sourcing India's Dairy Imports (2003)

\sSource: Trade map





Source: Trade map.



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- Despite being the largest milk producer in terms of absolute quantity, India's average milk yield per cattle remains much lower compared to developed and even many other developing countries.
- The small size of milch-animal holdings in India makes it difficult to adopt mechanised system of milking, cooling and chilledstorage which hampers the efforts to improve quality at the farm production stage.
- India being a huge milk consumer owing not only to its large population size but also due to the largest vegetarian population in the world whose only source of animal based essential nutrient is milk, much low surplus is left for exports unlike other major dairy exporting countries.
- In many developed counties India faces a perception of being a country with common prevalence of foot and mouth disease (FMD) despite the sporadic incidences of the disease in some part of the country. India needs to make concerted efforts both to eradicate FMD and increase its perception to be free of any the disease in milch-animals.
- Cow milk is the only popular milk in most developed countries and buffalo milk is unheard of, whereas India produces substantiation quantity of buffalo milk. As foreign buyers are not always sure of suitability of buffalo milk for human consumption, they often insist upon dairy products manufactured from cow milk.

Emergence of new trade order and challenges to India's dairy exports

Creating fairer markets in the agricultural sector including dairying has been the major contribution of the WTO. Although, the earlier rules of GATT did apply to agriculture trade but it contained several loopholes. Some developed countries protected their high-cost production of temperate zone agricultural products (e.g. dairy, meat, wheat products and other grains,) by imposing quantitative restrictions and variable levies on imports in addition to the high import tariffs.⁷ This high level of protection often resulted in enhanced domestic production which because of high prices, could be disposed off in the international markets only under subsidy. Such subsidised sales depressed international market prices of such agro products including dairy products. It also resulted into taking away of legitimated market share of competitive producers such as India in the dairy and agro sector.

As a result, the international trade in agriculture became highly "distorted" especially with the use of production and export subsidies which would not normally have been allowed for industrial products. Trade is termed as "distorted" if prices are higher or lower than normal, and if quantities produced, bought, and sold are also higher or lower than normal levels that usually exist in a competitive market.

The opening up of economy under the WTO's multilateral trade regime increasingly exposed the Indian dairy sector to the international markets, which in turn are distorted by domestic support, prohibitive tariffs and export subsides in developed countries and offers a number of challenges both in production and exports of dairy products from developing countries like India.

Until 1991, the Indian dairy industry was highly regulated and protected through stringent licensing provisions and quantitative restrictions (QRs). India embarked upon liberal policy framework, which got reinforced, in 1994, with the signing of Uruguay Round Agreement on Agriculture (AoA).

Heavy domestic support: adds to the woes of developing countries' dairy producers

National policies that support domestic prices or subsidised production often encourage overproduction. This squeezes out imports or lead to export subsidies and dumping at much lower prices in international markets to dispose off the excess production. Under the agreement of agriculture (AoA), domestic policies that have a direct effect on production and trade were required to be cut





⁷ Joshi, Rakesh Mohan, International Marketing, Oxford University Press (2014), Second Edition, New Delhi

back. The domestic support in the agriculture sector is categorised under Green, Amber and Blue boxes as discussed below.

Green Box

All subsidies that have little or at most minimal, trade distorting effects and do not have the "effect of providing price support to producers", are exempt from reduction commitments. The subsidies under the Green Box include:

- Government expenditure on agricultural research, pest control, inspection and grading of particular products, marketing and promotion services.
- Financial participation by government in income insurance and income safety-net programmes.
- Payments for natural disaster.
- Structural adjustment assistance provided through:
- i. Producer retirement programmes designed to facilitate the retirement of persons engaged in marketable agricultural production.
- ii. Resource retirement programmes designed to remove land and other resources, including livestock, from agricultural production
- iii. Investment aids designed to assist the financial or physical restructuring of a producer's operations.
- Payments under environmental programmes.
- Payments under regional assistance programmes.

Amber Box

This category of domestic support refers to the Amber colour of traffic lights, which means "slows down". The agreement establishes a ceiling on the total domestic support that government may provide to domestic producers.

Blue Box

Certain categories of direct payment to farmers are also permitted where farmers are required to limit production. This also includes government assistance programmes to encourage agricultural and rural development in developing countries, and other support on a small scale when compared with the total value of the product or products supported (5 percent or less in the case of developed countries and 10 percent or less for developing countries).

The member countries quantified the support provided per year for agriculture sector, termed as "total aggregate measurement of support" (total AMS) in the base years of 1986-88. Developed countries agreed to reduce total AMS by 20 percent over six years starting in 1995 while the developing countries agreed to make 30 percent cut over ten years. Least developed countries were not required to make any cuts in AMS. The AMS is calculated on a product-by-product basis by using the difference between the average external reference price for a product and its applied administered price multiplied by the quantity of production. To arrive at AMS, non-product-specific domestic subsidies are added to the total subsidies calculated on a product-by-product basis.

The level of domestic support continues to be very high in form of input subsidies such as feed-grains, irrigation, interest on loan and insurance. However, 89 percent of domestic support is concentrated in three regions/countries at EU (44%), USA (24%) and Japan (21%). At the best, policies in many developed countries have only been cosmetically altered by shifting the support from Amber to Green and Blue box measures. These heavy subsidies distort free market competition and make the prices of dairy products lower than the real cost. By putting the domestic support in green box category, developed countries are not providing level playing field for developing countries.

Market access: obstructing international dairy trade

Market access in developed countries is hampered by their maintaining high tariffs on products of interest to developing countries. In addition to elimination of all non-tariff measures by *tariffication*, all countries have bound all the tariffs applicable to agricultural products. In most cases, developing countries have given binding at





rates that are higher than their current applied or reduced rates. There is a huge disparity in tariffs on dairy products in India and other developed countries. The tariffs on dairy products are almost three times higher in most developed countries than in India (Table 1).

Table	e 1 - Cro	ss co	ountry	comparis	son of
tariff	structure	e for	dairy	product	(2013)

Country	Average Bound (%)	Average Applied (%)
Canada	246.9	228.5
Japan	116.9	89.6
EU	54.7	52.9
India	65	33.5
US	19.8	19.9

Source: WTO tariff profile, WTO, 2013

Canada and Japan apply very high rate of tariffs at an average of 228.5 percent and 89.6 percent respectively. The average applied tariff in EU and US is 52.9 percent and 19.9 percent respectively. India's applied tariff rate at 33.5 percent is much lower than its average bound tariff of 65 percent unlike most other developed countries.

On one hand, this tariff peaks continue to block developing countries' exports to developed world whereas on the other, due to reduction in tariffs by developing countries, the domestic markets would have been flooded with cheap & highly subsidized products, which would only lead to large scale resentment. SPS also continues to be a major barrier for developing countries in diversifying their exports in horticulture, meat and dairy products.

Export subsidies by developed countries distorting international dairy trade

The agreement on agriculture prohibits export subsidies on agricultural products unless the subsidies are specified in a member's lists of commitments. Where they are listed, the agreement requires WTO members to cut both the amount of money they spend on export subsidies and the quantities of exports that receive subsidies. Taking averages for 1986-90 as the base level, developed countries agreed to cut the value of export subsidies by 36 percent over the six years starting in 1995 (24 percent over 10 years for developing countries). Developed countries also agreed to reduce the quantities of subsidised exports by 21 percent over the six years (14 percent over 10 years for developing countries). Least developed countries were not required to make any cuts. During the six year implementation period, developing countries were allowed under certain conditions to use subsidies to reduce the costs of exports marketing and transporting.

The developed countries continue to provide high export subsidy to dispose off their large agricultural surplus in other countries of the world. EU gives subsidy of more than US\$ 550 per tonne on SMP (Skimmed Milk Powder), US\$ 850 per tonne on Full Cream Milk Powder and US\$ 12, 00 per tonne on Butter and Butter Oil. While export subsidies on dairy products have been eliminated by the EU except small subsidies for storing butter under the Private Storage Aid (PSA) scheme, but that too is high.

Standards and safety measures

Under article 20 of the General Agreement on Tariffs and Trade (GATT) allows governments to act on trade in order to protect human, animal or plant life or health, provided no discrimination is made and it is not used as disguised protectionism. In addition there are two specific agreements dealing with food safety and animal and plant health and safely with product standards.

The Agreement on Sanitary and Phytosanitary (SPS) Measures sets out the basic rules on food safety and plant health standards. This allows the countries to set their own standards which have to be based on the science and should be applied only to the extent necessary to protect human, animal or plant life or health. These regulations should not arbitrarily or unjustifiably discriminate between countries were identical or similar conditions prevail. Member countries are encouraged to use international standards such as FAO/WHO Codex Alimentarius Commission for food, International Animal Health Organisation for animal health etc. However, the agreement allows countries to set higher standards with consistency.





The agreement includes provisions for control, inspection and approval procedures. The member governments must provide advance notice of new or changed sanitary and phytosanitary regulations and establish a national enquiry point to provide information.

The Agreement on Technical Barriers to Trade (TBT) tries to ensure that regulations, standards, testing and certification procedures do no create unnecessary obstacles to trade. This agreement complements with Agreement on Sanitary and Phytosanitary (SPS) measures. All WTO member countries are required to national enquiry points to make this information available. In spite of above challenges, India can exploit better market opportunities for its dairy exports in near future while maintaining its commitment under WTO.

- India can maintain its dairy tariff rates at WTO final bound levels, which is far higher than what actually India has been applying.
- The export subsidies provision would not affect the Indian dairy because Indian dairy is out of this range.
- India can also expand its domestic support to dairy under green and special & differential (S&D) treatment boxes of WTO since they are exempted from reduction commitments.

Strategy to Promote Dairy Exports from India

As physical infrastructure and logistics remains a key concern for exports of dairy products from India, an integrated approach for overall enhancement of export logistics in terms of creating cold chain facilities for transportation and storage needs to be adopted. Besides, India needs to focus upon exports of value added products with increased shelf-life and improved packaging to compete in international markets. Concerted efforts to market especially in building global brands and establishing international marketing channels are also called for.

India needs to address effectively the emerging challenges under the new trade order affecting exports of dairy products. Moreover, as import tariffs have considerably declined and quota restrictions fast disappearing in international markets, there is a strong fear that high income countries are increasingly making use of quality standards as a formidable barrier to dairy exports from India and other developing countries. The research institutions and scientists in India need to keep a close vigil on such mandatory quality specifications in international markets so as to overcome the newly emerging international trade barriers.





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