

# Roadmap and Strategies to Promote Export of Dairy Products for the Organized Dairy Sector

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# EXECUTIVE SUMMARY

## Introduction

Global milk output in 2018 was estimated at 843 million tonnes, an increase of 2.2 percent from 2017, driven by production expansions in India, Turkey, the European Union, Pakistan, the United States of America and Argentina. Out of this, India alone accounted for 186 million tonnes making it a behemoth in the global competitive landscape with 22% of the global output. Nevertheless, India's milk production is challenged by several factors such as lower milk productivity, water scarcity, lack of formalisation of the market structure, insufficient feed and fodder resources, lack of farming techniques, small herd size and inadequate veterinary services. This, coupled with a plethora of other factors prevent India from being a major player in the international dairy market. In fact, India's share in global dairy exports stands at less than 1%, compared to major exporters such as Germany (12.4%), New Zealand (12%), Netherlands (11.6%), France (8.3%) and USA (5.3%). It is estimated that world dairy market demand will witness a two-digit growth in the coming decade with India and China being the primary growth engines. This further escalates the need for exploring additional markets for Indian dairy products in sync with growing international demand as well as the projected decline in output levels of many developed countries. At present, Indian dairy industry is restricted to meeting the requirements of domestic market along with some conventional markets mostly in SAARC and Middle Eastern Region.

In light of the pressing challenges as well as the immense potential the present study endeavoured to:

- Analyse India's domestic production and market challenges for dairy products from stakeholder's perspective and suggesting a future roadmap
- Analyse India's International Trade in Dairy Products
- Examine the challenges in international markets faced by Indian Dairy Products and suggesting future export promotion strategies

## Findings

The study in chapter one tried to examine the dairy market scenario in a macro level so as to portray a broader picture of Indian dairy sector as well as the global dairy market. An attempt to outline the integration of Indian dairy industry with global markets with a quick glance of current opportunities and challenges faced by the Indian dairy sector.

In chapter two, an attempt was made to analyse the extend of India's integration with the global markets in terms of Product wise trade statistics, Unit Price Evolution and its comparison with other global players. One significant insight is that Indian Dairy products are lacking price competency in international markets.

Another visible trend is that Indian export usually takes some time to adapt to the price fluctuations in the international market which hinders the competency of the products.

Chapter three revealed that, most of the state sector schemes are compatible with WTO's norms on export competition and subsidies. Notably, some export promotion schemes implemented by the central government are found non-compliant to the international standards as per WTO's dispute settlement mechanism. Additionally, India has crossed the per-capita GNI threshold of \$1,000 making it ineligible to offer subsidies on exports. Moreover, the Nairobi package announced in 2015 compels all the developing countries to drop the export subsidies by 2018 with some relaxations on subsidies covering marketing and transport costs for agriculture exports until the end of 2023. This compels the policy makers in our country to revamp some of the current policies for the dairy industry in order to ensure global compliance. It is worth mentioning that most centrally sponsored schemes for dairy have a positive impact on the state wise production levels. It is also found that some states have large amount of underutilised funds that are originally disbursed under numerous dairy schemes. Some long vision policies such as National Dairy Plan Phase -1 has helped to improve the competency of Indian industry at primary level notably in areas such as Rearing and Breeding, Fodder Development, Procurement, Improved herd management, basic cold chain and many more. Even though these accomplishments are satisfactory from the context of domestic market needs, it is still far from fulfilling the market requirements of the developed countries especially in Pricing, Traceability and Quality aspects.

India's Free Trade Agreements and their impact on dairy sector was scrutinised in chapter four. India's exports of dairy products to FTA countries have not outperformed overall export growth or export to rest of the world. Besides that, only a small number of the FTAs India has signed, offers tariff concession to dairy exports from India. Export to the FTA countries is also negligible as compared to the overall import of the dairy products. To conclude India's international trade in dairy products has not augmented in line with the exponential production growth that the country has attained over the years.

Non- Tariff Measures are a serious hurdle to India's foreign trade development especially when it comes to exporting dairy commodities. These NTMs of varying intensities restricts market access for Indian dairy products especially when exporting to developed countries. An attempt was made in chapter five to outline Potential Markets based on Trade Potential and Prevalence of NTMs. The most favourable markets are selected on the basis of low NTM and high trade potential. However, countries with high NTM and high trade potential are also analysed systematically. Some developing countries with high trade potential such as China, Sri-Lanka, and Indonesia also brings large list of NTMs to comply with

when Indian dairy products are being exported to them. Non-Compliance of Indian dairy products in many potential markets due to NTMs are complimentary to the fundamental structure of Indian dairy sector which is entirely different from other milk producing countries in the western world. India has about 100 million farmers dependent on dairy compared to merely 10,000 in New Zealand and 6,300 in Australia. This coupled with other issues such as fragmented herd sizes, inefficient farm management practices, lack of training, loose control on veterinary drug administration etc, makes the issue of addressing NTM a tedious task for the country.

*Table 1: Impact of FTA on Indian Dairy Exports*

| FTA Name                            | Adjusted R Squared | Significance    | Analysis  |
|-------------------------------------|--------------------|-----------------|---|
| Indian-ASEAN CECA                   | 0.138              | Not Significant | No Change in Export after this FTA got implemented                      |
| India-Korea CEPA                    | 0.157              | Not Significant | No Change in Export after this FTA got implemented                      |
| SAFTA                               | 0.3                | Not Significant | No Change in Export after this FTA got implemented                      |
| Revised Treaty of Trade India-Nepal | 0.55               | Not significant | The export has increased but no visible change after FTA implementation |
| India- MERCOSUR                     | 0.36               | Not significant | No change in Export after this FTA got implemented                      |

*Table 2: Impact of FTA on Indian Dairy Imports*

| FTA Name                            | Adjusted R Squared | Significance    | Analysis  |
|-------------------------------------|--------------------|-----------------|---|
| Indian-ASEAN CECA                   | 0.918              | Not Significant | No Change in Import after this FTA got implemented            |
| India-Korea CEPA                    | 0.965              | Significant     | Change in Indian Dairy Import after the Implementation of FTA |
| SAFTA                               | 0.88               | Not Significant | No Change in Export after this FTA got implemented            |
| Revised Treaty of Trade India-Nepal | 0.243              | Not Significant | The export has increased but the change is not due to the FTA |
| India- MERCOSUR                     | 0.92               | Significant     | Change in Indian Dairy Import after the Implementation of FTA |

Chapter six tried to provide a better picture of the prevalence of product specific NTMs across Existing and Potential Markets. In depth classification and explanation of all NTMs is provided to comprehend the amount of gravity posed by such barriers to dairy trade. Additionally, Incidence Analysis of Non-Tariff Measures is also conducted in order to understand the occurrence of NTMs across various regions. The NTM barriers which India is already meeting in the existing market is compared with the NTM barriers of the potential markets. A list of unique NTM barriers to be met in the potential markets is the unique contribution of this chapter.

Primary survey conducted across the country as well as internationally with Dairy Manufacturers, Manufacturer Exporters, Manufacturer Importers, Export Agencies and Policy makers is meticulously incorporated in chapter number seven. Domestic Survey Consisted of total 200 dairy units and five Foreign High commissions spread across 20 states/UTs. International Survey Features over 200 respondents across 38 countries out of which the survey team has visited 13 countries for personal interviews. Domestic responses revealed certain fundamental issues faced by the dairy exporting companies such as Incompetent Prices, Lack of Traceability to cattle level, Prevalence of FMD and other diseases, Inability to meet quality standards of overseas markets, various SPS and TBT measures in foreign markets, Delays in transportation, Inability to provide continuous supply throughout the year, Lack of Innovation, Poor marketing practices, In-proper incentive policies, Un-even domestic milk prices, Un-availability of skilled labour or dairy professionals etc. It is also found that Indian dairy exporters are either exporting large variety of products to concentrated markets or few products to a large number of markets. However, the best strategy would be grouping the potential products and export them to selected markets.

Internationally, the respondents were of the opinion of prevalence of trust deficit between Indian exporters and overseas buyers. This is more pronounced in the areas such as quality of products, continuous supply of products and last but not least the un-attractive prices.

Chapter eight outlines the characteristics of Existing and Potential markets. Various components such as demography, Tariff and Non-Tariff Factors, Consumer Buying behaviour, Modes of Payments, Major Banks, Major competitors, credit rating etc. is included in order to provide guidance to exporters in their future marketing endeavours to these markets.

Finally, chapter nine provides road maps and strategies to promote export of dairy products for the organized dairy sector in India which is the central component of the report. Product and market specific market penetration strategy for Indian dairy products stretched into three stages of expansion has been

identified and provided along with focus areas for improvement so as to make the dairy products globally competitive. In order to do so, two product categories have been identified on the basis of India's dairy product positioning in the world market and trade value. These categories are named "Potential Thrust Products" and "Retain Existing Products" as shown in the figure given below.

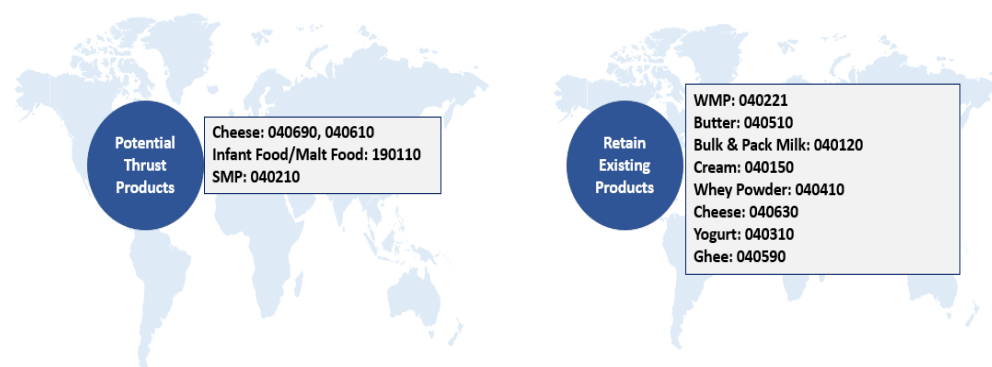


Figure 1: Bifurcation of Identified Products for the Global Markets

The aim of the Indian Dairy Sector for 2030 must be to increase India's world dairy exports from 0.38% to 5%. If the world dairy market grows at the rate of 1-1.5 % by 2030 and India aims 5% of the world market, the export value stands at \$5.5 billion. Year wise projections are given in Table 3.

Table 3: Targeted 10-year growth strategy for Indian Dairy Exports: Overall Numbers (000'US Dollar)

| Product                    | Market Details        | Metric | Targeted 10-Year Export Growth Strategy for India's Dairy Export: Overall numbers (000'US Dollar) |                 |                 |                |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|----------------------------|-----------------------|--------|---|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                            |                       |        | 2018  | 2019            | 2020            | 2021           | 2022            | 2023            | 2024            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            |
| Overall World Dairy Market | Current Size          |        | 9,74,95,095   | \$ 10,01,28,484 | \$ 10,17,23,686 | \$ 9,92,68,919 | \$ 9,98,06,554  | \$ 10,14,82,249 | \$ 10,28,66,802 | \$ 10,52,59,046 | \$ 10,71,54,031 | \$ 10,82,69,269 | \$ 10,81,82,334 | \$ 10,93,57,759 | \$ 11,05,34,732 |
|                            | Projected Growth Rate |        | 5.04%   | 2.70%           | 1.59%           | -2.41%         | 0.54%           | 1.68%           | 1.36%           | 2.33%           | 1.80%           | 1.04%           | -0.08%          | 1.09%           | 1.08%           |
|                            | Market Size Projected |        | \$ 10,01,28,484   | \$ 10,17,23,686 | \$ 9,92,68,919  | \$ 9,98,06,554 | \$ 10,14,82,249 | \$ 10,28,66,802 | \$ 10,52,59,046 | \$ 10,71,54,031 | \$ 10,82,69,269 | \$ 10,81,82,334 | \$ 10,93,57,759 | \$ 11,05,34,732 |                 |
| Overall India Dairy Export | Export %              | 0.37%  | 0.53%   | 0.70%           | 0.86%           | 1.02%          | 1.18%           | 1.34%           | 1.50%           | 2.20%           | 2.90%           | 3.60%           | 4.30%           | 5.00%           |                 |
|                            | Target Export         |        | \$ 5,35,263   | \$ 7,07,468     | \$ 8,50,123     | \$ 10,15,320   | \$ 11,95,656    | \$ 13,77,485    | \$ 15,78,886    | \$ 23,57,389    | \$ 31,39,809    | \$ 38,94,564    | \$ 47,02,384    | \$ 55,26,737    |                 |

### Roadmap and Strategies to promote Dairy Products Exports for the Organized Dairy Sector

In order to achieve the above ambition of \$5.5 billion market by 2030, it is essential that a time bound systematic approach be followed that will help the Indian dairy sector overcome the domestic challenges inhibiting international opportunities and rise to become not just the world's largest milk producer but known for becoming the world's largest internationally renowned quality milk producer.

Market Expansion should be done in 3 different phases ranging from 2021-2030. Phase I (2021-2023) should be the initiation phase for venturing out to additional global markets. This stage is characterised as capturing the markets with high trade potential coupled with low trade barriers. By Phase II stage (2024-2027), the industry should be capable of marching further ahead to capture the markets with high trade

score and moderate trade barriers. Remaining potential markets like China and Russia with high trade score and high trade barriers should be capitalised during the Phase III (2028-2030) period. The details are given in table 4.

*Table 4: Product Export Roadmap (2021-2030)*

| Action  | Product Position-India | Product Categories             | Phase 1: Initiation Phase   |      |      | Phase 2: Transition   |      |      |      | Phase 3: Expansion                           |      |      |      |
|---|------------------------|--------------------------------|---|------|------|---|------|------|------|--|------|------|------|
|   |                        |                                | 2020  | 2021 | 2022 | 2023  | 2024 | 2025 | 2026 | 2027   | 2028 | 2029 | 2030 |
| Focus on Quality Improvement Gradually                      | Comeptitive            | Ghee (040590)                  | Existing Market   |      |      | Phase 1 Markets+Poland+Mexico                                       |      |      |      | Phase 2 Markets                              |      |      |      |
|   | Emerging               | WMP(040221)                    | Existing Market+Bhutan+Mauritius                                  |      |      | Phase 1 Market + Kuwait + Egypt + Russia                            |      |      |      | Phase 2 Markets+Indonesia+Saudi Arabia+China |      |      |      |
|   |                        | Butter (040510)                | Existing Market+Cambodia+South Korea+Macau                        |      |      | Phase 1 Markets+Japan   |      |      |      | Phase 2 Markets+Russia+China                 |      |      |      |
|   |                        | Bulk & Pack Milk (040120)      | Existing Markets+Vietnam  |      |      | Phase 1 Markets+Oman  |      |      |      | Phase 2 Markets                              |      |      |      |
|   |                        | Cheese (040630)                | Existing Markets+Jordan   |      |      | Phase 1 Markets + Indonesia + Lebanon + Phillipines                 |      |      |      | Phase 2 Markets+China                        |      |      |      |
| Focus on Price Immeadiately and Quality Gradually           | Emerging               | Cream(040150)                  | Existing Markets+Mauritius+Maldives                               |      |      | Phase 1 Markets + Russia + Malaysia + Bahrain + Vietnam + Indonesia |      |      |      | Phase 2 Markets+China                        |      |      |      |
|   |                        | Whey Powder (040410)           | Existing Markets  |      |      | Phase 1 Markets+Egypt+Saudi Arabia+Russia                           |      |      |      | Phase 2 Markets+China                        |      |      |      |
|   |                        | Yoghurt (040310)               | Existing Markets+Malaysia   |      |      | Phase 1 Markets + Oman + Russia + Phillipines                       |      |      |      | Phase 2 Markets+China                        |      |      |      |
| Increase Quality Gradually & Capitalize the Price Advantage | Weak                   | Cheese (040690)                | Existing Markets  |      |      | Phase 1 Markets + Russia + Israel + Vietnam                         |      |      |      | Phase 2 Markets                              |      |      |      |
|   |                        | Infant Food/Malt food (190110) | Existing Markets  |      |      | Phase 1 Markets + Algeria+Kazhakstan                                |      |      |      | Phase 2 Markets                              |      |      |      |
| Follow World Price Trend & Improve Quality                  | Weak                   | Cheese (040610)                | Existing Markets+Phillipines+Macau                                |      |      | Phase 1 Market+Indonesia  |      |      |      | Phase 2 Market+China                         |      |      |      |
|   |                        | SMP (040210)                   | Existing Markets  |      |      | Phase 1 Markets   |      |      |      | Phase 2 Markets+China                        |      |      |      |
| Continue Exports  | Emerging + Weak        | All Other Products             | Continue Export and focus less on high fat content dairy products |      |      |   |      |      |      |  |      |      |      |

In addition to the product export roadmap, export value projections have been done to reach the target of \$5.5 billion by 2030 (5% of Global market). This year wise projections can be used as a guide to plan dairy exports. Adequate capacity building and inventory planning based on the given projections would give an edge to the monitoring and implementing agency to keep a track of the export performance. The projections are given in table 5.

It is expected that the Indian dairy sector will face tremendous challenges during the process of foraying into the global markets. This tedious task can be done in a better way if the fundamentals of the entire industry is transformed in a pragmatic and future oriented manner. The following are some of the general suggestions:

- An export orientation could be in the form of developing specific dairy export zones to meet barriers related to large herd size. These specific zones may be developed as exclusive regional

zones for exports of dairy products as well as to overcome NTM barriers related to traceability, and quality management. Dairy Export Zones (DEZ) can be envisioned as an alternative model to expand dairy exports without affecting the welfare of small scale dairy farmers.

- Encouraging players in the organized dairy sector to enhance their commitment and contribution in the input services such as infrastructure, animal health and farmer welfare. This endeavour will lead to increase the share of organized dairy sector.
- Focus on strengthening the indigenous breed to help significantly enhance productivity.
- Integration and upgradation of technology across the value chain stages of dairy production for performance optimization.
- Feeding is as important as breeding therefore promoting nutritional feed and fodder availability to the dairy farmers is recommended. This will help improve animal health, productivity and quality of milk.
- Improving availability and access to credit finance for small dairy farmers to improve infrastructure and farm management practices.
- Integration and upgradation of technology across the value chain stages of dairy production is recommended.

Apart from these general suggestions, major recommendations are proposed based on the following components

*Strict Quality Adherence across the value chain:* The issues related to quality of milk (microbiological, chemical, adulteration & chemical contaminants) animal health, adopting & harmonization with international standards, traceability, animal welfare, mixing of buffalo milk with cow milk etc. are some of the major concern which requires immediate attention.

*Innovative Approach in International Marketing:* Generic campaign to position India as world's largest milk production country with most ancient traditional knowledge and use of milk is the need of the hour. New Zealand & Australia has created its own brand in this space while India or Indian companies have failed to mark their position in the consumer market. Also, Indigenous milk products (Paneer, Lassi, Dahi and Indian Sweets) are to be marketed with the help of special international campaigns. This is clearly reflected in the dairy product categories where India is price competitive but its reach in terms of quantity and number of countries is low. On the other hand, New Zealand and Australia despite having a high unit price are exporting more quantity than India.

*Ensuring Price Competency across Product categories and Destination Markets:* To ensure the price competency in the existing and potential markets, adequate actions are to be taken by the monitoring and controlling agency. Measures like dynamic price tracking is required along with close integration of



domestic prices with the international market prices. A price range for each product category and market has been suggested in the report.

To tackle the global price fluctuation and the inconsistency in setting export prices, a comprehensive system in the form of a business and marketing intelligence unit (BMIU) may be developed. The role of BMIU would be to capture and analyse data related to:

- Prevailing global market prices of leading players
- International commodity exchange (CME, NZX, EEX, GDT, CLAL, IFCN, USDA) prices
- Ocean freight and Insurance charges
- Overhead cost related to obtaining international quality certification
- Market related information like supplier details and consumer preferences
- Export- Import regulations of foreign markets etc

*Implementing Internationally Compatible and Future Oriented Policies at National Level:* Integration of activities by various export related agencies by means of adopting Information and Communication Technology should also be the priority in the coming years. This could potentially contribute towards reduced lead time for Indian dairy exports by enabling seamless transfer of trade documents, SPS/TBT related document etc, across government agencies resulting in reduced export documentation time.

Following types of assistances in the form of subsidies are proposed based on a careful introspection existing policy framework along with their adherence to International norms: Subsidies for covering marketing costs of exports (until 2023), Subsidies for covering transport costs for agriculture exports (until 2023), Subsidies for R&D (Research and Development), Subsidies for Modernising and Up-gradation, Actionable Subsidies which does not exceed 5 percent of total ad valorem. In addition to this the Government of India's recently proposed scheme of income support to farmers can also act as a viable alternative to the looming issue of incompatibility of schemes with WTO.

Since the White Revolution in the 1970, Indian Dairy industry has come a long way from being a milk deficit country to achieving the target of the world's largest milk producer. Currently India's contribution in world's milk production is 22% and is expected to have an annual growth rate of 6 % while the rest of the world's annual growth rate is expected to be stagnate at 1%. This scenario offers a golden opportunity for Indian organized dairy sector to enhance the share in export market.

Carefully crafted policies have helped the country to improvise primary activities associated with the industry such as breeding, production and procurement. Even though the Indian dairy industry is capable of meeting the domestic market demands it fails to have the necessary competence to make a notable impact in overseas markets. Constant efforts of policy makers to improvise Indian dairy industry has helped in developments of primary dairy farming related segments such as rearing and breeding, production and procurement and basic cold chain management. Even though these accomplishments are satisfactory from the context of domestic market, it is still far from fulfilling the market demands of many foreign countries especially in pricing and quality aspects. This peculiar situation makes it imperative for Indian dairy sector to transform its operational approaches towards an international market-oriented perspective rather than confine to meeting domestic needs, especially in terms of quality control, traceability and marketing (including pricing). As suggested by this report, Indian dairy industry has to broaden its horizon by planning, organizing and implementing step by step enhancements towards increasing its market share to 5% in international markets by the year 2030. A handcrafted marketing strategy for different types of dairy products according to their identified potential backed by a meticulous quality control and traceability system implemented across India is considered as the central component to achieve this vision.

Table 5: Excerpts of Targeted 10-Year Product Specific Export Growth Strategy-selected products

| Product & Market           |                          | Current     | Targeted 10-Year Export Growth Strategy for India's Dairy Export: Overall numbers (000'US Dollar) |             |             |             |             |             |             |             |              |              |               |
|----------------------------|--------------------------|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|
|                            |                          | 2019        | 2020  | 2021        | 2022        | 2023        | 2024        | 2025        | 2026        | 2027        | 2028         | 2029         | 2030          |
| Over all Dairy Projections | Target: 5% Global Market | \$ 5,35,263 | \$7,07,468  | \$8,50,123  | \$10,15,320 | \$11,95,656 | \$13,77,485 | \$15,78,886 | \$23,57,389 | \$31,39,809 | \$38,94,564  | \$47,02,384  | \$ 55,26,737  |
|                            | Product Aggregate        | \$ 4,23,027 | \$5,65,998  | \$7,05,406  | \$ 8,52,414 | \$10,16,837 | \$12,21,692 | \$14,98,158 | \$23,58,501 | \$33,59,501 | \$49,56,849  | \$72,07,799  | \$1,03,20,165 |
| Ghee                       | Existing Market Target   | \$ 80,289   | \$ 1,06,120   | \$ 1,27,518 | \$ 1,52,298 | \$ 1,79,348 | \$ 2,06,623 | \$ 2,36,833 | \$ 3,53,608 | \$ 4,70,971 | \$ 5,84,185  | \$ 7,05,358  | \$ 8,29,010   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ 1,139    | \$ 2,529    | \$ 4,244    | \$ 6,381    | \$ 9,065    | \$ 12,458    | \$ 16,770    | \$ 22,270     |
|                            | Total                    | \$ 80,289   | \$ 1,06,120   | \$ 1,27,518 | \$ 1,52,298 | \$ 1,80,487 | \$ 2,09,151 | \$ 2,41,076 | \$ 3,59,989 | \$ 4,80,036 | \$ 5,96,643  | \$ 7,22,128  | \$ 8,51,281   |
| WMP                        | Existing Market Target   | \$ 5,353    | \$ 7,075  | \$ 17,002   | \$ 20,306   | \$ 23,913   | \$ 27,550   | \$ 47,367   | \$ 94,296   | \$ 1,25,592 | \$ 1,55,783  | \$ 2,35,119  | \$ 2,76,337   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ 81       | \$ 1,517    | \$ 6,312    | \$ 13,030   | \$ 22,321   | \$ 1,23,943  | \$ 2,59,321  | \$ 4,37,274   |
|                            | Total                    | \$ 5,353    | \$ 7,075  | \$ 17,002   | \$ 20,306   | \$ 23,994   | \$ 29,067   | \$ 53,678   | \$ 1,07,326 | \$ 1,47,914 | \$ 2,79,725  | \$ 4,94,441  | \$ 7,13,611   |
| Butter                     | Existing Market Target   | \$ 42,821   | \$ 56,597   | \$ 68,010   | \$ 81,226   | \$ 95,652   | \$ 1,10,199 | \$ 1,26,311 | \$ 1,88,591 | \$ 2,51,185 | \$ 3,11,565  | \$ 3,76,191  | \$ 4,42,139   |
|                            | New Market Target        | \$ -        | \$ 363  | \$ 904      | \$ 1,691    | \$ 2,813    | \$ 26,341   | \$ 76,822   | \$ 1,78,171 | \$ 3,73,336 | \$ 8,33,918  | \$ 16,43,173 | \$ 30,50,879  |
|                            | Total                    | \$ 42,821   | \$ 56,960   | \$ 68,914   | \$ 82,917   | \$ 98,466   | \$ 1,36,540 | \$ 2,03,132 | \$ 3,66,762 | \$ 6,24,521 | \$ 11,45,483 | \$ 20,19,363 | \$ 34,93,018  |
| Bulk & Pack Milk           | Existing Market Target   | \$ 16,058   | \$ 21,057   | \$ 33,595   | \$ 39,856   | \$ 46,586   | \$ 53,086   | \$ 60,121   | \$ 89,917   | \$ 1,50,846 | \$ 1,86,271  | \$ 2,23,639  | \$ 2,60,916   |
|                            | New Market Target        | \$ -        | \$ 167  | \$ 410      | \$ 756      | \$ 1,241    | \$ 2,014    | \$ 3,035    | \$ 4,379    | \$ 6,144    | \$ 8,458     | \$ 11,480    | \$ 15,421     |
|                            | Total                    | \$ 16,058   | \$ 21,224   | \$ 34,005   | \$ 40,613   | \$ 47,826   | \$ 55,099   | \$ 63,155   | \$ 94,296   | \$ 1,56,990 | \$ 1,94,728  | \$ 2,35,119  | \$ 2,76,337   |
| Cheese (040630)            | Existing Market Target   | \$ 26,763   | \$ 35,373   | \$ 42,506   | \$ 50,766   | \$ 59,783   | \$ 68,874   | \$ 78,944   | \$ 1,17,869 | \$ 1,56,990 | \$ 1,94,728  | \$ 2,35,119  | \$ 2,76,337   |
|                            | New Market Target        | \$ -        | \$ 23   | \$ 47       | \$ 72       | \$ 98       | \$ 503      | \$ 944      | \$ 1,422    | \$ 1,940    | \$ 7,844     | \$ 15,398    | \$ 24,964     |
|                            | Total                    | \$ 26,763   | \$ 35,397   | \$ 42,553   | \$ 50,838   | \$ 59,881   | \$ 69,378   | \$ 79,888   | \$ 1,19,291 | \$ 1,58,930 | \$ 2,02,573  | \$ 2,50,517  | \$ 3,01,301   |
| Cheese (040690)            | Existing Market Target   | \$ 22,989   | \$ 30,838   | \$ 37,601   | \$ 45,559   | \$ 54,417   | \$ 63,576   | \$ 73,883   | \$ 1,11,824 | \$ 1,50,952 | \$ 1,89,735  | \$ 2,32,105  | \$ 2,76,337   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ -        | \$ 3,651    | \$ 7,801    | \$ 12,522   | \$ 17,899   | \$ 24,030    | \$ 31,032    | \$ 39,040     |
|                            | Total                    | \$ 22,989   | \$ 30,838   | \$ 37,601   | \$ 45,559   | \$ 54,417   | \$ 67,227   | \$ 81,684   | \$ 1,24,346 | \$ 1,68,851 | \$ 2,13,765  | \$ 2,63,137  | \$ 3,15,377   |
| Cheese (040610)            | Existing Market Target   | \$ 7,011    | \$ 10,452   | \$ 13,984   | \$ 18,391   | \$ 23,585   | \$ 29,227   | \$ 35,695   | \$ 59,815   | \$ 86,889   | \$ 1,15,573  | \$ 1,48,368  | \$ 1,83,789   |
|                            | New Market Target        | \$ -        | \$ 545  | \$ 1,309    | \$ 2,357    | \$ 3,772    | \$ 5,660    | \$ 8,154    | \$ 11,419   | \$ 15,667   | \$ 21,160    | \$ 28,228    | \$ 37,280     |
|                            | Total                    | \$ 7,011    | \$ 10,997   | \$ 15,293   | \$ 20,748   | \$ 27,358   | \$ 34,887   | \$ 43,849   | \$ 71,235   | \$ 1,02,556 | \$ 1,36,734  | \$ 1,76,595  | \$ 2,21,069   |

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## **ABBREVIATIONS**

ASEAN The Association of Southeast Asian Nations  
APEDA Agricultural and Processed Food Products Export Development Authority  
CME Chicago Mercantile Exchange  
CMIE Centre for Monitoring Indian Economy  
DAHD Department of Animal Husbandry and Dairying  
EEX European Energy Exchange  
EPCG Export Promotion of Capital Goods  
FAO Food and Agriculture Organization  
FSSAI Food Safety Standards Authority of India  
FTA Free Trade Agreements  
FTP Foreign Trade Policy  
GDP Gross Domestic Product  
GDT Global Dairy Trade  
GNI Gross National Income  
GHP Good Hygiene Practices  
GNP Gross National Product  
HACCP Hazard Analysis and Critical Control Points  
ISO International Organization for Standardization  
MENA Middle East and North Africa  
MFN Most Favoured Nation  
MOC Ministry of Commerce  
MOFPI Ministry of Food Processing Industries  
NTM Non-Tariff Measures  
NZX New Zealand Exchange  
OECD Organisation for Economic Cooperation and Development  
PTA Preferential Trade Agreement  
RCA Revealed Comparative Advantage  
SCM Subsidies and countervailing Measures  
SMP Skimmed Milk Powder  
SPS Sanitary and Phytosanitary Measures  
SSA Sub-Saharan African  
TBT Technical Barriers to Trade  
TOR Term of Reference  
UNCOMTRADE United Nations Comtrade Database  
VAP Value Added Product  
WMP Whole Milk Powder  
WTO World Trade Organization  
YOY Year on Year

## DAIRY PRODUCT CODES WITH DESCRIPTION

| Product Code | Product Name        | Description  |
|--------------|---------------------|--|
| 040110       | Bulk & Pack Milk    | Milk and cream, not concentrated nor containing added sugar or other sweetening matter: Of a fat content, by weight, not exceeding 1 %   |
| 040120       | Bulk & Pack Milk    | Milk and cream, not concentrated nor containing added sugar or other sweetening matter: Of a fat content, by weight, exceeding 1 % but not exceeding 6 %   |
| 040140       | Cream               | Milk and cream, not concentrated nor containing added sugar or other sweetening matter: Of a fat content, by weight, exceeding 6 % but not exceeding 10 %  |
| 040150       | Cream               | Milk and cream, not concentrated nor containing added sugar or other sweetening matter: Of a fat content, by weight, exceeding 10 %  |
| 040210       | SMP                 | Milk and cream, concentrated or containing added sugar or other sweetening matter: In powder, granules or other solid forms, of a fat content, by weight, not exceeding 1,5 %  |
| 040221       | WMP                 | Milk and cream, concentrated or containing added sugar or other sweetening matter: In powder, granules or other solid forms, of a fat content, by weight, exceeding 1,5 %: Not containing added sugar or other sweetening matter   |
| 040229       | WMP                 | Milk and cream, concentrated or containing added sugar or other sweetening matter: In powder, granules or other solid forms, of a fat content, by weight, exceeding 1,5 %: Other   |
| 040291       | Condensed Milk      | Milk and cream, concentrated or containing added sugar or other sweetening matter: Other: Not containing added sugar or other sweetening matter  |
| 040299       | Condensed Milk      | Milk and cream, concentrated or containing added sugar or other sweetening matter: Other: Other  |
| 040310       | Yoghurt             | Buttermilk, curdled milk and cream, Yoghurt, kephir and other fermented or acidified milk and cream, whether or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruit, nuts or cocoa: Yoghurt   |
| 040390       | Yoghurt             | Buttermilk, curdled milk and cream, Yoghurt, kephir and other fermented or acidified milk and cream, whether or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruit, nuts or cocoa: Other   |
| 040410       | Whey Powder         | 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 included: Whey and modified whey, whether or not concentrated or containing added sugar or other sweetening matter  |
| 040490       | Whey Powder         | 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 included: Other   |
| 040510       | Butter              | Butter and other fats and oils derived from milk; dairy spreads: Butter  |
| 040520       | Butter              | Butter and other fats and oils derived from milk; dairy spreads: Dairy spreads   |
| 040590       | Butter              | Butter and other fats and oils derived from milk; dairy spreads: Other   |
| 040610       | Cheese              | Cheese and curd: Fresh (unripened or uncured) cheese, including whey cheese, and curd  |
| 040620       | Cheese              | Cheese and curd: Grated or powdered cheese, of all kinds   |
| 040630       | Cheese              | Cheese and curd: Processed cheese, not grated or powdered  |
| 040640       | Cheese              | Cheese and curd: Blueveined cheese and other cheese containing veins produced by <i>Penicillium roqueforti</i>   |
| 040690       | Cheese              | Cheese and curd: Other cheese  |
| 350110       | Casein              | Casein, caseinates and other casein derivatives; casein glues: Casein  |
| 350190       | Caseinates          | Casein, caseinates and other casein derivatives; casein glues: Other   |
| 170211       | Lactose             | Other sugars, including chemically pure lactose, maltose, glucose and fructose, in solid form; sugar syrups not containing added flavouring or colouring matter; artificial honey, whether or not mixed with natural honey; caramel : Lactose and lactose syrup : Containing by weight 99 % or more lactose, expressed as anhydrous lactose, calculated on the dry matter  |
| 190110       | Infant Milk Formula | Malt extract; food preparations of flour, groats, meal, starch or malt extract, not containing cocoa or containing less than 40 % by weight of cocoa calculated on a totally defatted basis, not elsewhere specified or included; food preparations of goods of headings 0401 to 0404, not containing cocoa or containing less than 5 % by weight of cocoa calculated on a totally defatted basis, not elsewhere specified or included : Preparations suitable for infants or young children, put up for retail sale |

# CHAPTER 1: BACKGROUND OF THE STUDY

## 1.1 Introduction

India is a global leader in dairy with a share of 22% in world milk production, standing at 186 million tonnes as of 2018<sup>1</sup>. Nevertheless, India's milk production is challenged by several factors such as lower milk productivity, water scarcity, lack of formalisation of the market structure, insufficient feed & fodder resources, lack of farming techniques, fragmented herd size, inadequate veterinary services coupled with a plethora of other factors prevent India from being a major player in the international dairy market. In fact, India's share in global dairy exports stands at 1%, compared to major exporters such as Germany (12.4%), New Zealand (12%), Netherlands (11.6%), France (8.3%) and USA (5.3%). Under the WTO regime of international trade, India's dairy products have been facing stiff competition from other global player's with respect to sanitary requirements and certification issues especially in markets of developed countries.

India is also one of the largest consumers of dairy products. Rising population growth, urbanisation, and escalating growth in income within the country have significantly raised the demand for dairy products resulting in lower surplus. Major dairy products exported by India are butter and ghee, cheese and curd, buttermilk, curdled milk and whey. India's export of milk and cream is mainly within the South Asian countries while exports of Whey, Cheese, Butter, Buttermilk, etc to distant countries like USA, Canada, Southeast Asian countries and the Middle East.

In this context, the proposed study, titled "Roadmap and Strategies to Promote Export of Dairy Products for the Organized Dairy Sector", intends to examine several challenges faced by dairy industry especially the organised dairy sector both from domestic as well as from international perspective. The study also aims at suggesting export promotion strategies for dairy products and thereby proposing a roadmap for Dairy industry in terms of infrastructure requirement, pricing strategies and improving the availability of marketable surplus and quality of the products. The major objectives of the study, can therefore be summarized as under:

- Analysing India's domestic production and market challenges for Dairy products from Stakeholder's Perspective and suggesting a future roadmap
  - To analyse the domestic market of dairy products and thereby identifying the challenges in terms of inadequate infrastructure, skills, price instability, etc. faced by stakeholders

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<sup>1</sup> Dairy Market Review (March,2019), Food and Agricultural Organization (FAO)

- To suggest a future road map for the Indian dairy industry to enhance the domestic production and strategies to improve the accessibility to the marketable surplus
- Analysis of India's International Trade in Dairy Products
  - To analyse export and import trend of dairy products in India at the disaggregated level
  - To examine India's comparative advantage across dairy products in the world market
  - To identify the potential markets and major competitors for dairy products across the globe
  - To identify the 'Thrust Products' to understand India's trade opportunities in the global market across products at disaggregated level
- Examining challenges in International Markets faced by Indian Dairy Products and suggesting future export promotion strategies
  - To study the challenges in market access for Indian dairy products in potential international markets in terms of tariff and Non-Tariff Measures.
  - To study the price competitiveness of Indian dairy products in the international market.
  - To suggest export promotion strategies for Indian dairy products in the international markets

## **1.2 Indian Dairy Industry: An Overview**

### ***1.2.1 The Domestic Market***

The 'White Revolution in India' introduced by the 'Operation Flood' in 1970 positively affected the growth of India's domestic milk production, currently making India one of the global leaders in the world market with a share of 22% in world milk production. Between 2017 and 2018, India's milk production leaped from 176 million Tonnes to 186 Million Tonnes an estimate of 5% annual growth<sup>2</sup>. However, India's milk production is constrained by several factors like lower milk productivity, water scarcity, lack of formalisation of the market structure, insufficient feed and fodder resources, lack of farming techniques, fragmented herd size and inadequate veterinary services. These constraints in turn also affect the domestic production of value-added milk products/dairy products.

As dietary preference in India is given to dairy product and not animal protein (meat), as a result of which the per capita demand for dairy has increased. Between 2008-17, India alone accounted for 57.7 percent of the global demand growth for the fresh dairy products and the same is expected to reach 60.4 percent in the decade of 2017-2027. Per capita consumption of the dairy products by Indian consumers is also

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<sup>2</sup> OECD/FAO (2018), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database)

projected to grow at 36 percent by the year 2027 (refer Table 1.1) while total consumption is expected to grow at 51 percent, which is the highest in the world.

*Table 1.1 Projected Growth (%) in Consumption of Dairy Products by 2027*

| Regions                      | Growth in Per capita Consumption | Growth in Total Consumption |
|------------------------------|----------------------------------|-----------------------------|
| Sub Saharan Africa           | -7%                              | 23%                         |
| India                        | 36%                              | 51%                         |
| China                        | 23%                              | 27%                         |
| Middle East and North Africa | 2%                               | 20%                         |
| OECD Countries               | 3%                               | 8%                          |
| World                        | 13%                              | 26%                         |

*Source: OECD/FAO (2018), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database)*

The dairy product market in India comprises mainly two sub-categories:

- Commodity Market: Comprises of fresh milk and skimmed milk powder
- Value-added Products Market: Comprises of Curd, Dahi, Ghee, Paneer, Cheese, Butter, Beverages and Whey protein

In developing regions, the consumption of fresh dairy products is more, while processed products such as butter and cheese dominate dairy consumption in the developed world (refer Table 1.2). In India, large portion consumption in dairy products in the coming years will be mainly from Fresh dairy products followed by Cheese, Butter, Skimmed Milk Powder and Whole Milk Powder.

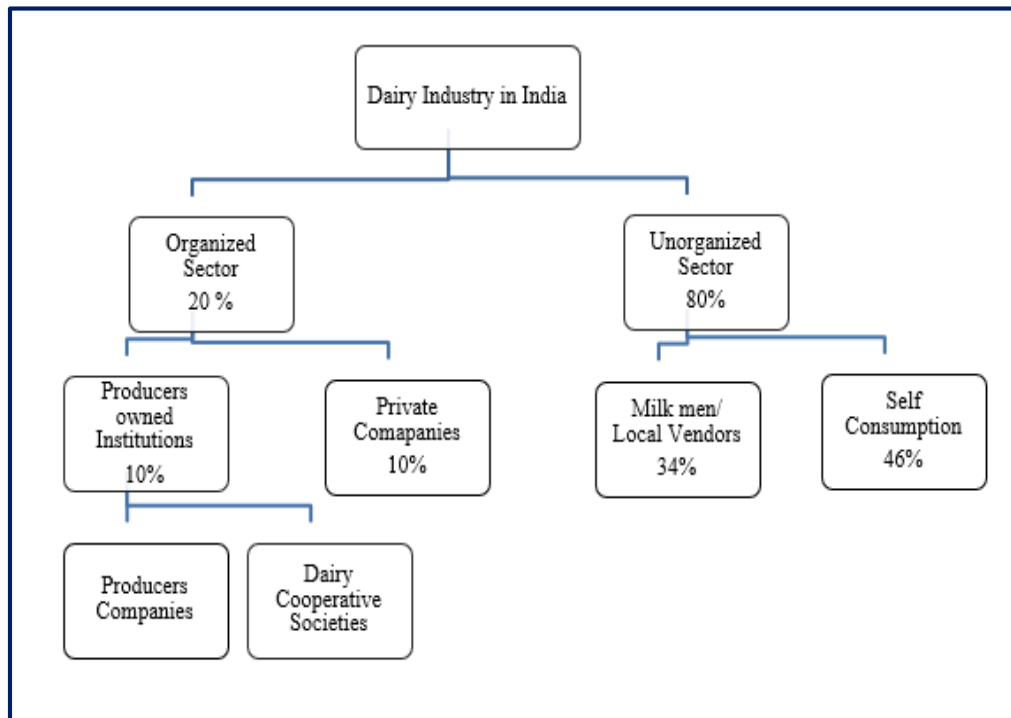
*Table 1.2 Projected Consumption (KG/Capita) of different Dairy Products by 2027*

| Regions | Fresh dairy | Cheese | Skim milk powder | Whole milk powder | Butter |
|---------|-------------|--------|------------------|-------------------|--------|
| SSA     | 3.08        | 0.11   | 0.13             | 0.24              | 0.10   |
| India   | 22.83       | 4.86   | 0.18             | 0.003             | 3.21   |
| China   | 3.13        | 0.18   | 0.26             | 1.44              | 0.14   |
| MENA    | 6.77        | 2.32   | 0.91             | 1.20              | 1.06   |
| OECD    | 8.59        | 7.63   | 1.50             | 0.63              | 2.66   |
| World   | 9.89        | 1.81   | 0.59             | 0.73              | 1.37   |

*Source: OECD/FAO (2018), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database)*

The Indian Dairy Sector can be classified mainly into organized and unorganized sector (Figure 1. 1). The unorganized sector comprises of the famers who are engaged in small scale operations. Producers owned companies and private companies come under organized sector. Dairy co-operatives are also the part of

the producer owned institutions. As per the annual report (2017-2018) of Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture & Farmers Welfare, co-operatives and the private players are procuring only 20 percent of the milk produced in the country, whereas 36 percent of it is sold by the small scale farmers (the unorganized sector) and 46 percent is consumed locally (Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture & Farmers Welfare 2018).



*Figure 1. 1: Indian Dairy Industry Structure*

Dairy Farm sector in the country is highly fragmented and small scale farmers who owns only two cattle constitutes 97 percent of the total dairy farms in India (refer Table 1.3). Even though, the numbers of large dairy farmers who own hundred or more cattle are less in the country, they out-perform small and medium farmers in terms of productivity/yield(Moran and Chamberlain 2017).

Organized Indian dairy industry is characterised by the large number of POIs (Producers Owned Institutions) which dwarfs any other business models such as private firms or multinational companies. POIs in Indian dairy sector comprises mostly of Dairy cooperative societies and producer companies. There are more than 200 Producer Companies and 1,85,903<sup>3</sup> dairy cooperative societies spread across the country out of which Uttar Pradesh has most of the cooperatives (16.7%) followed by Bihar (11.8%), Maharashtra (11.1%), Gujarat (10.2%) and Karnataka (8.5%). These Primary producers' organisations

<sup>3</sup>“Dairy Cooperatives at a Glance” Annual report 2017-18 NDDDB, pp 72

work towards protecting small farmers from ill-effects of globalization and making them participate successfully in the modern competitive markets (Trebbin and Hassler 2012). 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.

*Table 1.3 Herd Size of Dairy Farms in India*

| Herd size (cows per Farm) | Percentage of farms | Number of farms (Million) | Number of cattle (Million) | Average cow milk yield (L/ Year) |
|---------------------------|---------------------|---------------------------|----------------------------|----------------------------------|
| 2                         | 97                  | 73                        | 146                        | 700                              |
| 8                         | 3                   | 2                         | 16                         | 1100                             |
| 18                        | 0.4                 | 0.3                       | 5                          | 1500                             |
| 50                        | 0.07                | 0.05                      | 3                          | 2500                             |
| 100                       | 0.03                | 0.05                      | 2                          | 4000                             |
| Total                     | 100                 | 75                        | 172                        | 2365                             |

*Source: OECD/FAO (2018), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database)*

Major competitors in the Dairy Food products market in the India are Amul, Mother Dairy, Parag and Hatsun Agro (Research and Markets, Business Wire, 2015). Out of These companies, Parag and Hatson Agro are incorporated as private companies while Amul and Mother dairy are Producer Owned Institutions. Other major players amongst the private companies and producer owned institutions are Heritage Foods Ltd., Kquality Ltd., Prabhat Dairy Ltd., Karnataka Cooperative Milk Producers Federation Ltd., Tamil Nadu Cooperative Milk Producers Federation Ltd. and Andhra Pradesh Dairy Development Cooperative Federation Ltd. Table 1.4 enlist the top six private and producer owned companies in terms of their market share in India (Table 1.4).

The increasing market share is due the growth in the demand of the Valued Added Products like Cheese and Butter. As per various rating agencies the revenue growth in the value-added product category (VAP) is growing at 14-15 percent annually which is 50 percent faster than the overall dairy sector's growth rate<sup>4</sup>. To boost this growth the organized dairy sector plans to invest Rs. 140 billion in the next three years to increase the processing capacity by 25-30%.

<sup>4</sup>Value-added dairy products to grow 50% faster than sector; <https://www.crisil.com/en/home/newsroom/press-releases/2018/07/value-added-dairy-products-to-grow-50percent-faster-than-sector.html>

*Table 1.4 Major Drinking Milk Marketing Companies in India (percentage market Share)<sup>5</sup>*

| Brand        | Company Name  | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------|---|------|------|------|------|------|------|
| Amul         | Gujarat Co-operative Milk Marketing Federation Ltd          | 13.1 | 13.2 | 13.5 | 14.0 | 14.4 | 15.0 |
| Mother Dairy | Mother Dairy Fruit and Vegetable Private Ltd.               | 12.3 | 11.9 | 11.7 | 11.6 | 11.4 | 11.5 |
| Nandini      | Karnataka Cooperative Milk Producers Federation Ltd         | 8.3  | 8.3  | 8.5  | 8.5  | 8.6  | 9.0  |
| Aavin        | Tamil Nadu Cooperative Milk Producers Federation Ltd        | 6.7  | 6.6  | 6.4  | 6.4  | 6.3  | 6.1  |
| Vijaya       | Andhra Pradesh Dairy Development Cooperative Federation Ltd | 3.9  | 3.5  | 3.6  | 3.7  | 3.8  | 3.8  |
| Mahanand     | Maharashtra Rajya Sahakari Dudh Mahasangh Maryadit          | 3.6  | 3.7  | 3.7  | 3.7  | 3.7  | 3.7  |

*Source: Packaged Food, Euromonitor (2019)*

Amidst of growing demand and consumption patterns in the Indian dairy market, there is a fierce competition between the private players, co-operatives, multinational and home-grown brands. For example, Multinational Companies such as Danone exited the Indian Dairy Market in 2018<sup>6</sup> and then re-entered by investing in the brand ‘Epigamia’<sup>7</sup> (Greek Yoghurt).

India’s milk production has been constantly increasing almost every next year; in the year 2000-01 the total milk production in India was estimated at around 80 million metric tons which reached to 187.7 million metric tons in 2018-19 at the compound annual growth rate of around 5 percent. States which are contributing the most are Uttar Pradesh, Rajasthan, Gujarat, Madhya Pradesh and Andhra Pradesh. These five states produce more than half of country’s total milk supply.

### **1.3 The International Market**

Major dairy products exported by India are butter and ghee, cheese and curd, buttermilk, curdled milk and whey. India's export of Milk and Cream is mainly within the South Asian countries and Whey, Cheese,

<sup>5</sup>A Complete list of companies is available in Annexure I

<sup>6</sup>Its again about money, honey; <https://www.thehindubusinessline.com/companies/its-again-about-money-honey/article10042480.ece>

<sup>7</sup>Danone to re-enter Indian dairy business as part of Rs. 182 crore deal;(economic times)



Butter, Buttermilk, etc to distant countries like USA, Canada, Southeast Asian countries and the Middle East. India's export trend in some of the products is not very consistent over the years; there was high jump in export of Milk and Cream products in the years 2013 and 2014. However, rest of the products are comparatively consistent in terms of export trend.

India is not a major player in the international dairy market. It has a share of approximately one percent while major exporters of dairy products in the world are Germany (12.4%), New Zealand (12%), Netherlands (11.6%), France (8.3%) and USA (5.3%). Under the WTO regime of international trade, India's dairy products have been facing stiff competition from other global players in respect of sanitary requirements and certification issues especially in the markets of the developed countries.

The major dairy import markets of the world are Germany (11%), China (6.35%), Netherlands (5.61%) and France (5.43%). India's percent share of dairy world import is less than zero percent. As discussed in the previous section India is the largest milk producer in the World and it produces 22 percent of the total world produce. Out of the total milk produce, most of it is consumed in raw form and only 35 percent is processed, and a large proportion of that is converted into traditional products like cheese, ghee, cottage butter, khoya, curd, malai, etc. in the unorganized sector (Ohlan 2012).

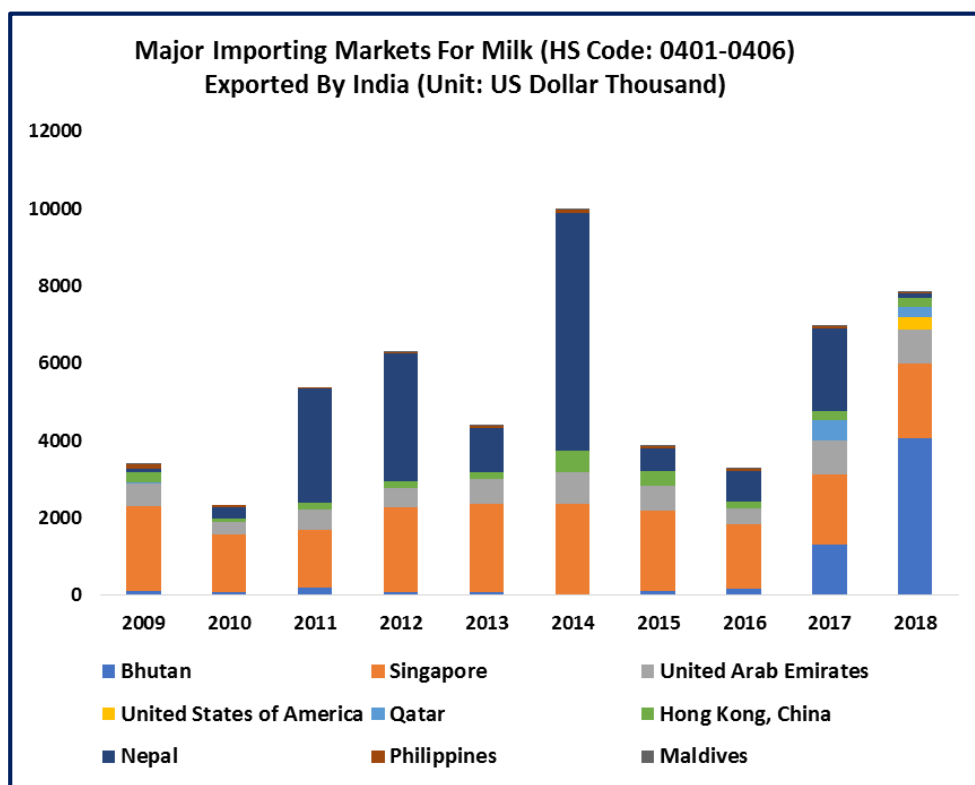


Figure 1. 2: India's top Export Markets for Milk (HS Code 0401) (US Dollar Thousand)  
Source: ITC Trade map, International Trade Centre (2019), Geneva

Apart from the above-mentioned dairy products (Included in Chapter 4 of HS Nomenclature) Certain Products of milk such as Casein (HS 3501), Lactose (HS 1702) and Malt based milk preparations (HS 1901) are also exported by India. Countries like Indonesia, Kenya, Sudan, United States and Sri-Lanka are the major export markets for Lactose produced by India (Figure 1. 3).

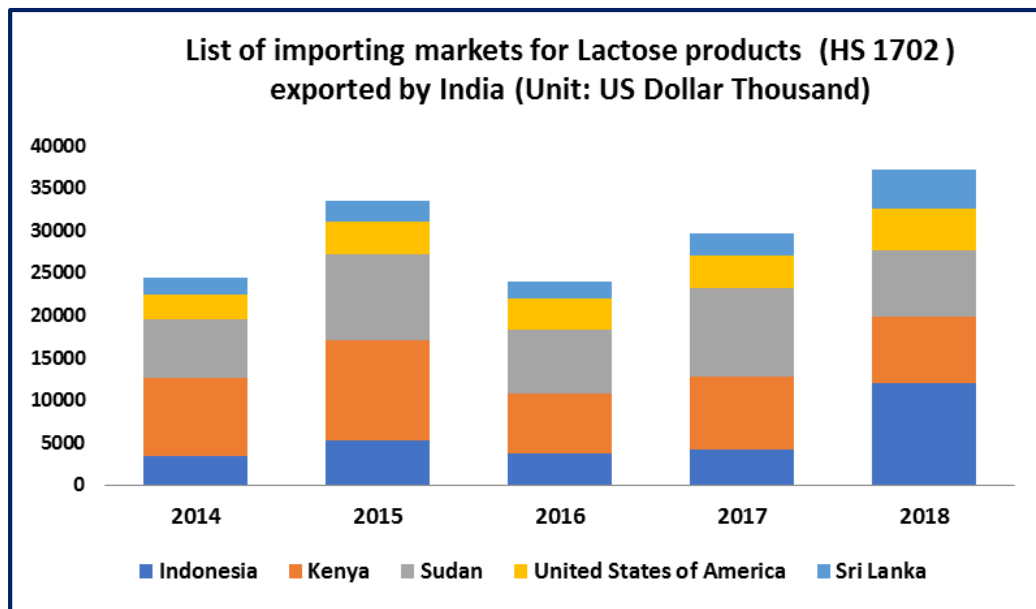


Figure 1. 3: India's top Export Markets for Lactose (HS Code 1702) (US Dollar Thousand)  
Source: ITC Trade map, International Trade Centre (2019), Geneva

When it comes to exports of casein from India, United States possesses a large chunk of share whereas South East Asian countries such as Thailand, Malaysia, Vietnam and Philippines altogether take a minor share (Figure 1. 4).

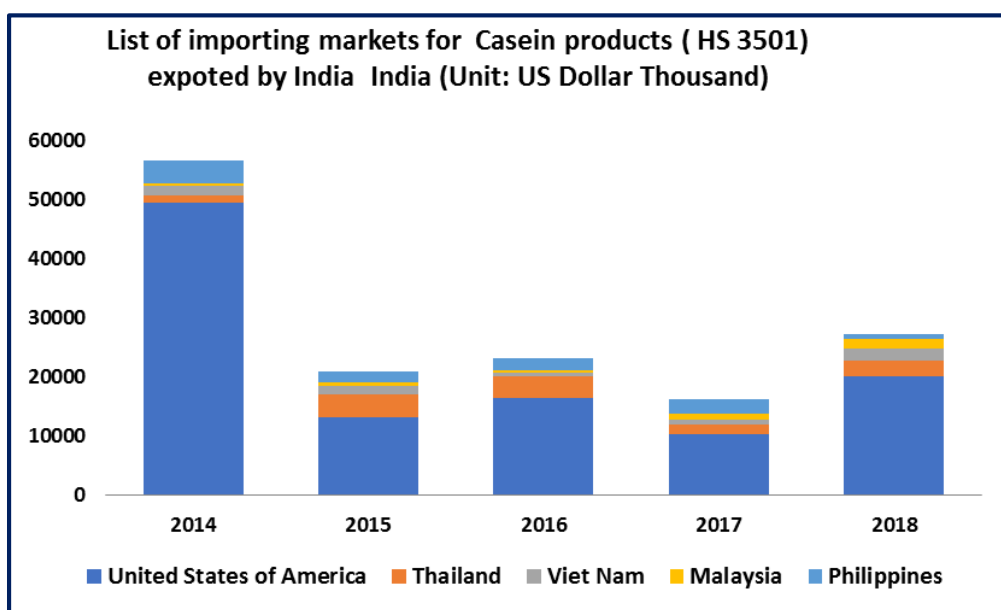


Figure 1. 4: India's top Export Markets for Casein (HS Code 3501) (US Dollar Thousand)  
Source: ITC Trade map, International Trade Centre (2019), Geneva

Neighbouring Countries such as Sri-Lanka, Nepal and Bangladesh imports Malt based food products from India. United States has also been importing the product from India over the years, but the figures have been showing a diminishing trend (Figure 1. 5).

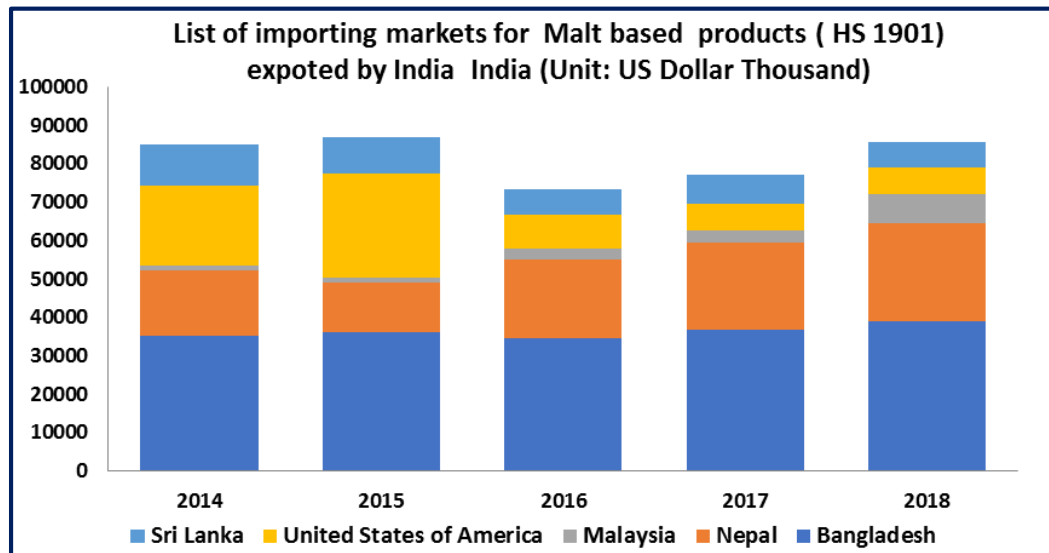
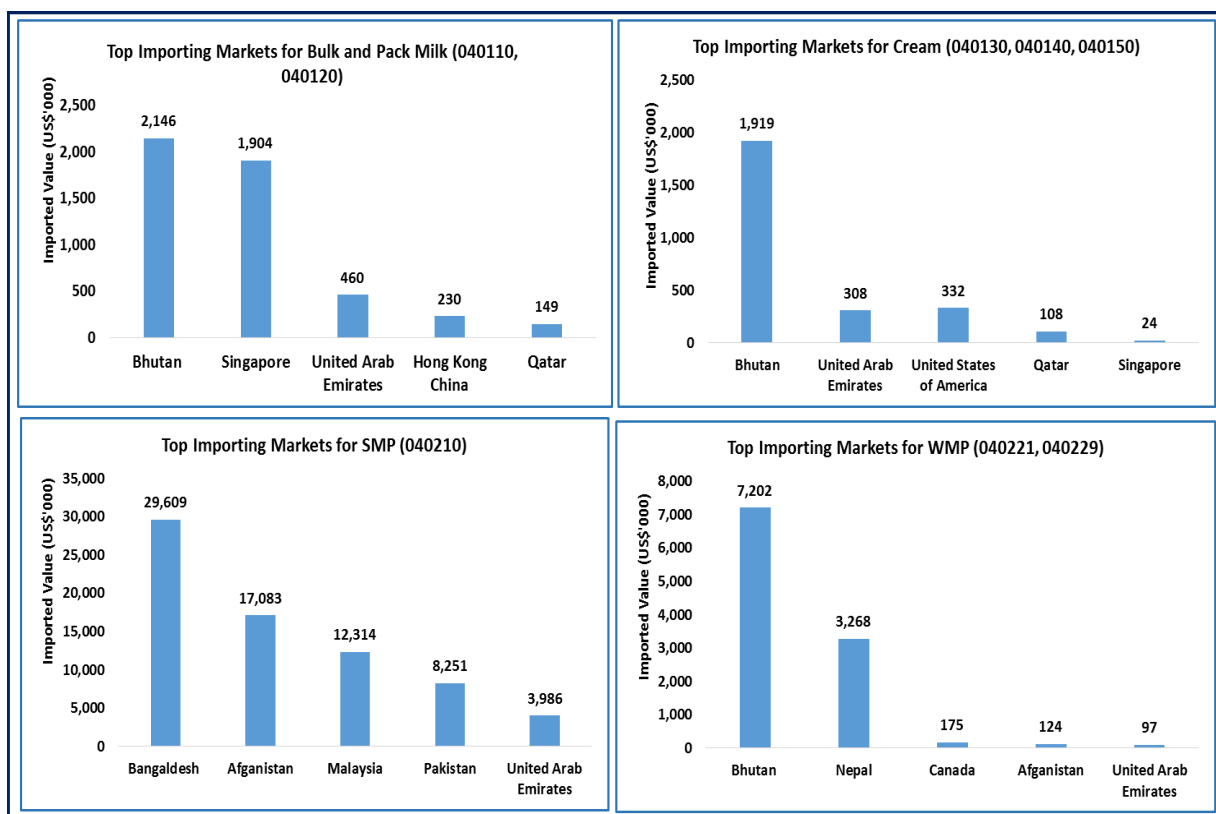


Figure 1. 5: India's top Export Markets for Malt based Milk products (HS Code 1901) (US Dollar Thousand)  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

India's export trend in some of the products is not very consistent over the years there was substantial rise in exports of Milk and Cream products in the years 2013 and 2014. However, rest of the products are comparatively consistent in terms of export trend. India is not a major player in the international dairy market with a share of as less as one percent. Major exporters of dairy products in the world are Germany (12.4%), New Zealand (12%), Netherlands (11.6%), France (8.3%) and USA (5.3%). Under the WTO regime of international trade, India's dairy products have been facing stiff competition from other global players in respect of sanitary requirements and certification issues especially in the markets of the developed countries.



*Figure 1. 6 Top Importing Markets for India for Bulk and Pack Milk, Cream, SMP and WMP*  
*Source: ITC Trade map, International Trade Centre (2019), Geneva*

The top export markets for India in Bulk and Pack milk (040110, 040120) is neighbouring country Bhutan followed by Singapore and other countries of MENA region. Qatar is an upcoming market for India (Figure 1. 6). Bhutan is also the largest importer of Cream (040130, 040140, and 040150) and WMP from India (040221, 040229). WMP is also imported in large quantities by Nepal. This could be on account of a close proximity of countries with India. UAE and USA are other large importers of cream from India. SMP from India is most popular in demand in the Asian regions like Bangladesh, Afghanistan, Malaysia and Pakistan. SMP also has a large market in UAE.

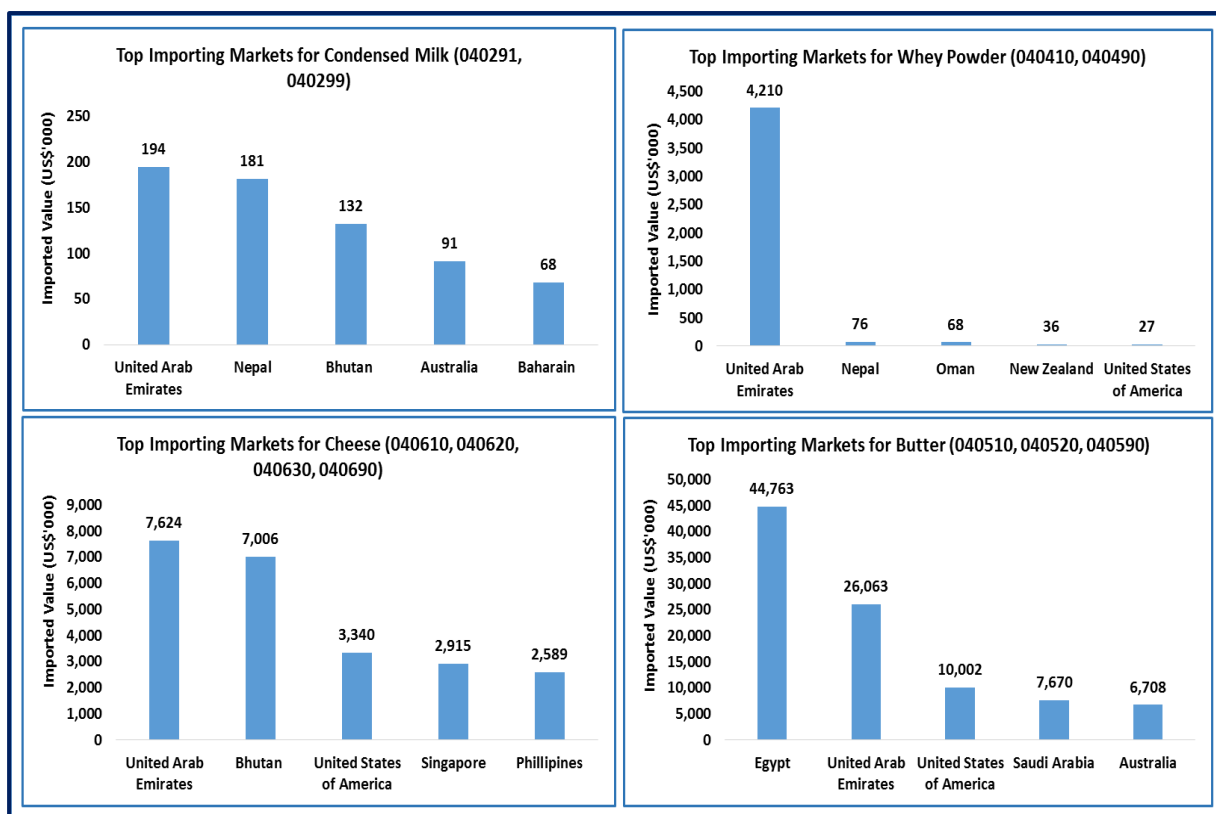


Figure 1. 7 Top Importing Markets for India for Condensed Milk, Whey Powder, Cheese and Butter  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

From Figure 1. 7 it is observed that the UAE is the largest importer from India for condensed milk (040291, 040299), Whey powder (040410, 040490) and Cheese (040610, 040620, 040630, 040640, and 040690). A re-export trend in UAE has also been observed in these categories. For condensed milk, Nepal and Bhutan, owing to their closer proximity to India are second and third largest importers from India followed by Australia and Bahrain. Australian market choosing India along with major producers like New Zealand and Germany says a lot about the potential of Indian Dairy sector. Whey Powder is exported in high quantity to UAE and in very small quantities to Nepal, Oman, New Zealand and USA. After UAE, Bhutan is the next largest importer of cheese from India followed by USA, Singapore and Philippines. Egypt is the most important market for butter (040510, 040520, and 040590) from India followed by UAE, USA, Saudi Arabia and Australia.

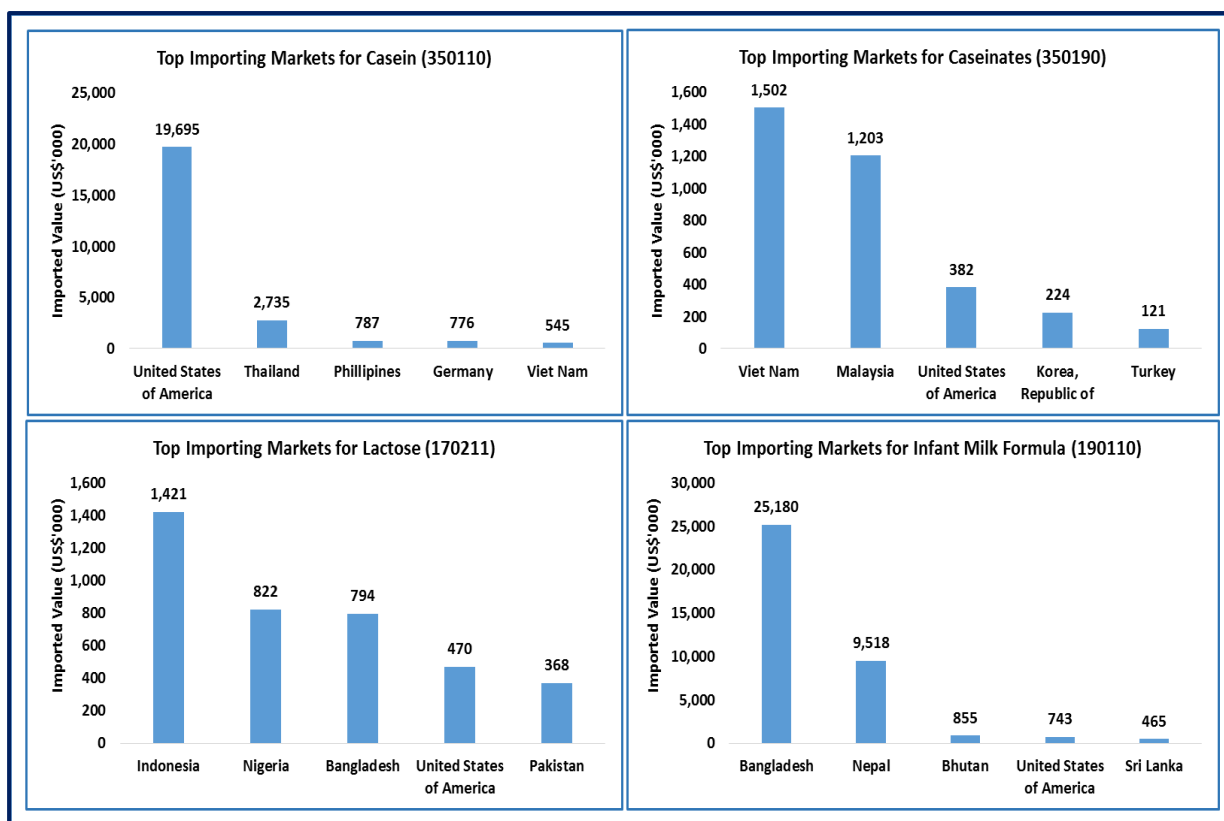


Figure 1. 8 Top Importing Markets for India for Casein, Castigates, Lactose and Infant Milk Formula  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

Figure 1. 8 depicts that Casein (350110) is exported in large quantities to USA owing to the demand pattern of USA being more inclined towards health products. It is also due to the fact that casein can be classified as a luxury milk product whose affordability is limited to developed nations. It is exported in small quantities to Thailand, Philippines, Germany and Vietnam. Vietnam is the largest importer of caseinates (350190) followed by Malaysia, USA, Korea and Turkey. Indonesia and Nigeria are the largest and second largest importer of lactose (170211) from India. Lactose is also exported to neighbouring regions of Bangladesh and Pakistan. Most of the lactose exported to Pakistan is re-exported to other countries however this trend of re-exporting lactose is not followed in Bangladesh. Infant milk formula (190110) is majorly exported by India to the neighbouring regions primarily Bangladesh, Nepal, Bhutan and Sri-Lanka. It is also exported in small quantities to United States of America.

## 1.4 Conclusion

The present chapter has attempted to provide the background of the current status of India vs the world's leading player's market share in exports of various dairy products. It is observed that India's dairy farming system is different than the most of the developed countries that are trading dairy products in large quantities in the global markets. Moreover, the dairy industry in India is found to be largely unorganized

and fragmented at the same time. Out of the organized dairy sector, dairy co-operatives in the country plays a prominent role with large market share in the domestic market. India's production levels as well as the per capita availability of milk is also found to be growing at pace which is higher than the rest of the world. The current scenario provides a dismal picture of India's contribution to world dairy exports. This has revealed that India does not have a solid presence in the International markets when it comes to International trade of dairy products. In addition, it is found that India's export markets are predominately in the SAARC countries. This peculiar situation creates immense scope for Indian dairy sector to venture into the global markets in the coming future. The current study will attempt to examine the reasons that inhibit India's dairy export growth and will provide a roadmap and strategy that enable it to become one of the leading world dairy exporters.

# **CHAPTER 2: INDIAN DAIRY EXPORTS: AN ANALYTICAL OVERVIEW**

## **2.1 Background**

India's contribution to the world's dairy exports currently stands at around one percent. To understand and recommend a roadmap for promoting Indian dairy export, an extensive secondary analysis is needed. The production process of all the dairy product are intertwined and dependent on each other. To understand this complex structure of production, consumption, surplus, export and import it is necessary to investigate and compare each product category at the country and the world level. This chapter intends to present a comprehensive idea of world and India export and import values and quantity trends of milk and milk products. It also provides an in-depth world and India unit value comparison of milk and milk products.

## **2.2 Introduction**

India's main exporting dairy products includes butter oil, SMP, bulk and pack milk, cream, butter, condensed milk, casein, caseinate, lactose pharmaceuticals, infant milk, yoghurt, buttermilk and whey powder. This chapter intends to present an analytical overview of the dairy industry with the help of presenting a comparison between world and India export trends, import trends based on the value, quantity and unit value. The major objective of this chapter is to compare India's product wise export and import trend based on the export and import value and quantity with the World's trend.

## **2.3 India's Exports Vs GDP**

India's GDP is growing at an average rate of 6% to 7% per annum constantly, making it one of the fastest growing major economy in the world. The average growth rate of Indian goods export between 2009-2018 is also at 6%, though a variation of -21% to 24% in growth rate is observed. Dairy exports is following the Indian goods export trend; however, the average growth rate of dairy export is more than the average growth rate of goods export. Indian dairy industry has a tremendous scope for capturing the global market with rising population from 7 billion to 8 billion by 2030. Nevertheless, Indian dairy industry as a huge potential in future and will keep influencing world dairy trade.

## **2.4 International Market Trends**

The global trade recorded largest increase in 2017 after six years. The positive trend continued in 2018 and expected to increase in 2019. This uptrend in the international market is driven by the increase in import demand across the globe but most notably in Asia. To take advantage of the evolving international



market and global trade trend in the dairy sector it is important to identify the major competitors (country-wise) and the largest importers of dairy product in the world. As the prime objective of the project is to formulate a roadmap for Indian dairy export, therefore, the trend analysis becomes the basis for our subsequent analysis.



Figure 2. 1 India's GDP, Merchandise Exports and Dairy Exports growth rate  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### 2.4.1 World Export

Due to the bulky and perishable nature of milk as a commodity, dairy products are mostly consumed in the region where they are produced. This makes the dairy sector, a highly localised industry with a small fraction of global production being traded internationally. As per FAO Food Outlook (2019), it was estimated that only 8 percent of the global milk production is traded internationally.

The share of the top exporters in the world is studied from 2009 to 2018. It is observed that Germany remains the largest exporter of dairy products in the world<sup>8</sup>. Cheese and curd are the most exported products by Germany followed by non-concentrated milk and cream. Germany's share (12.4%) as the largest exporter is followed by New Zealand (11.79%), Netherlands (11.63%), France (8.41%) and USA (5.36%). India's share is around one percent in the total exports of dairy products in the world. As

<sup>8</sup> ITC Trade map, International Trade Centre (2019), Geneva

compared to 2013, India's share contracted from 0.78% to 0.56% in 2018. Under the WTO regime of international trade, India's dairy products have been facing stiff competition from other global players in respect of sanitary requirements and certification issues especially in the markets of the developed countries.

#### 2.4.1.1 Product wise Trend

The most traded dairy products in the world are Cheese & Curd followed by concentrated milk & cream, butter, non-concentrated milk & cream, whey powder and buttermilk. Cheese and curd are the most important item in the world exports of dairy comprising of 36.53% of the total dairy exports. This is followed by concentrated milk and cream (20.56%), butter (12.78%), non-concentrated milk and cream (10.60%), whey (4.99%) and buttermilk (4.85%). As compared to the world trend, India's most important item of dairy exports is butter which comprised of 30.84% of India's total export of dairy products.

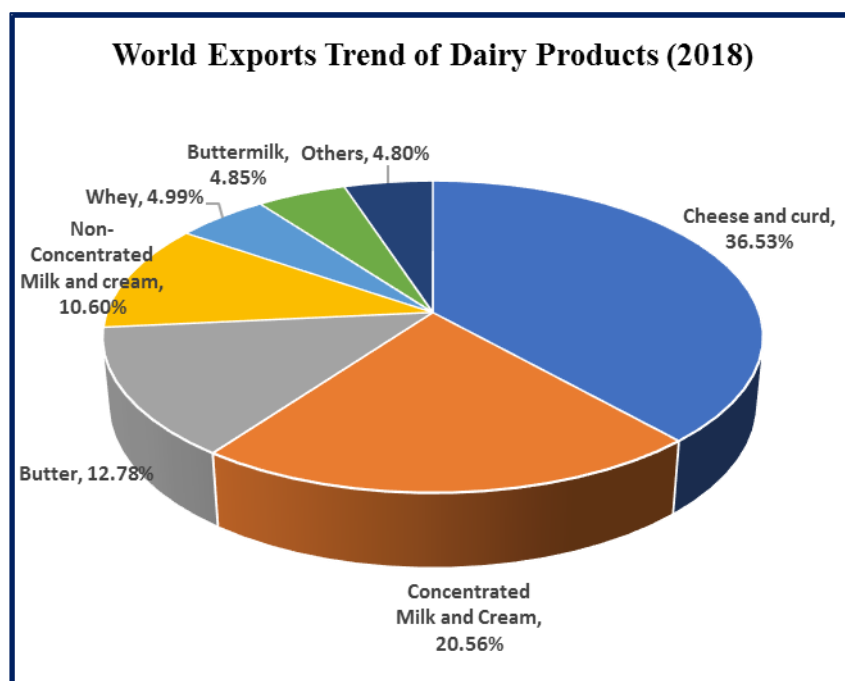


Figure 2. 2: World Exports Trend of Dairy Products (2018)  
Source: ITC Trade map, International Trade Centre (2019), Geneva

#### 2.4.1.2 India's Product wise Export and Import Trend

##### **Butter**

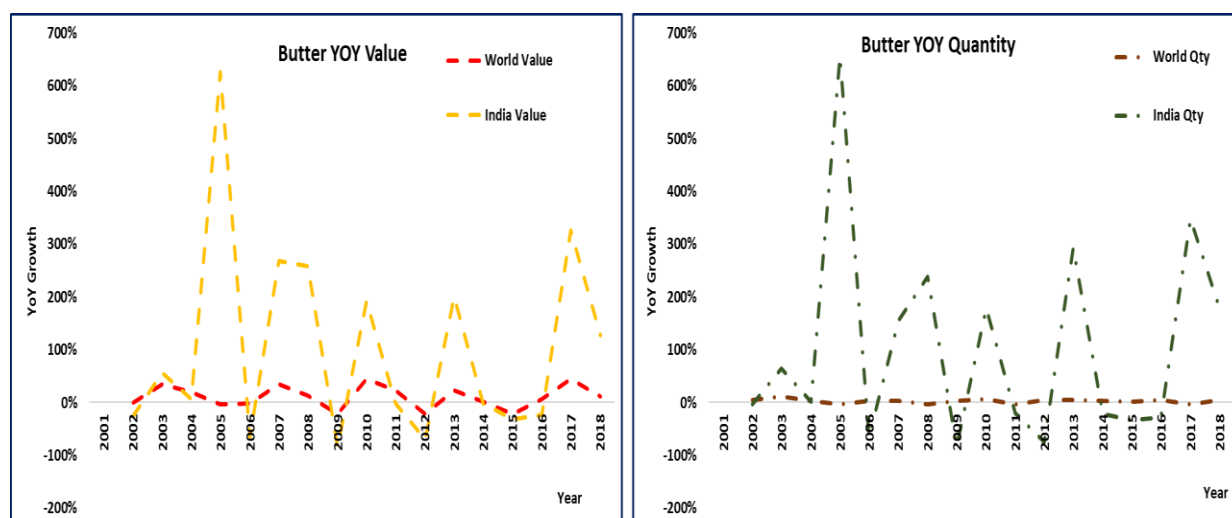
Butter has three codes; 040510, 040520 and 040590. 040510 is Butter (excluding dehydrated butter and ghee), 040520 is dairy spreads of a fat content, by weight, of  $\geq 39\%$  but  $< 80\%$  and 040590 is Fats and

oils derived from milk, and dehydrated butter and ghee (excluding natural butter, recombined butter and whey butter).

### *Butter (040510)*

#### Exports

In case of exports of 040510, the YoY change in quantity in case of world export remain constant whereas fluctuations in YoY change in export value is observed (Figure 2. 3). This indicates that the price of 040510 at the world level is not consistent. The YoY change in export value of 040510 from India has tried to follow the world pattern, however the YoY change in export quantity is not following the world pattern. This also depicts that the price of 040510 at which India is exporting is not in sync with the World Price.



*Figure 2. 3 Butter (040510) Exports YoY Value and YoY Quantity*  
*Source: ITC Trade map, International Trade Centre (2019), Geneva*

The absolute unit value of 040510 shows somewhat similar pattern. In case of unit value, there was an increase seen in world and India values in 2004, 2007-08, 2010-11 and 2016. In 2017, there was an increase in YoY unit value of world by 49.86% while in India there was a decline by -4.74% (Figure 2. 4). The YoY growth in unit value of world's and India's butter exports increased in 2003, 2004, 2007, 2010 and 2016. Decline in unit value of world's and India's butter exports is observed in 2005, 2008, 2009, 2012, 2015 and in 2018.

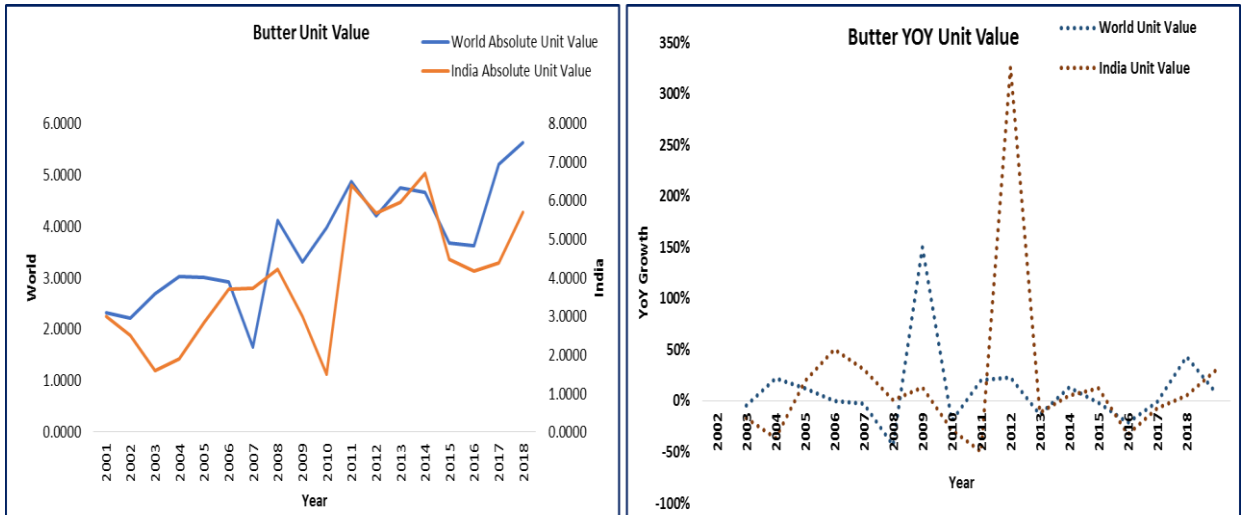


Figure 2. 4 Butter (040510) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

The YoY change in value and quantity in case of world import remain similar. However, the YoY change in quantity and value in case of India's import is seen a rise in 2003 and afterwards India has attempted to follow the world trend during the recent years (Figure 2. 5).

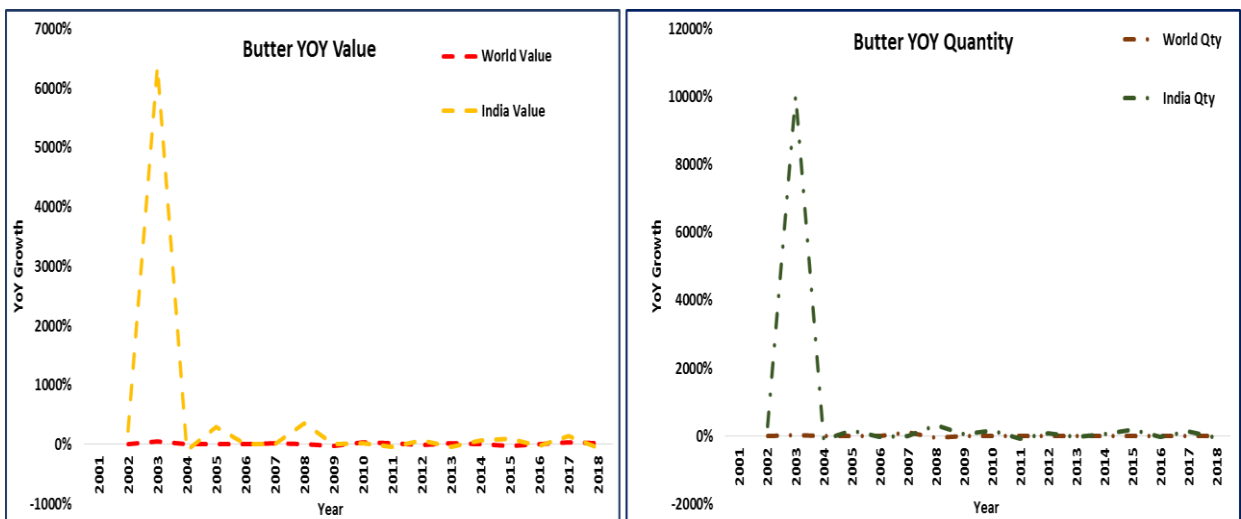


Figure 2. 5 Butter (040510) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The absolute unit value of 040510 of world and India increased in 2004, 2007-08, 2010-11, and 2016-2018. In 2018, there was a decline in world imports by 8% but for India the imports increased by 29.77% as compared to the previous year. The YoY growth in unit value of world and India butter imports increased in 2008, 2011, 2013 and in 2016 while there was a decline in 2006-07, 2009, 2012, 2015 and in 2017 (Figure 2. 6).

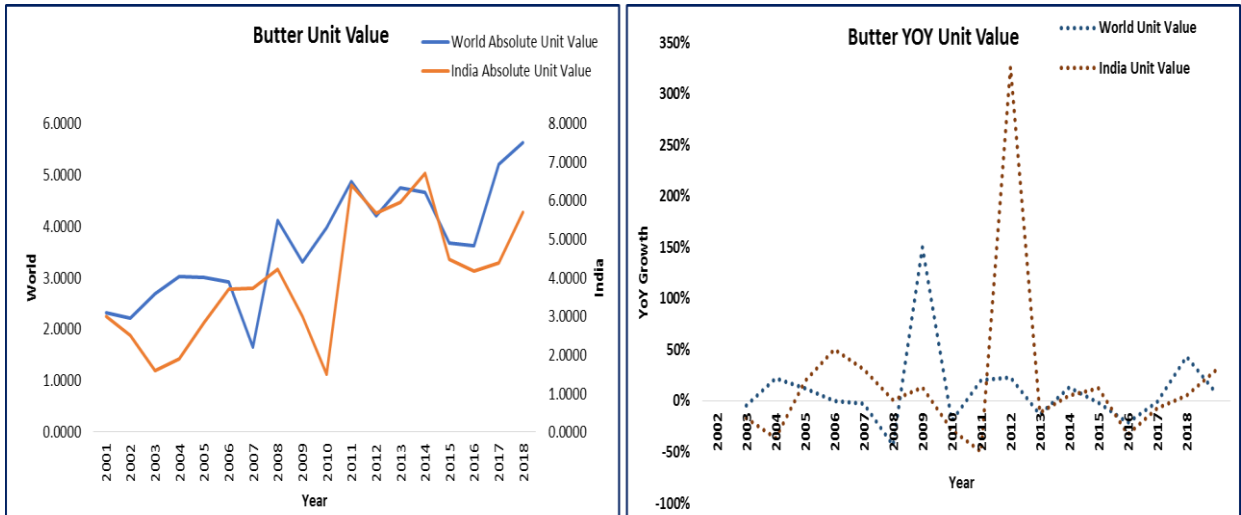


Figure 2. 6 Butter (040510) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Butter (040520)

#### Exports

The YoY change in quantity and value in case of world export remain constant while the YoY change in quantity and value of India's 040520 export is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased. While exporting 040520, the India's YoY change in value and quantity is following the world pattern. However, there are certain intermittent peaks observed when the YoY change in India is more than the YoY change for the world export in terms of quantity and value (Figure 2. 7).

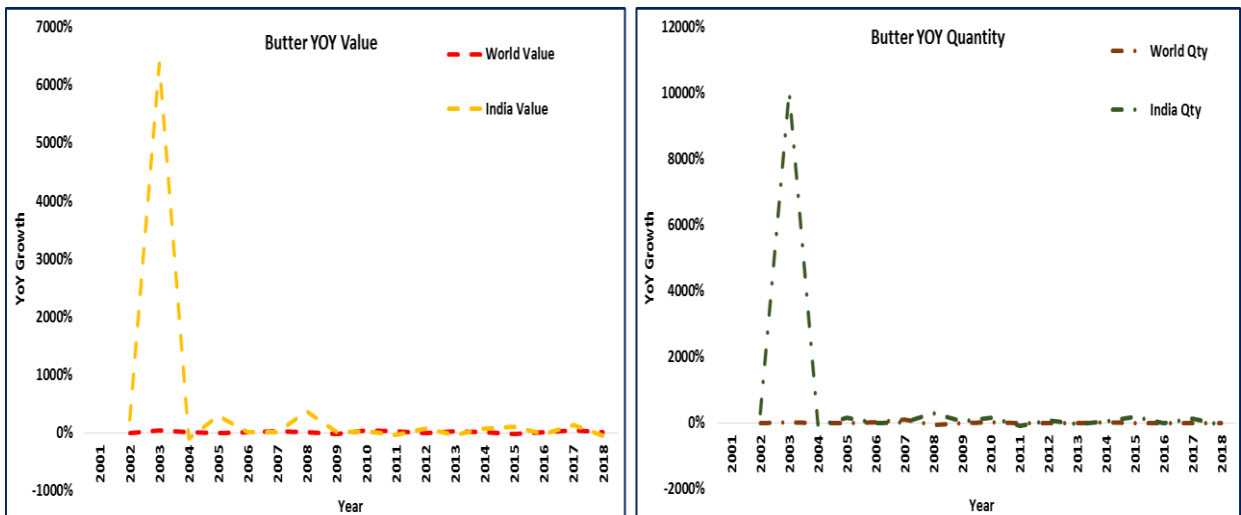


Figure 2. 7 Butter (040520) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The absolute unit value of butter exports for world increased from 4.40 to 4.63 in 2018 (Figure 2. 8) and for India it increased from 3.47 to 3.64. In 2018, YoY unit value of both world and India's butter exports decline from 25.49% to 5.37% and from 19.16% to 5.04% respectively. The YoY growth in unit value of world and India butter exports increased in 2008 and in 2010 while there was a decline in 2006, 2009, 2012 and in 2018.

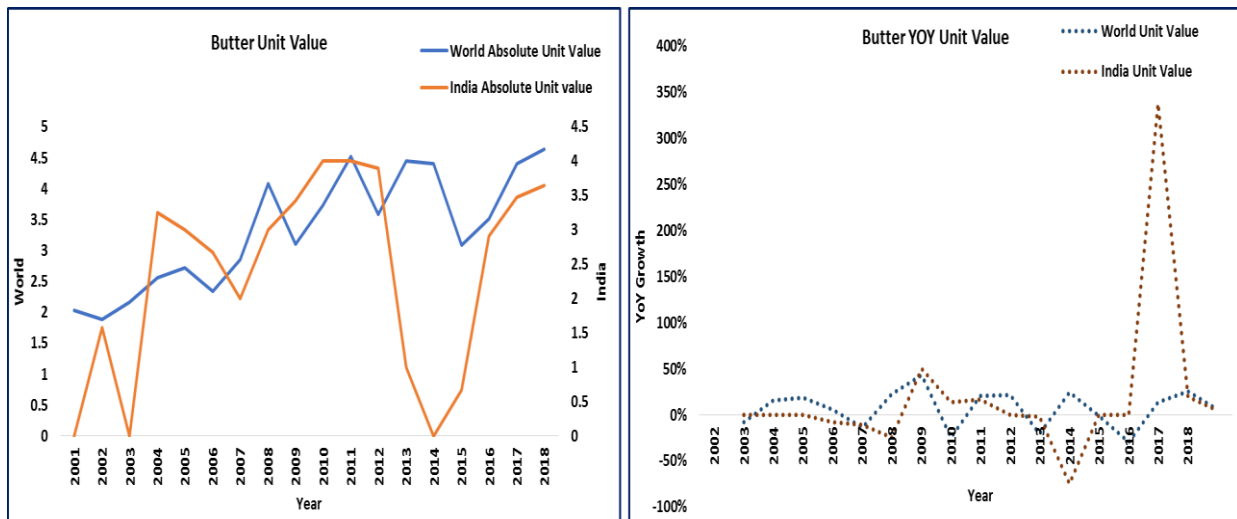


Figure 2. 8 Butter (040520) exports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

In case of quantity, India's YoY change in quantity is inversely related to the YoY change in world quantity. If we compare India and the world imported value and quantity, there is no uniformity in the changes over the years. (Figure 2. 9).

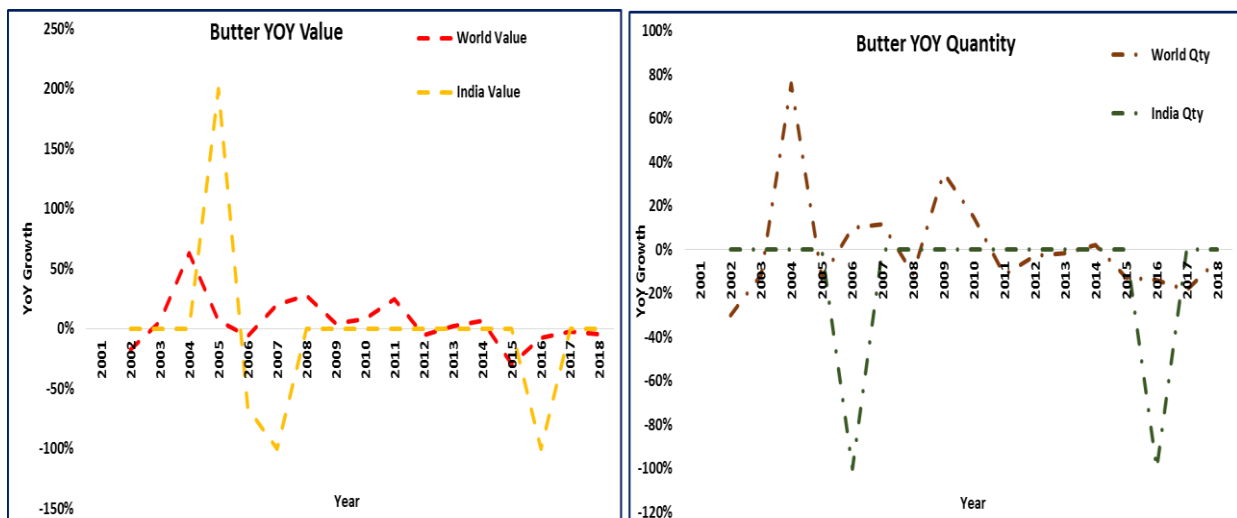


Figure 2. 9 Butter (040520) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of imports of world increased consistently except for some decline in value in 2004, 2006, 2009-10, 2012 and 2015. The YoY unit value for India remains consistent whereas there is fluctuations in case of world unit values as depicted in Figure 2. 10.

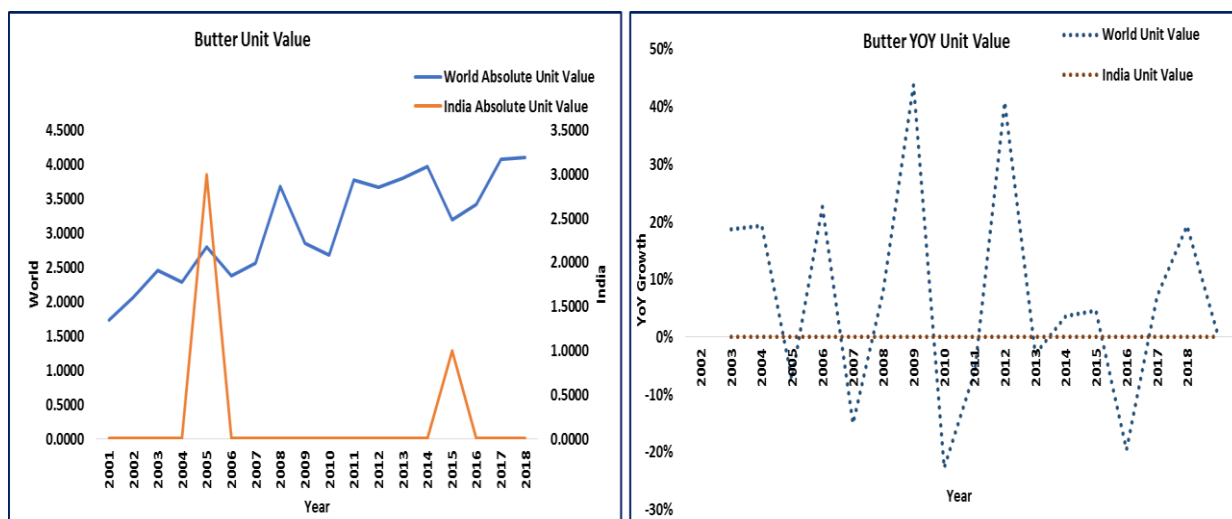


Figure 2. 10 Butter (040520) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Butter/Butter oil/Ghee (040590)

#### Exports

In case of India's exports of 040590, the YoY changes in quantity and YoY changes in value of can be observed as fluctuating (Figure 2. 11) in contrast to the world trends. The degree of fluctuation for both YoY quantity and value is found very high during 2011-2013 for India. This indicates that the price of 040590 at which India is exporting is not in sync with the world price.

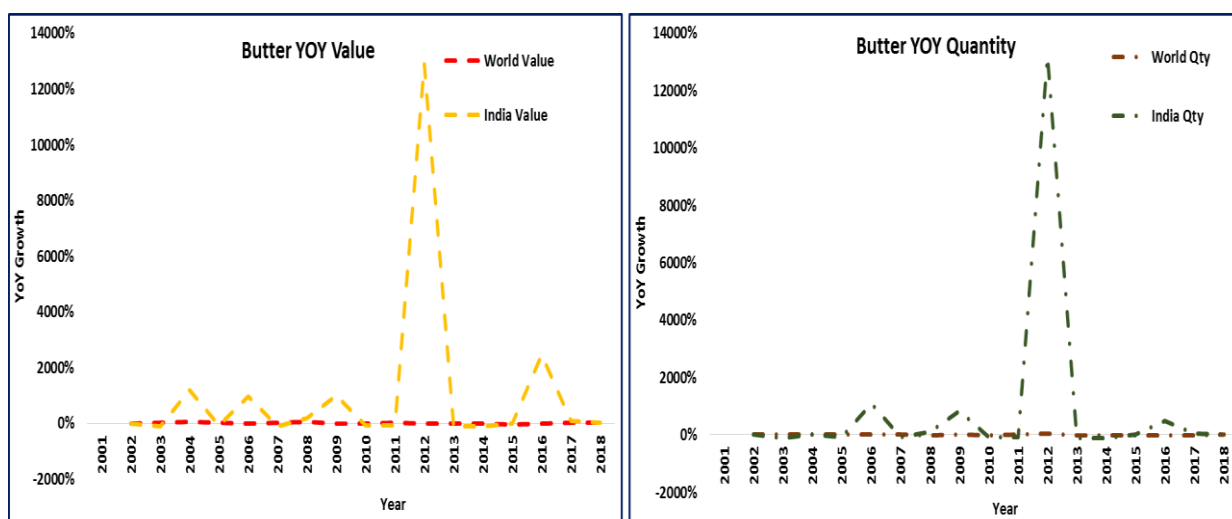


Figure 2. 11 Butter (040590) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of 040590 world exports increase from 6.09 to 6.26 USD thousand while that of India increased from 6.81 to 6.11 USD thousand in 2018 (Figure 2. 12). There was an increase in the world and India's butter exports by 51.07% and 10.25% respectively in 2017, whereas in 2018, there was decline in both world and India's butter exports by 2.72% and -10.37% respectively. The YoY growth in unit value of world and India butter exports increased in 2003, 2007, 2013 and in 2017 while unit value of world and India butter exports declined continuously from 2004 to 2006, then from 2008-2009, then in 2012, 2015 and in 2018.

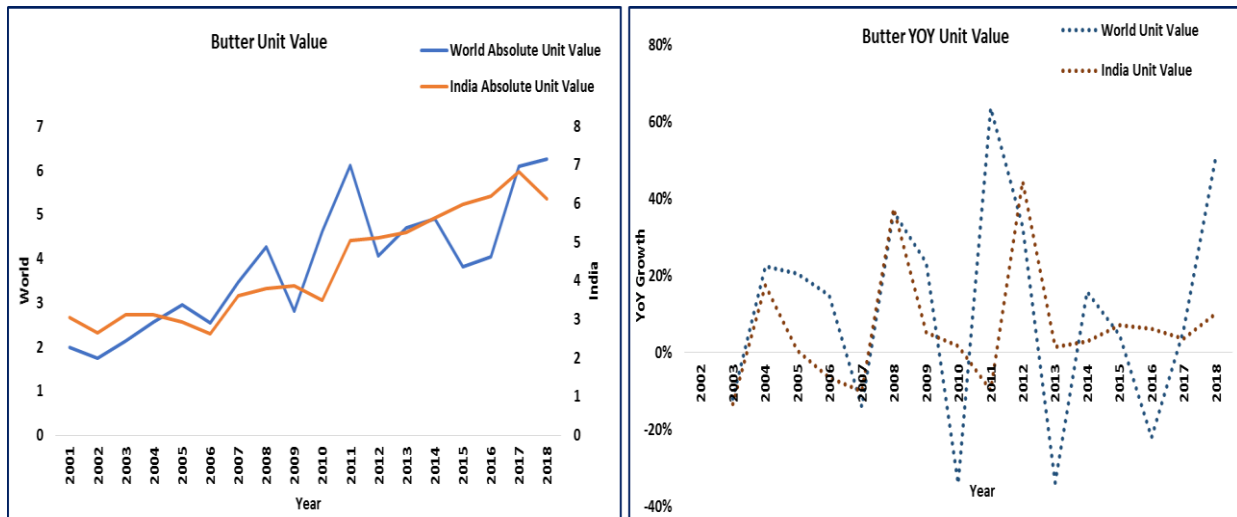


Figure 2. 12 Butter (040590) exports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Import

The value and quantity of world as well as value and quantity of India follows a similar pattern. The YoY change in quantity and value in case of world import is slightly fluctuating whereas in case of India there is a high degree of fluctuation (Figure 2. 13), it can be further observed that, for both world and India, the quantity and value is following similar trend.

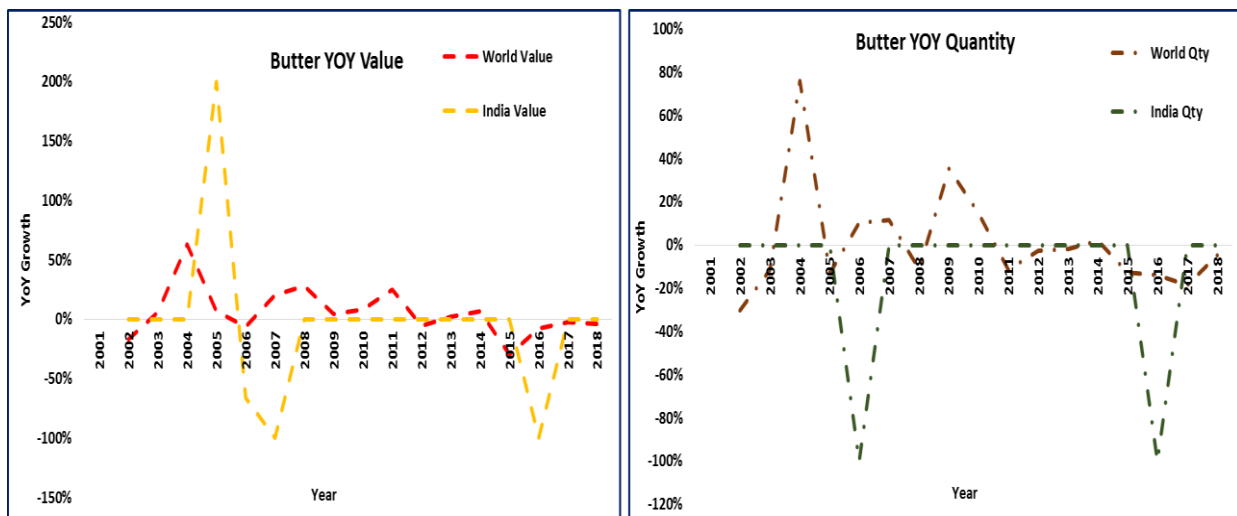


Figure 2. 13 Butter (040590) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva,



In 2018, unit value of world butter imports has slightly increased while India's import unit price increased at a faster pace in comparison with the world (Figure 2. 14). The YoY growth in unit value of world and India butter imports increased in 2003, 2007, 2010, 2014, and 2016-2017. While the YoY growth in unit value of world and India butter imports declined continuously from 2004-2006, then in 2009 and 2015.

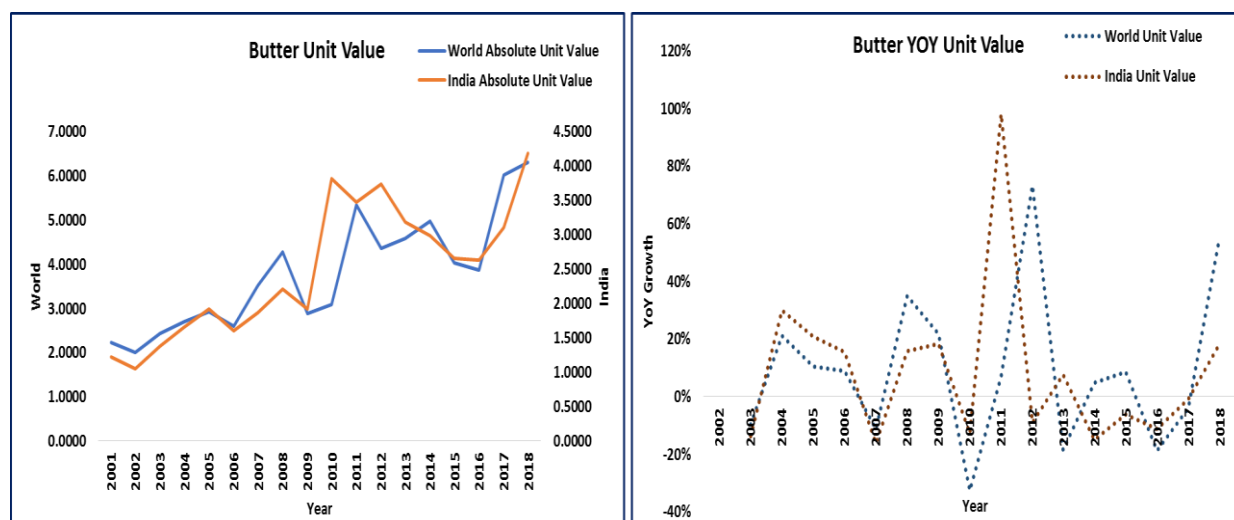


Figure 2. 14 Butter (040590) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Butter Price Trends

According to OECD- FAO reports (2001-2018), Butter prices increased in 2003-04 partly due to adverse weather conditions which negatively affected the milk production in Oceania which consists of some major dairy exporting countries. There was decrease in prices in 2008-2009, due to global economic crisis caused by low demand of milk products and increase in supplies from major exporters. Butter prices declined as there was rise in global milk production in 2012. Additionally, higher returns and excellent pasture conditions in Oceania, South America generated a supply response triggering the fall in milk and dairy prices. In second half of 2013 there was rise in prices as Chinese milk production decline that lead to strong import demand for dairy products and higher international prices. Lower import demand in China, growing production in EU, US and Oceania were the major drivers of decrease in prices in 2015. In, 2016-17, there was a major increase in prices due to the increase in world milk production. Global supply-demand balances are responsible for decline in prices in 2018.

### Skimmed Milk Powder

#### Skimmed Milk Powder (040210)

##### Exports

India's YoY change in export quantity and value when compared to YoY change of world export is at par (Figure 2. 15). Some peaks are observed at irregular intervals. A sharp increase in YoY change in

India's quantity and value export is observed during 2011. Export Value and quantity Skimmed Milk Powder from India is not going in par with the world trends. After a minor rise in the exports during 2002-05 period the values and quantities remained flat till 2010, a period where the SMP Exports rose to all-time record.

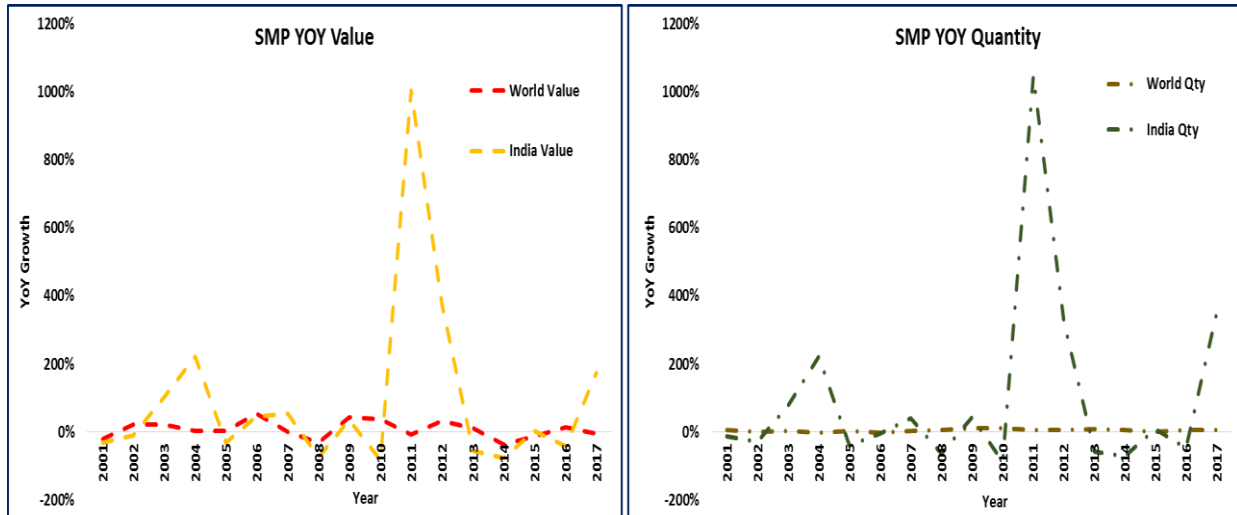


Figure 2.15 SMP (040210) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of world exports decreased from 2.26 to 2.00 USD Thousand and that of India decreased from 3.04 to 1.85 USD Thousand (Figure 2.16). The YoY growth in unit value of world SMP exports declined in 2015 by -38.88%, followed by a slight rise in 2016 by -12.23%. However, in 2017 it increased to 8.17% but in 2018 it again declined by -11.29%. Similar is the trend in case of India's SMP exports as it declined in 2015 by -20.48%, in 2016 by -3.85%, increased in 2017 by 10.96% and then again declined in 2018 by -39.01%.

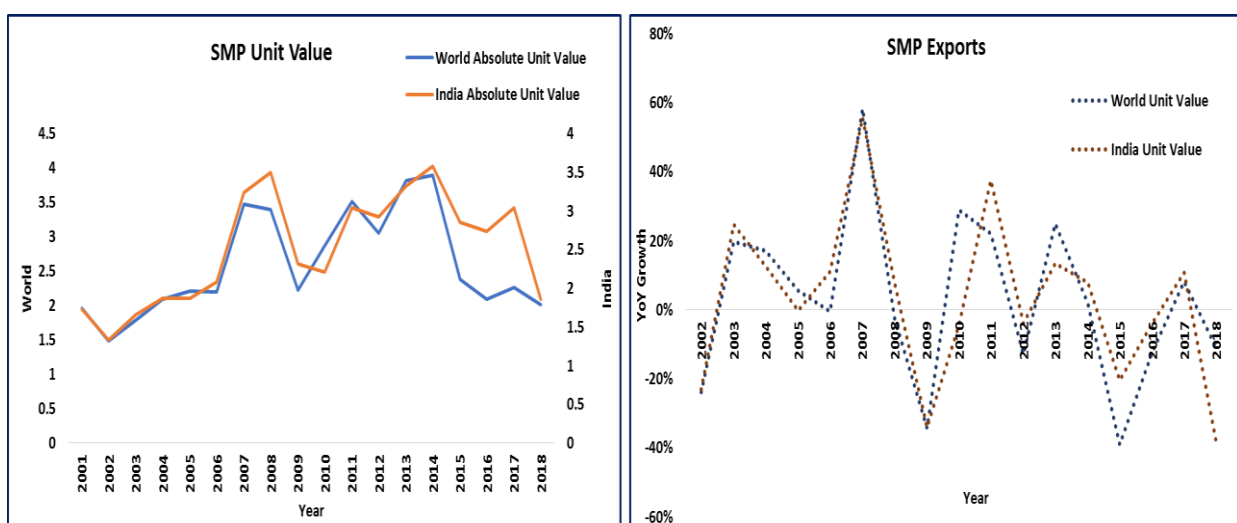
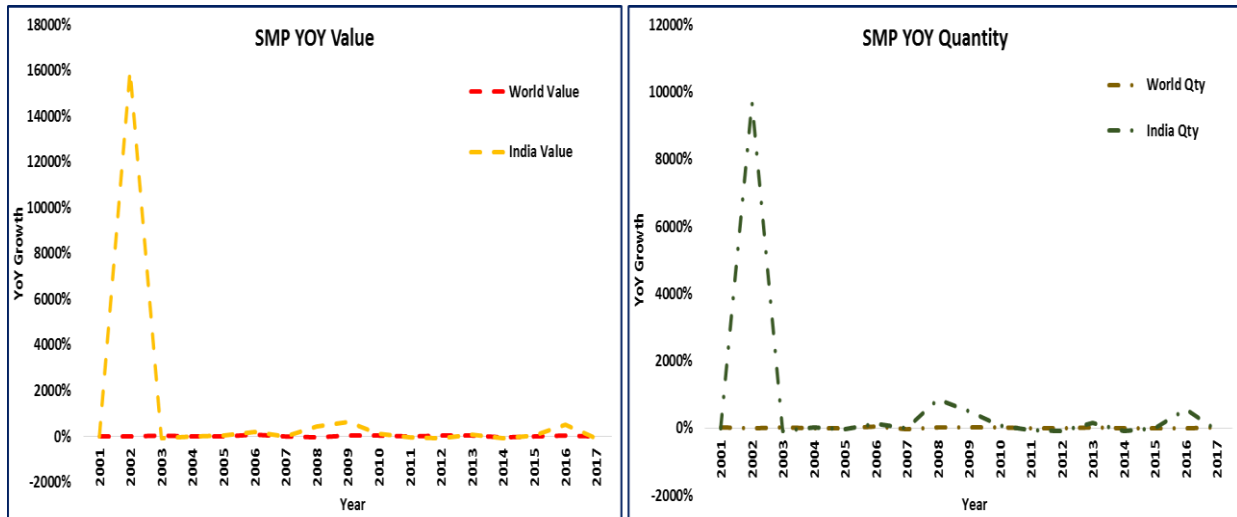


Figure 2.16 SMP (040210) exports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

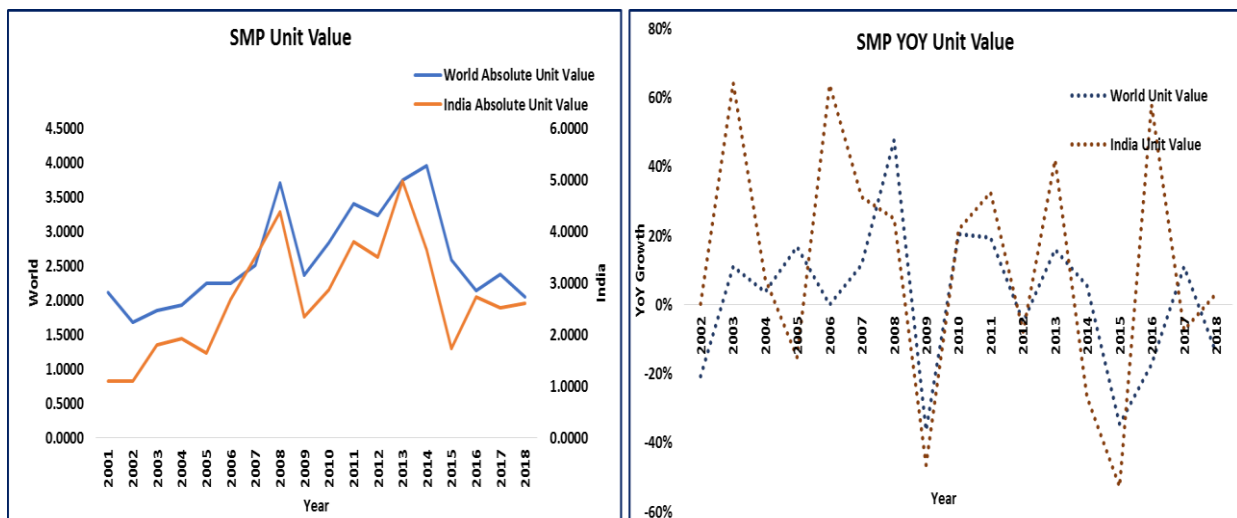
## Import

It is observed that India is importing in accordance with the world patterns, except during the period of 2001-03 when we consider the import value and quantity. The YoY change in import quantity and value has followed a correlation for both World and India (Figure 2. 17).



*Figure 2. 17 SMP (040210) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva*

The unit value of world imports decreased in 2018 while that of India increased from 2.52 to 2.60 USD Thousand (Figure 2. 18). The YoY growth in unit value of world SMP imports was on rise in 2016 by -17.31% compared to previous year, in 2017 there was an increase in imports by 11.09% but in 2018 there is decline in import unit value by -13.86% while in case of India in 2017 imports declined by -7.28% compared to previous year but in 2018 it again increased by 3.11%.



*Figure 2. 18 SMP (040210) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva*

## SMP Price Trends

According to OECD- FAO reports (2001-2018), in 2006, SMP prices was higher as compared to other dairy product due to increased demand. At the end of 2013, there was high SMP prices due to decline in the Chinese milk production that lead to increased import demand. In 2015, there was decrease in prices due to lower import demand from China and due to increasing production in EU, US and Oceania. In 2016-17, draught and adverse weather restricted production in Oceania pasture-based system reduced the production in New Zealand and Australia. Thereby increase in SMP prices.

## Cheese

Cheese consists five codes: 040610, 040620, 040630, 040640 and 040690. 040610 is Fresh cheese "unripened or uncured cheese", incl. whey cheese, and curd. 040620 is Grated or powdered cheese, of all kinds. 040630 is Processed cheese, not grated or powdered. 040640 is Blue-veined cheese and other cheese containing veins produced by "Penicillium roqueforti" and 040690 is Cheese (excluding fresh cheese, incl. whey cheese, curd, processed cheese, blue-veined cheese and other cheese containing veins produced by "Penicilliumroqueforti", and grated or powdered cheese).

### Cheese (040610)

#### Exports

In case of exports of 040610, the YoY change in quantity in case of world export has shown slight fluctuations whereas high fluctuations in YoY change in export value is observed (Figure 2. 19). This indicates that the price of 040610 at the world level is not consistent. The YoY change in export value and quantity of 040610 from India is not following the world pattern. This also depicts that the price of 040610 at which India is exporting is not in sync with the World Price.

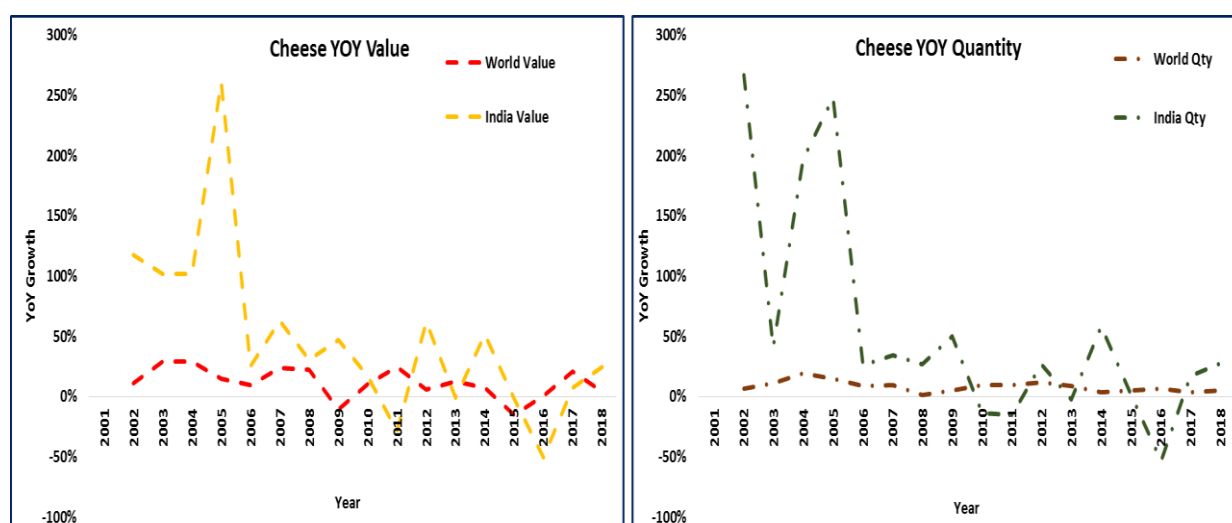


Figure 2. 19 Cheese (040610) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of world exports decreased from 3.59 to 3.56 USD thousand in 2018 and India's unit value exports decreased from 3.81 to 3.74 USD thousand (Figure 2. 20). In 2017, unit value of world cheese exports rises by 16.89% and India declined by -8.10%. In 2018, the unit value of world cheese exports declines by -0.93% and while India unit value of world cheese exports rise by -1.96%. The YoY growth in unit value of world and India cheese exports increased in 2003, 2007, 2010 and in 2016 while the YoY growth in unit value of world and India cheese exports declined in 2004, 2009 and in 2015.

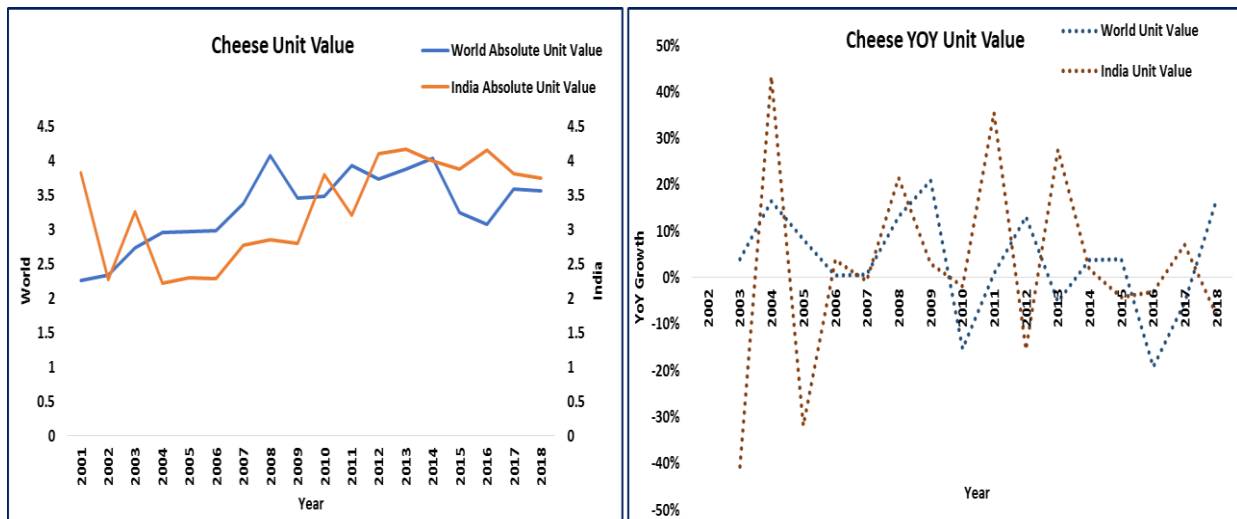


Figure 2. 20 Cheese (040610) exports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Import

The value and quantity of world as well India almost follows a similar pattern. In case of import, the YoY change in value and quantity of world has not increased or decreased substantially whereas, in case of India, the YoY change in value and quantity has fluctuated over the years (Figure 2. 21). The YoY change in quantity and value of India's 040610 import is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased.

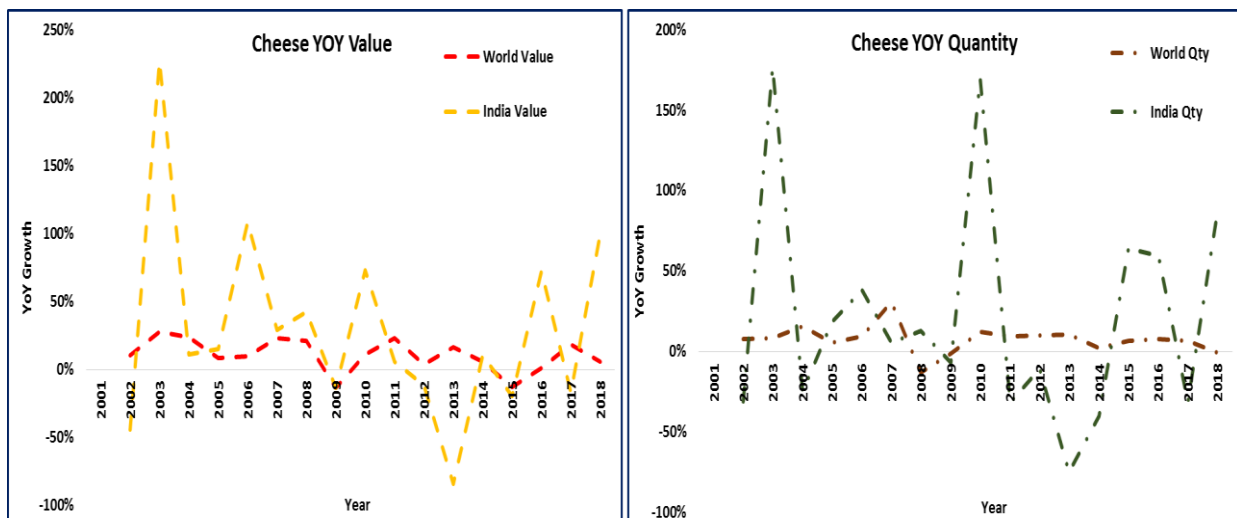


Figure 2. 21 Cheese (040610) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of world and India both increased from 2017-18. In 2017, there was rise in both world and India cheese imports by 11.23%, 20.71% respectively and in 2018, there was a decline in both world and India cheese imports by 6.48%, 7.28% respectively (Figure 2. 22). The YoY growth in unit value of world and India cheese imports increased in 2003, 2008, 2011 and in 2016-2017 while the YoY growth in unit value of world and India cheese imports declined in 2005, 2007, 2009, 2012, 2015 and in 2018.

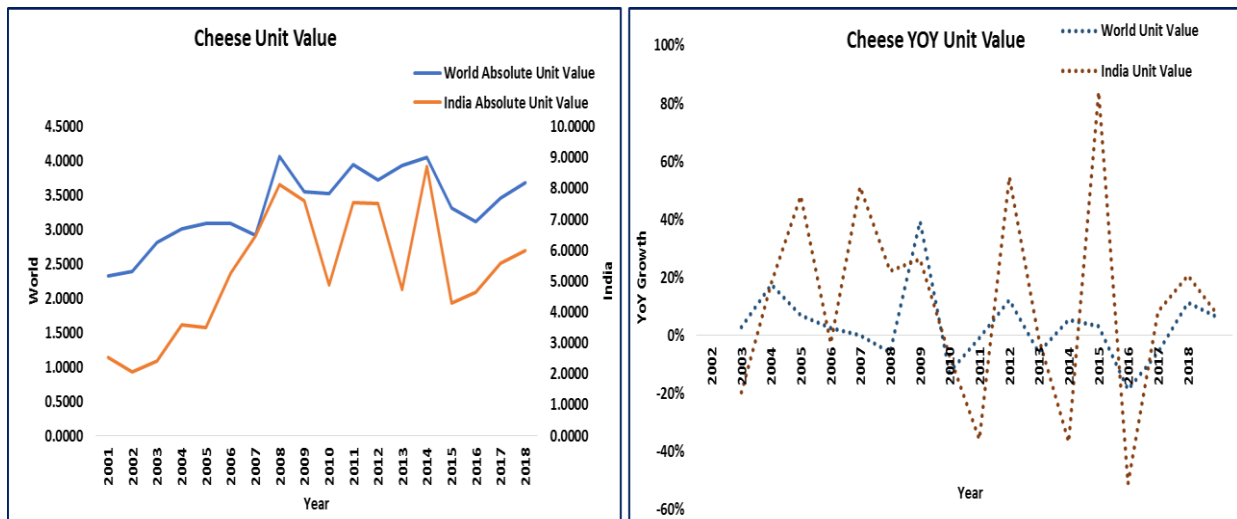


Figure 2. 22 Cheese (040610) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Cheese (040620)

#### Export

In case of export of 040620, the YoY change in quantity and value in case of world remain constant while the YoY change in quantity and value of India's is following a similar pattern i.e. whenever the YoY change in quantity has increased the value has also increased (Figure 2. 23). While exporting 040620, the India's YoY change in value and quantity is following the world pattern. However, there are certain intermittent peaks observed when the YoY change in India is more than the YoY change for the world export in terms of quantity and value.

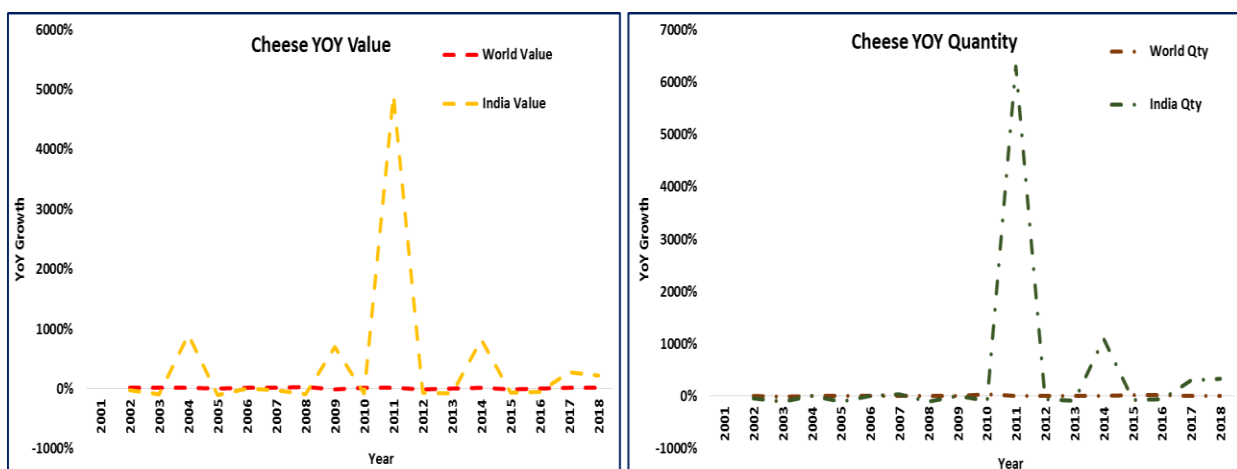


Figure 2. 23 Cheese (040620) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of 040620 of world increased from 5.07 to 5.23 USD Thousand in 2018 and India's export unit value decreased from 6.81 to 5.05 USD Thousand in 2018 (Figure 2. 24). In 2017, unit value of world cheese exports rises by 8.91% and India declined by -6.03%. In 2018, the unit value of world cheese exports and India cheese exports decline by 3.15% and -25.77% and respectively. The YoY growth in unit value of world and India cheese exports increased in only 2013 while the YoY growth in unit value of world and India cheese exports declined in 2014 and in 2018.

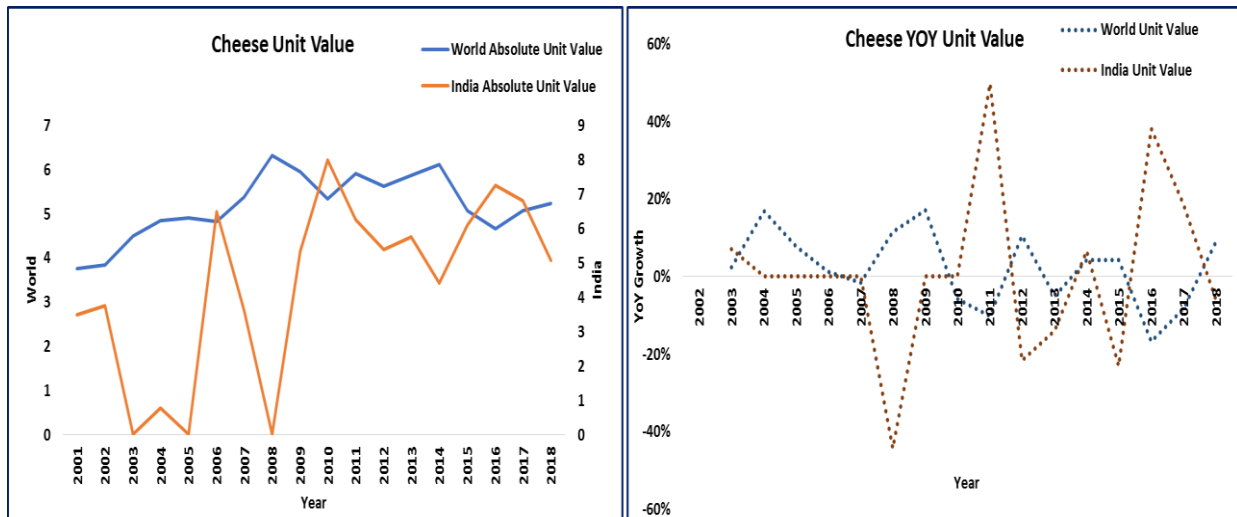


Figure 2. 24 Cheese (040620) exports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Import

Import of 040620, the YoY change in quantity and value in case of world remain similar to each other whereas the YoY change in quantity and value of India's is also following a similar pattern i.e. whenever the YoY change in quantity has increased the value has also increased (Figure 2. 25).

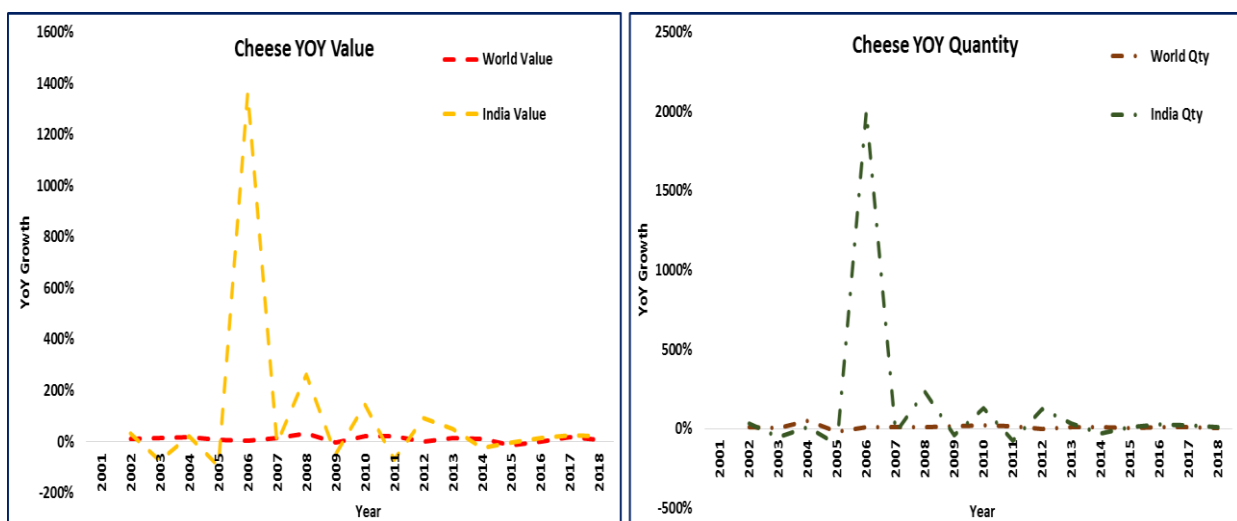


Figure 2. 25 Cheese (040620) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of world and India increased from 5.05 to 5.18 USD thousand and 4.67 to 5.73 USD thousand in 2018 respectively (Figure 2. 26). In 2017, there was rise in both world and India cheese imports by 8.18%, 5.65% respectively and in 2018, there was a decline in world by 2.51% and India cheese imports increased by 10.82%. The YoY growth in unit value of world and India cheese imports increased in 2005, 2007, 2010-2011, 2013 and in 2016-2017 while the YoY growth in unit value of world and India cheese imports declined in 2006, 2009, 2012, and in 2015.

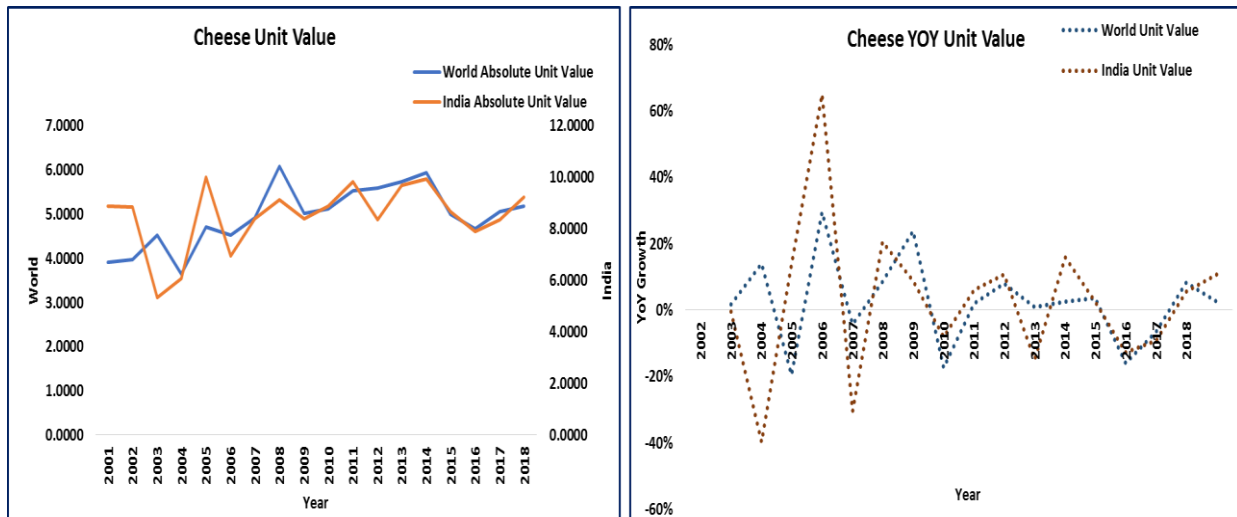


Figure 2. 26 Cheese (040620) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Cheese (040630)

#### Export

The YoY change in quantity and value in case of world export remain similar while the YoY change in quantity and value of India's 040630 export is also following a similar pattern i.e. Whenever the YoY change in quantity has increased the value has also increased. While exporting 040630, the India's YoY change in value and quantity is following the world pattern. However, there are certain intermittent peaks observed when the YoY change in India is more than the YoY change for the world export in terms of quantity and value (Figure 2. 27).



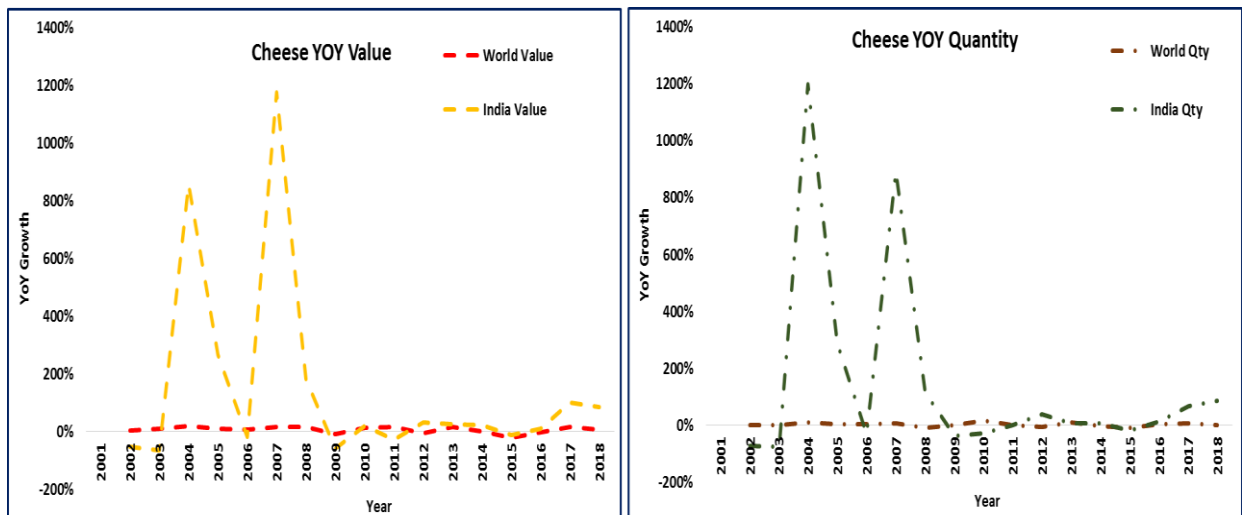


Figure 2. 27 Cheese (040630) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The absolute unit value of world and India both increased in 2017-18. In 2017, unit value of world cheese exports and India rise by 7.53% and 20.27% respectively. In 2018, the unit value of world cheese exports and India cheese exports decline by 4.90% and -1.42% and respectively. The YoY growth in unit value of world and India cheese exports increased in 2007-08, 2010, 2013 and in 2017 while the YoY growth in unit value of world and India cheese exports declined in 2004, 2009, 2012, 2015 and in 2018 (Figure 2. 28).

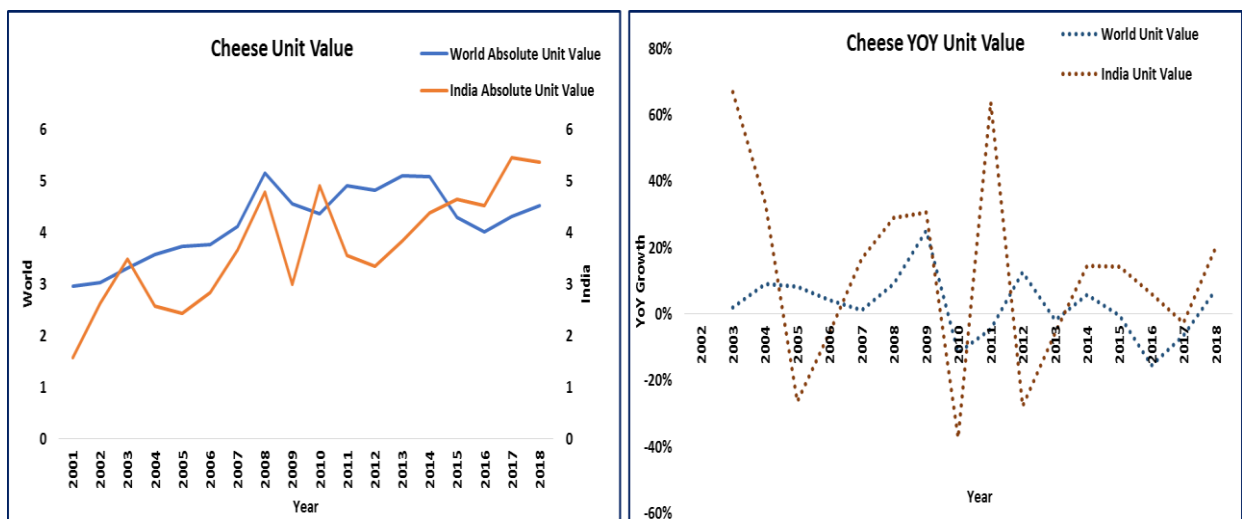


Figure 2. 28 Cheese (040630) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Import

In case of import, the YoY change in value and quantity of world has not increased or decreased substantially whereas, in case of India, the YoY change in value and quantity has fluctuated over the years

(Figure 2. 29). The YoY change in quantity and value of India's 040630 import is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased.

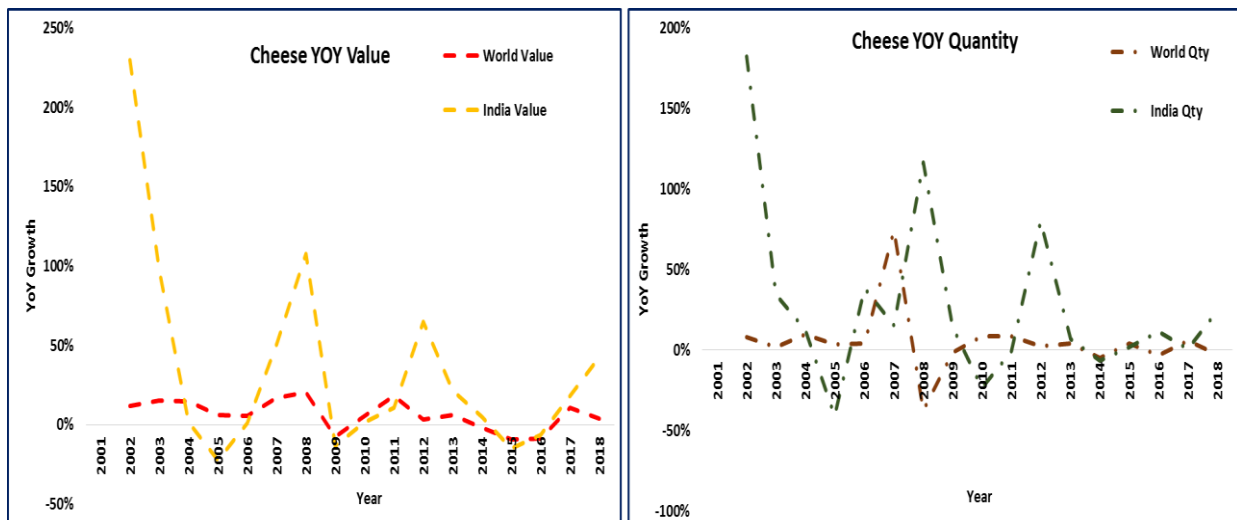


Figure 2. 29 Cheese (040630) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The absolute unit value of world and India both increased in 2017-18. In 2017, there was rise in both world and India cheese imports by 4.69%, 17.31% respectively and in 2018, there was a increase in world by 6.84% and India cheese imports decline by 14.51%. The YoY growth in unit value of world and India cheese imports increased in 2003, 2010, 2013 and 2017 while the YoY growth in unit value of world and India cheese imports declined in 2004, 2006, 2009, 2012, and in 2015 (Figure 2. 30).

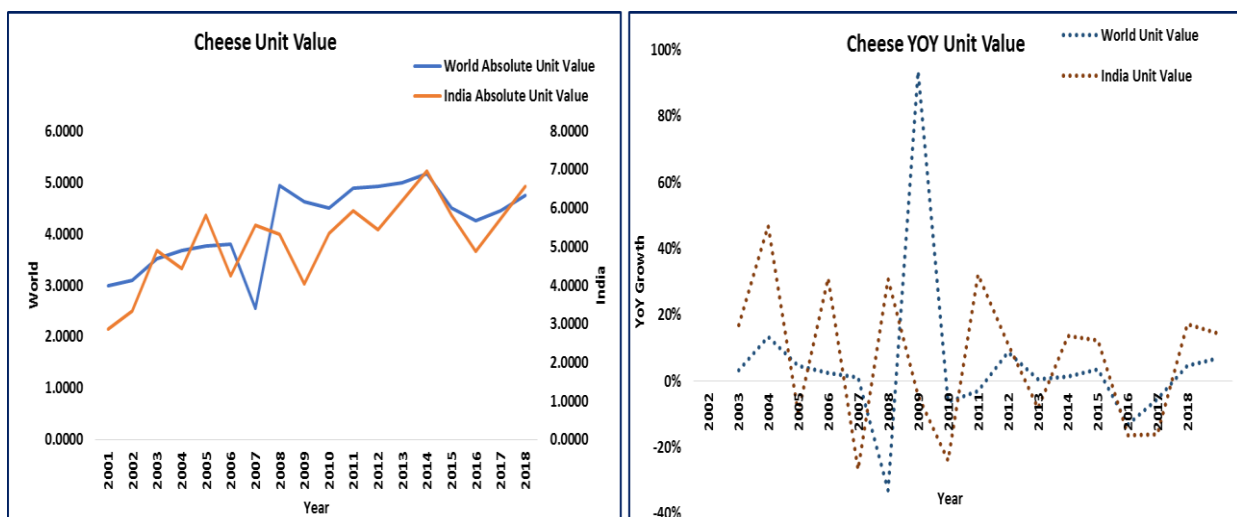


Figure 2. 30 Cheese (040630) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

## Cheese (040640)

### Export

In case of export, the YoY change in quantity and value in case of world export there is no substantial changes in the trend. India's YoY change in terms of value and quantity is inversely related to YoY change in value and quantity of World's export. The inverse pattern has benefitted India or not in case of 040640 is subjected to further analysis. India's trend in terms of YoY changes in exported value and quality remains unchanged during 2004-07 and 2012-18 due to inactive exports in this specific cheese category.

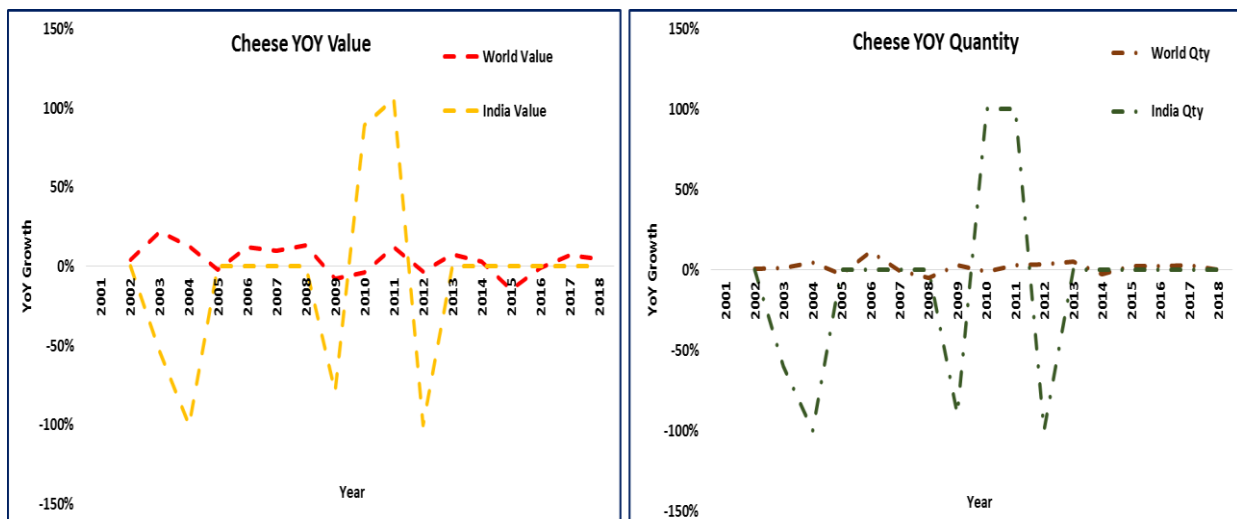


Figure 2. 31 Cheese (040640) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2018, there was a slight increase in unit value of world cheese exports by 4.59 from previous year while India show a continuous stagnant growth. The YoY growth in unit value of both world and India cheese exports increased in 2011 (Figure 2. 32). India's trend in terms of Export Unit value remains zero during 2004-07 and 2012-18 due to inactive exports in this specific cheese category. Ill effects of infrequent supply of dairy products will be further analysed in the upcoming chapters.

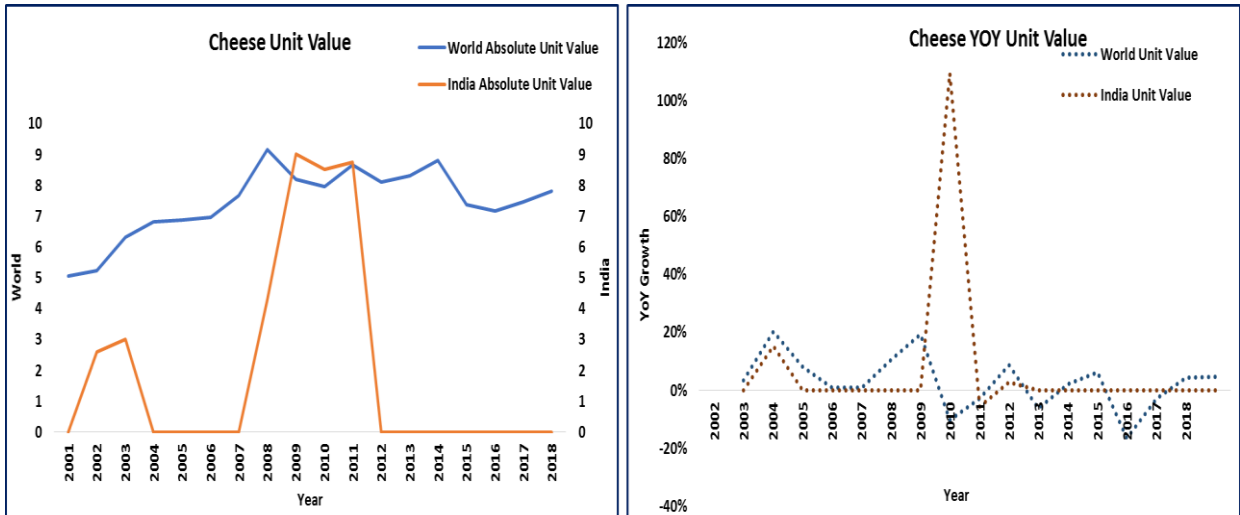


Figure 2. 32 Cheese (040640) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

In case of import, the YoY change in value and quantity of world has not increased or decreased substantially while, in case of India, the YoY change in value and quantity has fluctuated over the years (Figure 2. 33). The YoY change in quantity and value of India's 040640 import is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased.

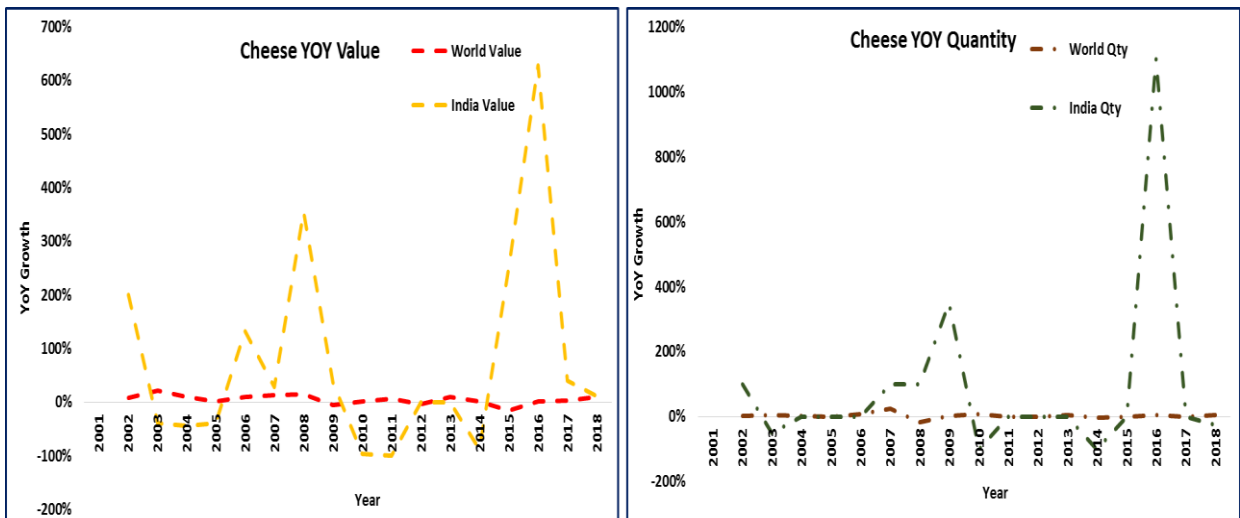


Figure 2. 33 Cheese (040640) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

There was a slight decline in world by 5.09% and India cheese imports increased by 48.36% in the year 2018. The YoY growth in unit value of world and India cheese imports increased in 2006, 2008 and 2017 while the YoY growth in unit value of world and India cheese imports declined in 2004, 2007 and 2009 (Figure 2. 34).

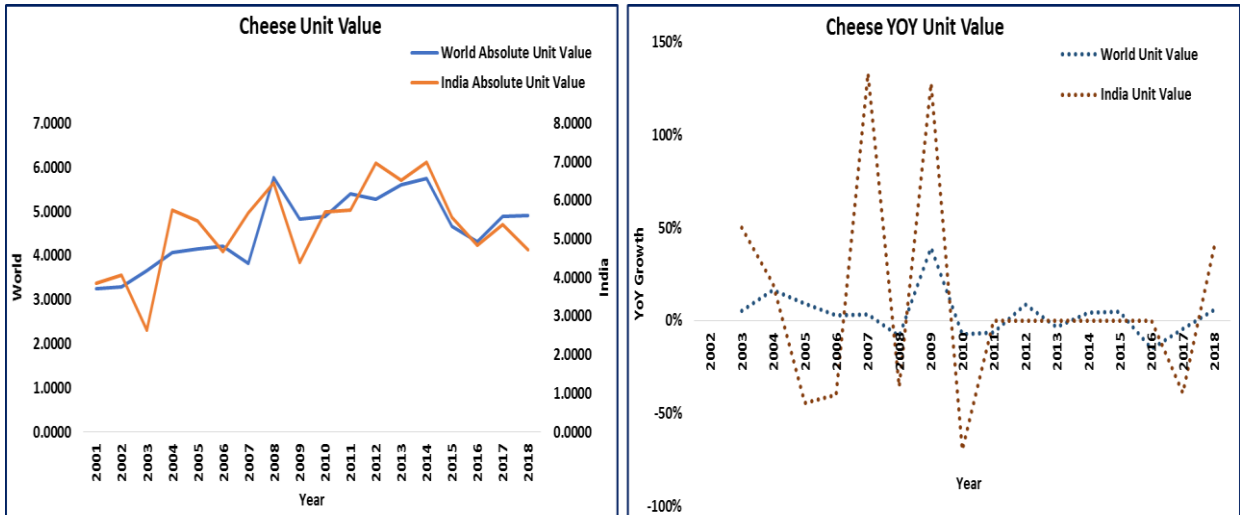


Figure 2. 34 Cheese (040640) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Cheese (040690)

#### Export

The YoY change in quantity in case of world export remain constant whereas fluctuations in YoY change in export value is observed (Figure 2. 35). This indicates that the price of 040690 at the world level is not consistent. The YoY change in export value of 040690 from India has tried to follow the world pattern, however the YoY change in export quantity is not following the world pattern.

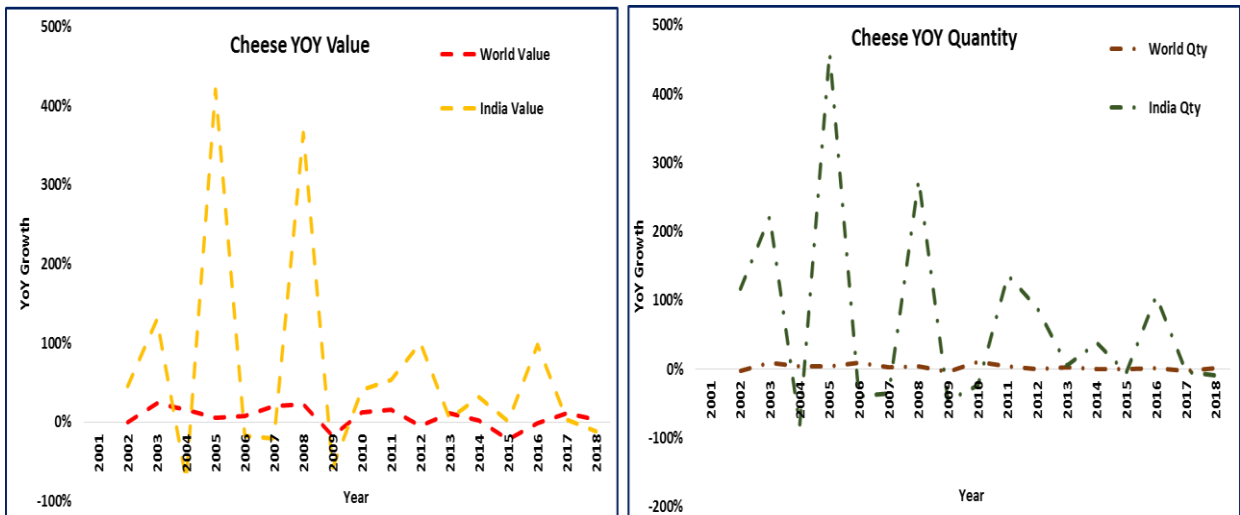


Figure 2. 35 Cheese (040690) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2018, the unit value of world cheese exports and India cheese exports decline by 1.59% and -2.70% and respectively. The YoY growth in unit value of world and India cheese exports increased in 2010 and in 2017 while the YoY growth in unit value of world and India cheese exports declined in 2005, 2009, 2014 and in 2018 (Figure 2. 36).

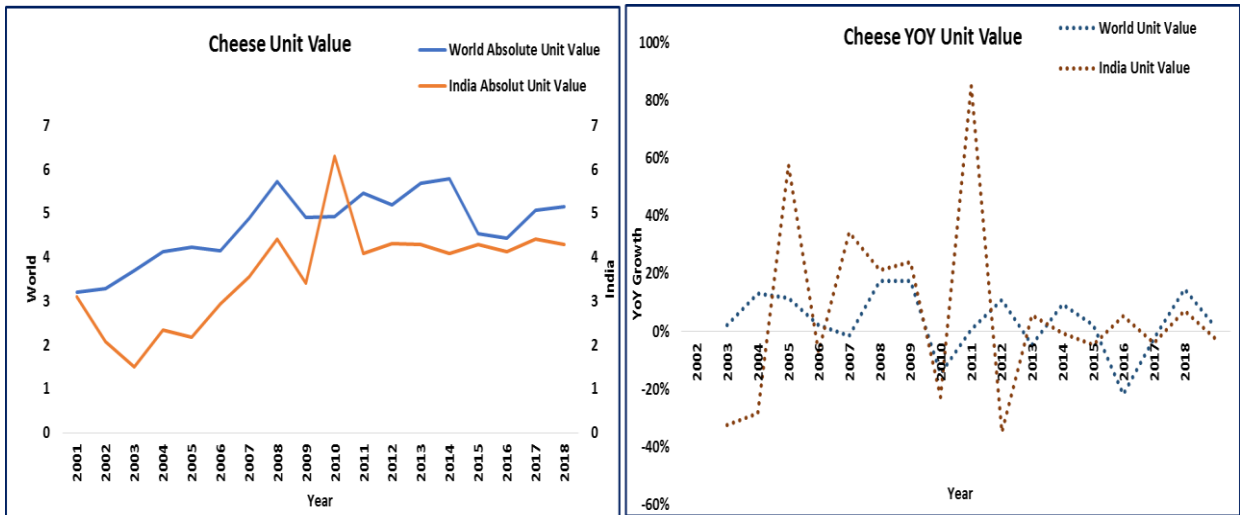


Figure 2.36 Cheese (040690) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

In case of imports of 040690, the YoY change in value and quantity of world has not increased or decreased substantially whereas, in case of India, the YoY change in value and quantity has fluctuated over the years. The YoY change in quantity and value of India's 040690 import is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased (Figure 2.37).

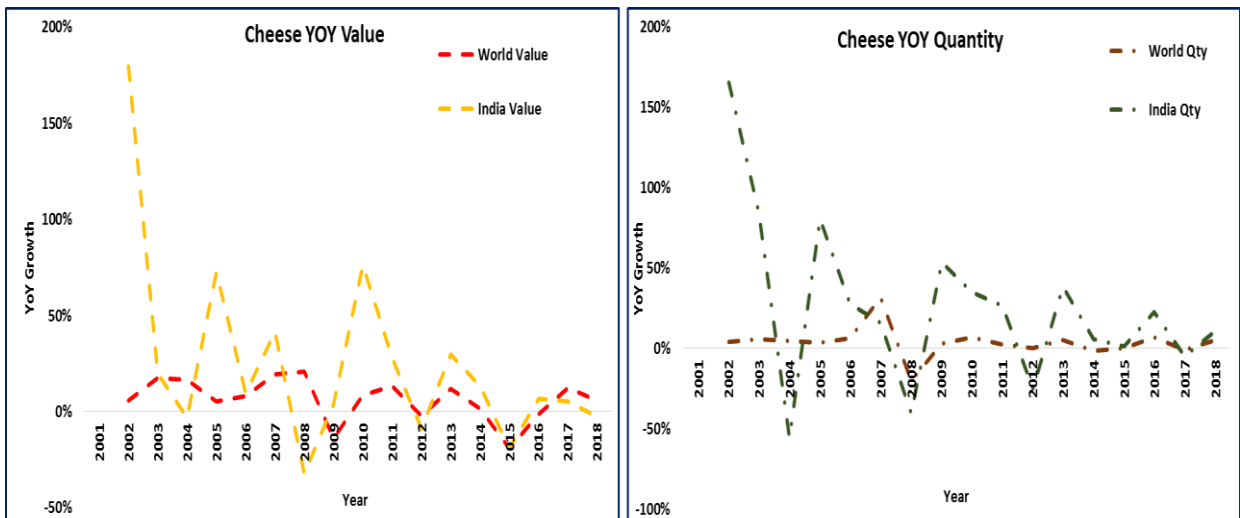


Figure 2.37 Cheese (040690) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2016-2017, there was rise in both world and India cheese imports while in 2018, there was a decline in world and India cheese imports by 0.14% and -12.14% respectively. The YoY growth in unit value of world and India cheese imports increased in 2004, 2010, 2016-17 while the YoY growth in unit value of world and India cheese imports declined in 2005-06, 2009, 2015, and in 2018 (Figure 2.38).

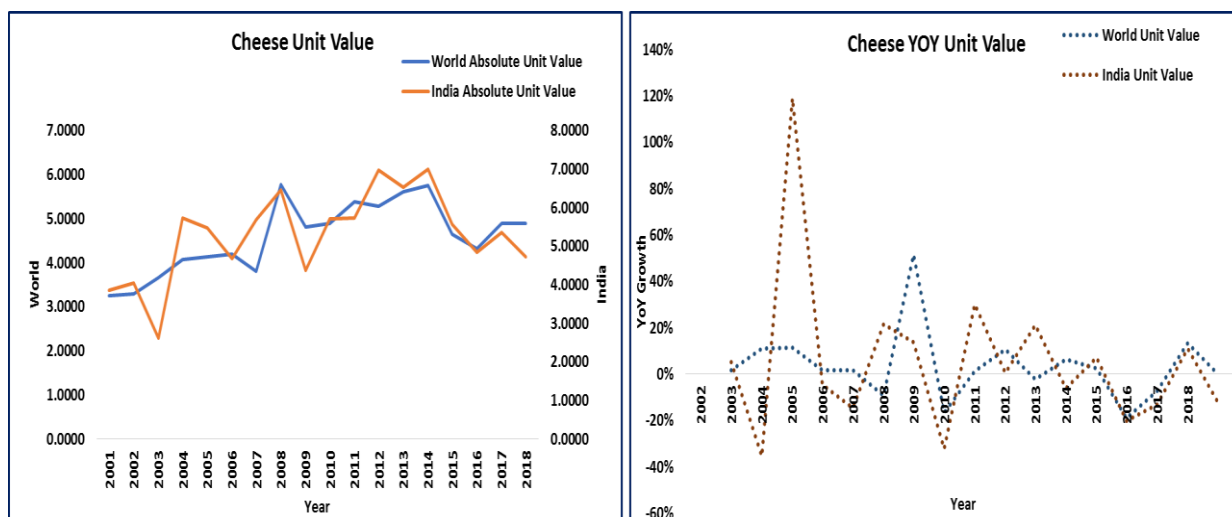


Figure 2.38 Cheese (040690) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Cheese Price Trends

According to OECD- FAO reports (2001-2018), In 2004, there was increase in prices of cheese partly due to the adverse weather conditions in Oceania, mainly the dairy product exporting regions that affected the milk production. Growing population and increased milk consumption resulted in increase of cheese prices in 2007 out of all dairy products. Similarly, after the global economic crisis, there was increase in demand in 2010 that lead to higher prices. In 2015, the ongoing Russian Federation import ban continues to affect the cheese exports from EU, US and Australia. In 2016-17, draught and adverse weather restricted production in Oceania pasture-based system reduced the production in New Zealand and Australia. Thereby increase in cheese prices.

### Bulk and Pack Milk

Bulk and Pack milk is represented by two codes; 040110 and 040120. We have analysed both the codes separately. 040110 is Milk and cream of a fat content by weight of less than 1% not concentrated nor containing added sugar and 040120 is Milk and cream of a fat content by weight of more than 1% and less than 6% not concentrated nor containing added sugar.

#### Bulk and Pack Milk (040110)

##### Exports

For 040110, the YoY change in quantity in case of world export remain constant whereas fluctuations in YoY change in export value is observed. This indicates that the price of 040110 at the world level is not consistent. The YoY change in export value of 040110 from India has tried to follow the world pattern post-2005, however the YoY change in export quantity is not following the world pattern. This also

depicts that the price of 040110 at which India is exporting is not in sync with the World Price. A further analysis of unit price is given in the next section (Figure 2. 39).

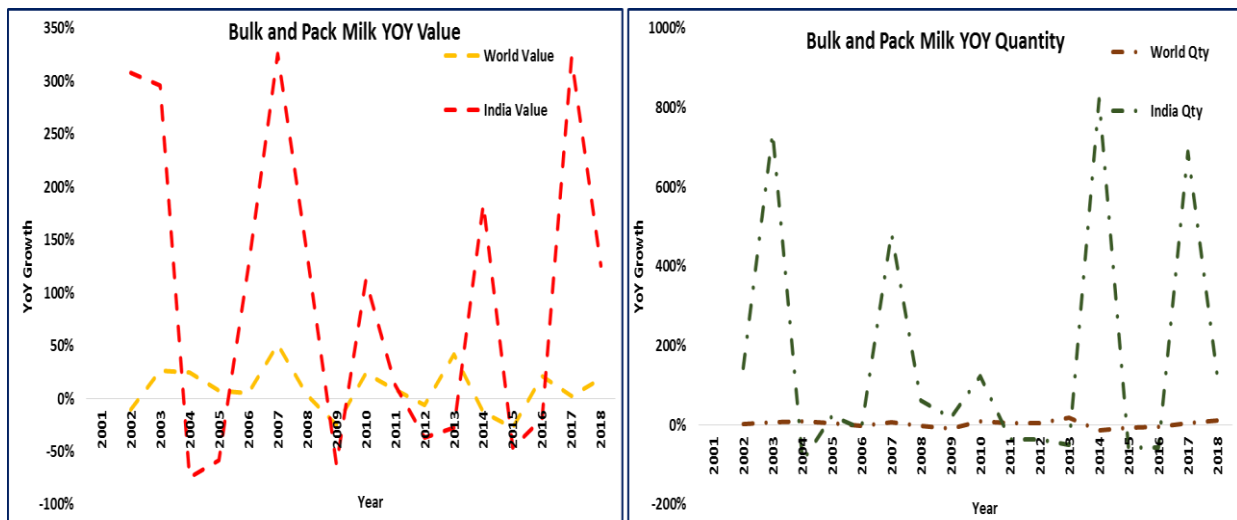


Figure 2. 39 Bulk and Pack Milk (040110) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

There is a slight increase in unit value of both world and India in 2018. The YoY growth in unit value of world and India bulk and pack milk exports declined in 2017 by -2.15% and -46.62% respectively while in 2018 it increased by 7.22% and in India by 5.95%. In 2010, 2013, 2016 and 2018 there was a rise in exports of bulk and pack milk both in world and in case of India. Also, in 2009, 2012, 2014 and 2017 there was a decline in exports of bulk and pack milk in world and in India (Figure 2. 40).

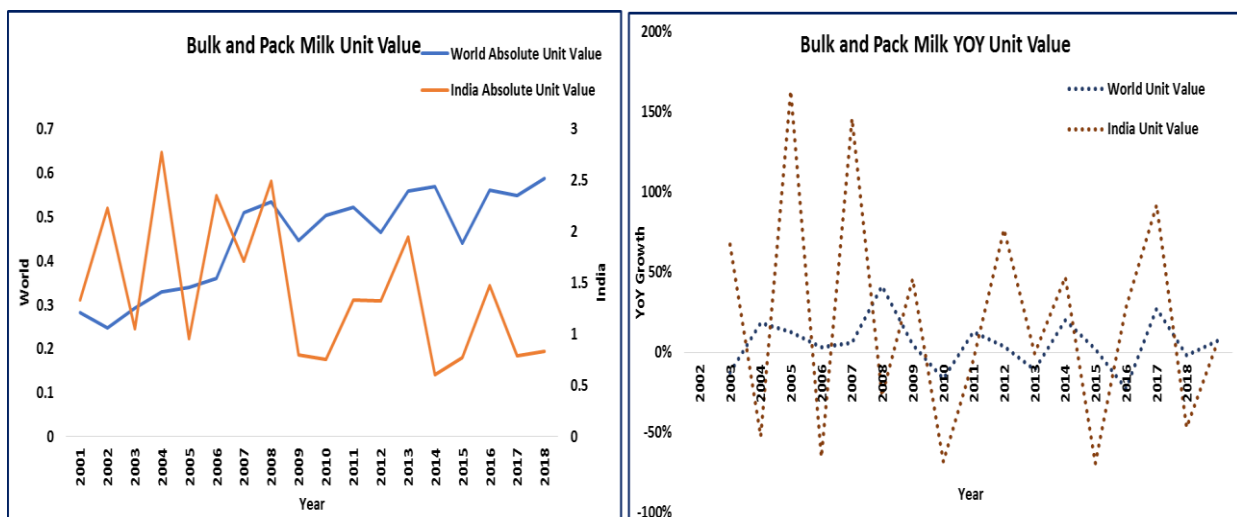


Figure 2. 40 Bulk and Pack Milk (040110) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva



## Import

In case of Import of 040110, India's YoY change in terms of value and quantity is inversely related to YoY change in value and quantity of World's export. The inverse pattern has benefitted India or not in case of 040110 is subjected to further analysis (Figure 2. 41).

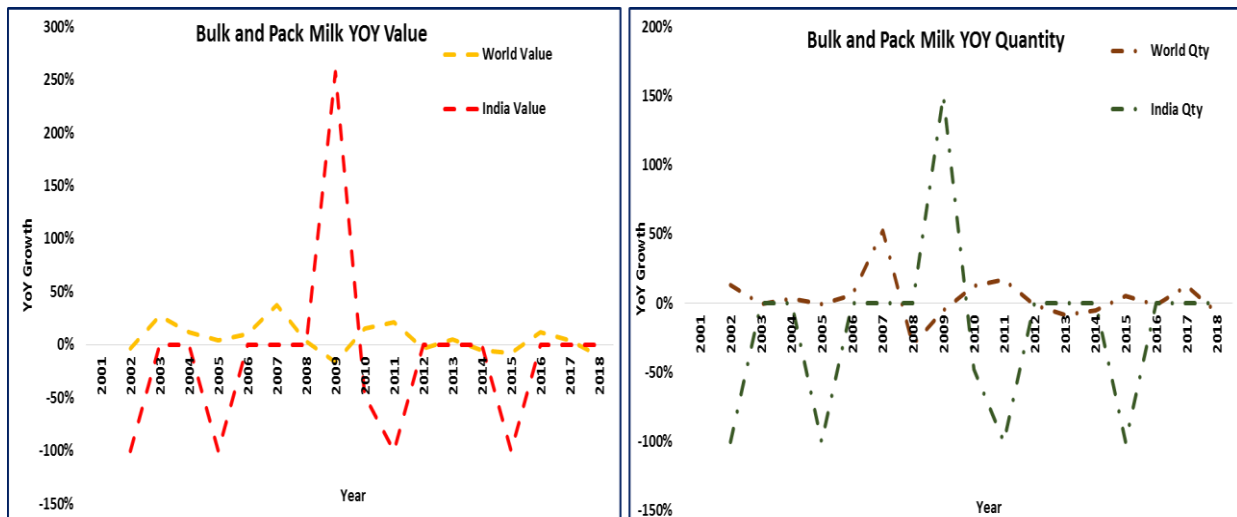


Figure 2. 41 Bulk and pack milk (040110) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The bulk and pack milk YoY unit value of India is not in line with world. The unit value of world declined in 2002, 2007, 2009, 2012, and 2015, 2017-18 (Figure 2. 42).

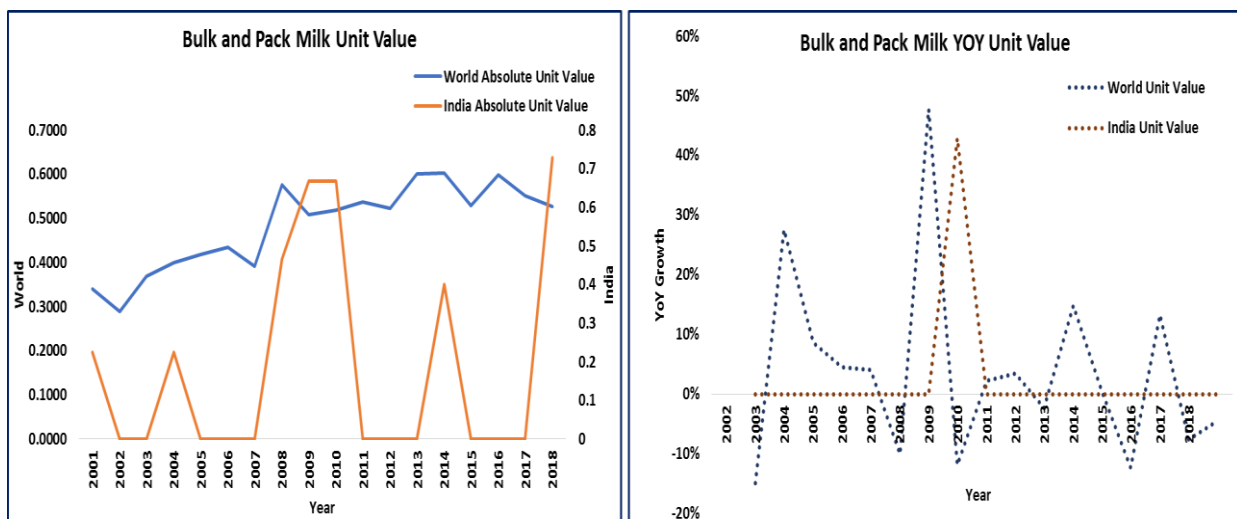


Figure 2. 42 Bulk and pack milk (040120) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

## Bulk and Pack Milk (040120)

### Exports

The YoY value and YoY quantity of world exports shows a similar pattern as well as value and quantity of India also shows a related pattern. If we consider the Bulk and Pack Milk (040120) export value or quantity from India, it is perfectly following the world trend except during the period of 2006. India strictly followed the World Trends with no noticeable leaps above world trends in these years (Figure 2. 43).

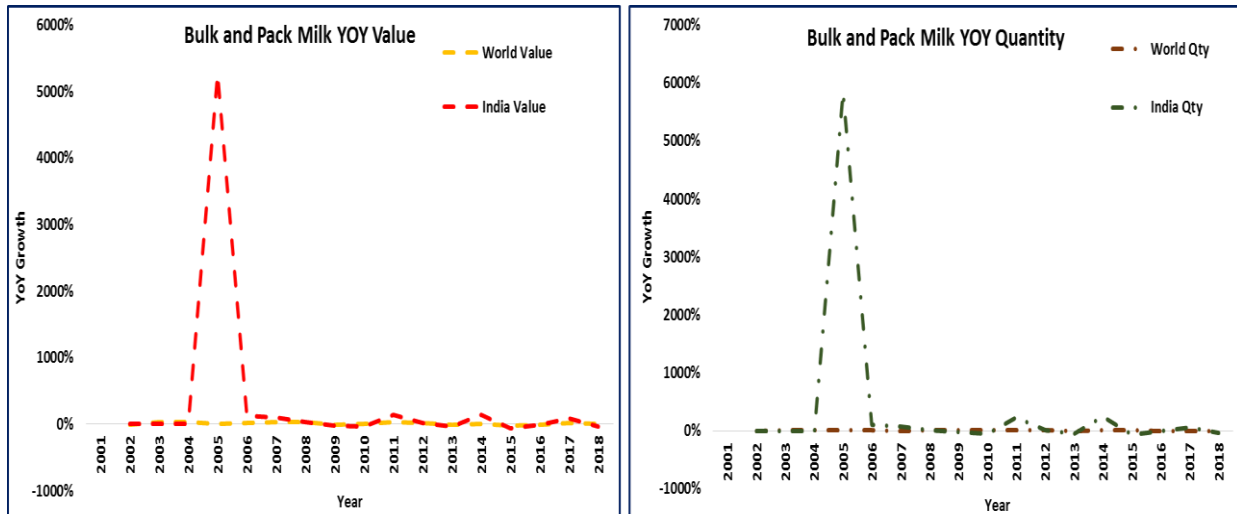


Figure 2. 43 Bulk and pack milk (040120) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India bulk and pack milk exports rise in 2016 by -4.94% from previous year and in 2017 by 19.08% but in 2018 it declined by 8.76% while in India, in 2016 it decreased by -11.35% from previous year, increased in 2017 by 19.70% but again declined in 2018 by -1.62%. In 2007, 2010 and 2017 there was a rise in exports of bulk and pack milk both in world and in case of India. Also, in 2008 and 2016 there was a decline in exports of bulk and pack milk in world and in India (Figure 2. 44).

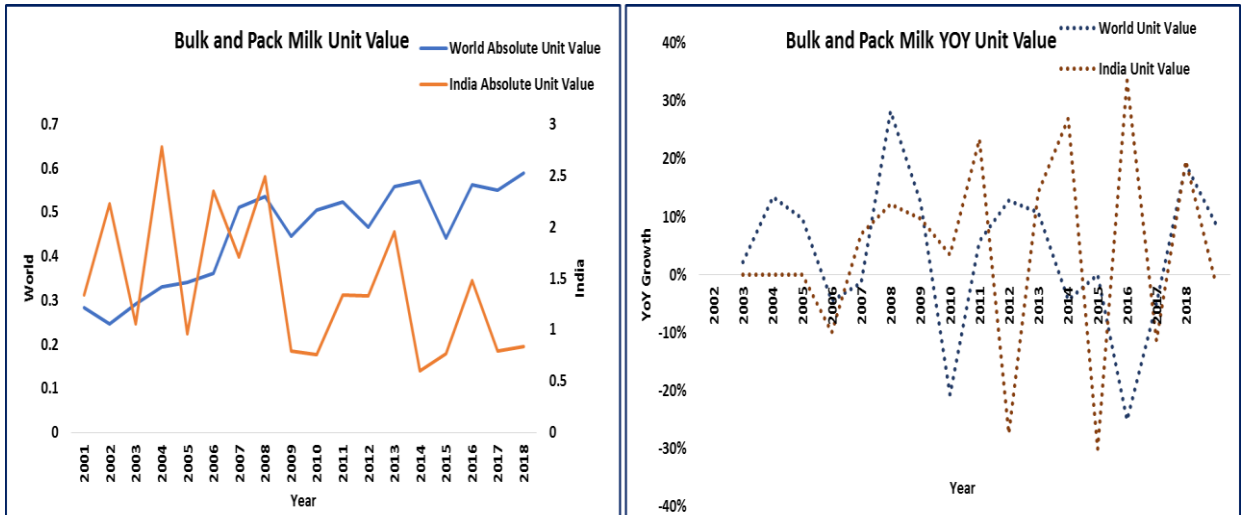


Figure 2.44 Bulk and pack milk (040120) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

In case of import of 040120, it can be observed that, a slightest change in Import value of Bulk and Pack Milk (040120) in the world is creating a much larger change in India's total value imported. It is also observed that during 2016 India's growth of imports didn't changes in par with changes in the global markets (Figure 2.45).

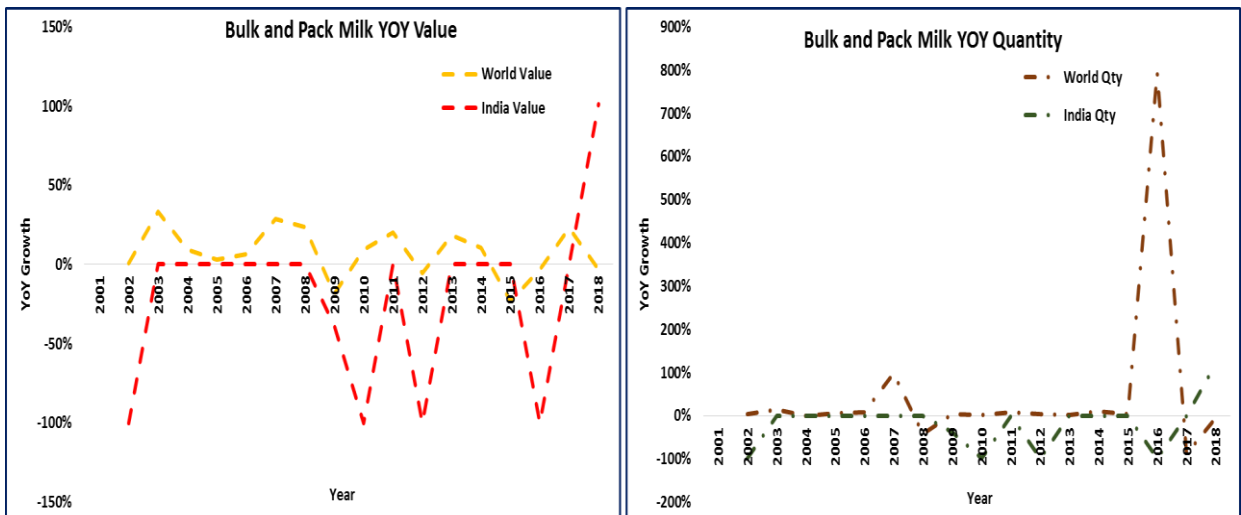


Figure 2.45 Bulk and Pack Milk (040120) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The bulk and pack milk (040120) unit value of world increase in 2017-18. However, the unit value of world and India is not similar to each other (Figure 2.46).

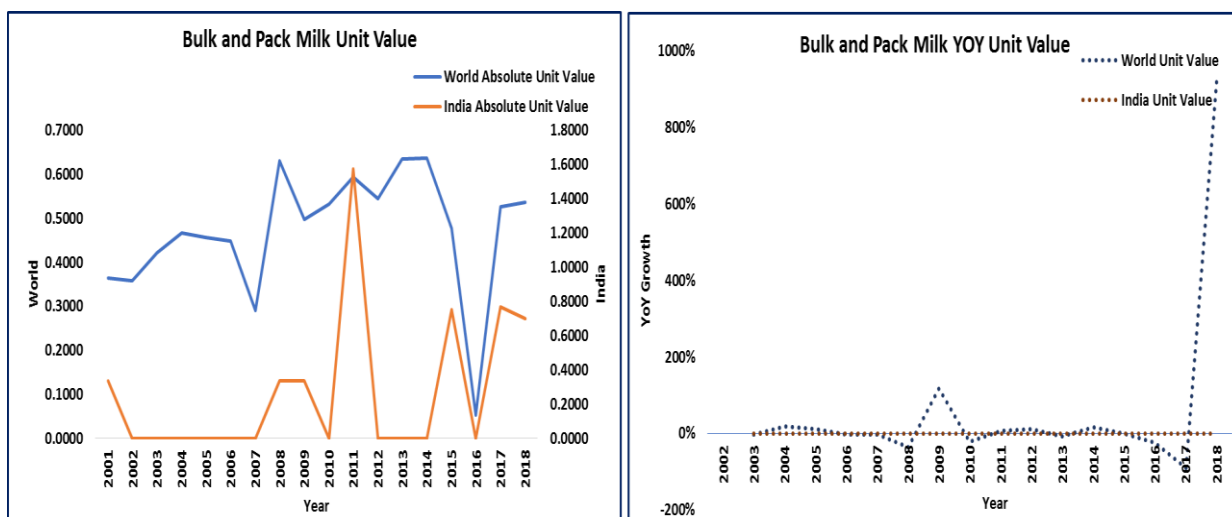


Figure 2. 46 Bulk and pack milk (040120) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Bulk and Pack Milk Price Trends

According to OECD- FAO reports (2001-2018), in 2002, the bulk and pack milk prices were lower due to increase in its supply. In 2008 there was decline in the prices due to global economic crisis while the effect of crisis was seen in 2009 but in 2010 there was increase in the prices as after crisis the market stabilizes and there was a recovery in demand. Increased global milk production and excellent pasture conditions in Oceania, South America generated a supply response triggering fall in the bulk and pack milk prices in 2012. In second half of 2013 and early 2014, there was higher bulk and pack milk prices due to continuous strong demand on world market dairy prices. Similarly, in 2016 end, there was increase in prices of bulk and pack milk due to reduced production in New Zealand and Australia.

### Whey Powder

Whey powder has two codes: 040410 and 040490. 040410 is whey and modified whey, whether or not concentrated or containing added sugar or other sweetening matter. 040490 is products consisting of natural milk constituents, whether or not sweetened, n.e.s.

#### Whey Powder (040410)

##### Exports

In case of export of 040410, the YoY change in quantity and value in case of world remain constant while the YoY change in quantity and value of India's is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased (Figure 2. 47).

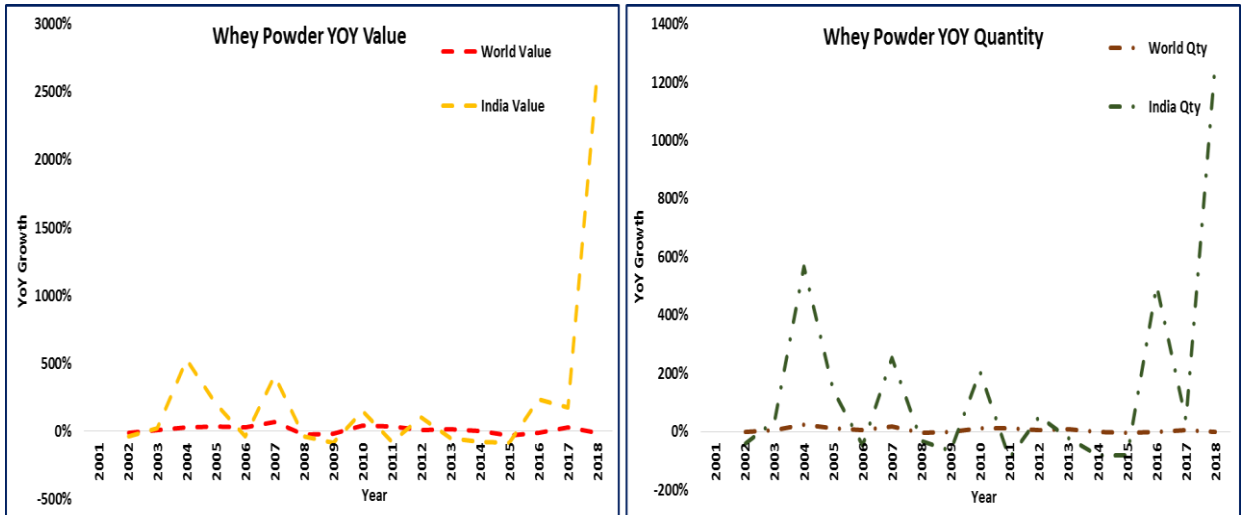


Figure 2. 47 Whey powder (040410) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world whey powder exports and India whey powder exports increased by 19.10% and 101.15% respectively while in 2018, the unit value of world and India whey powder exports decreased by -5.79% and 100.30%. The YoY growth in unit value of world and India whey powder exports increased in 2005, 2007, 2010 and in 2017 while the YoY growth in unit value of world and India whey powder exports declined in 2008, 2012, 2015 and in 2018 (Figure 2. 48).

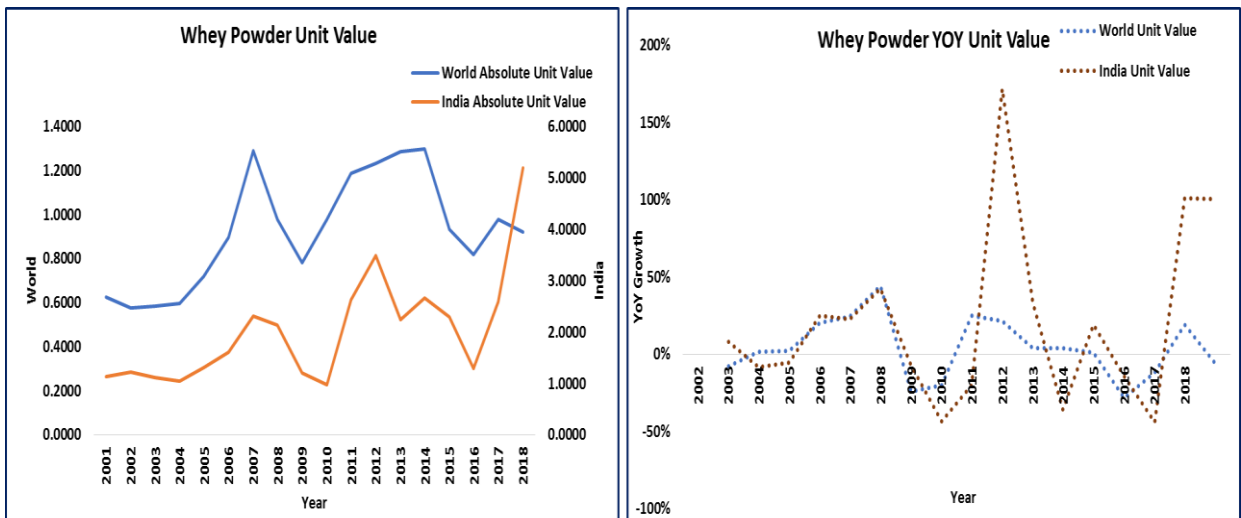


Figure 2. 48 Whey powder (040410) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

While importing 040410, in case of world, if there is 40% increase in quantity then the value is increased by 65-70% and in India the YoY change in quantity and value is following a similar pattern. India is trying to follow the world pattern both in case of exports and imports (Figure 2. 49).

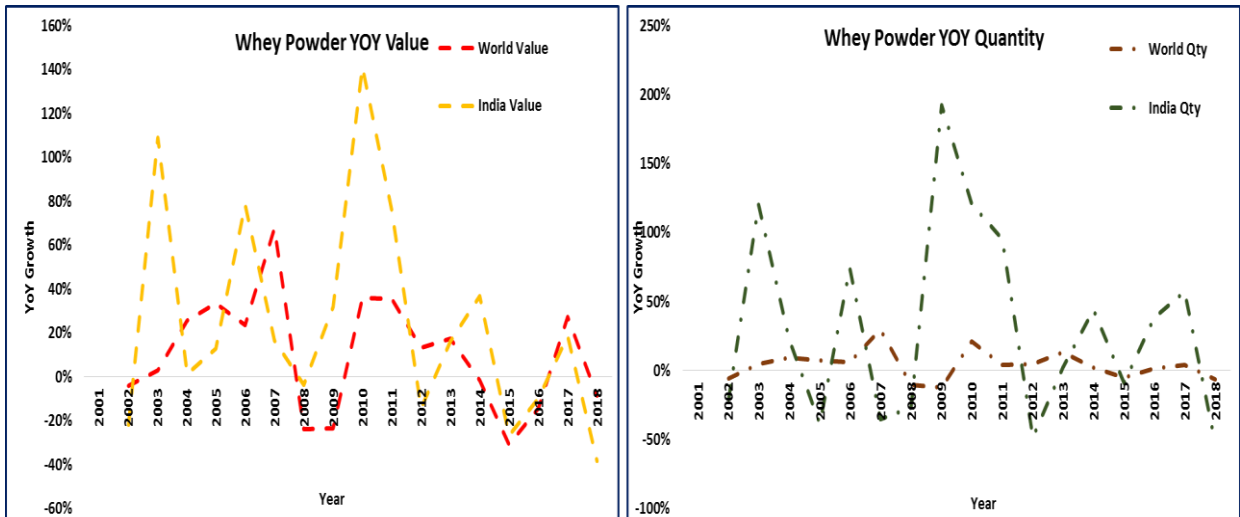


Figure 2. 49 Whey powder (040410) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The unit value of world whey powder imports decreased by -2.39% and India whey powder imports increased by -31.70% in 2018. The YoY growth in unit value of world and India whey powder imports increased in 2004, 2007, 2010 and in 2017 while the YoY growth in unit value of world and India whey powder imports declined in 2003, 2006 and a continuous decline in 2013-15 (Figure 2. 50).

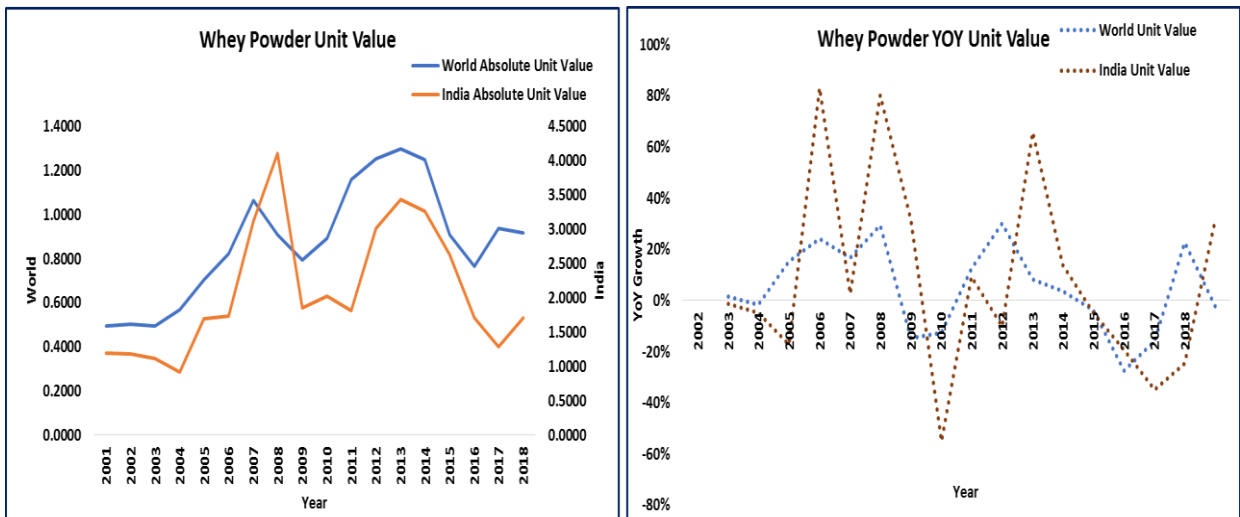


Figure 2. 50 Whey powder (040410) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Whey Powder (040490)

#### Exports

In case of export of 040490, the YoY change in quantity and value in case of world remain similar while the YoY change in quantity and value of India is also following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased. There are certain intermittent peaks

observed when the YoY change in India is more than the YoY change for the world export in terms of quantity and value (Figure 2. 51).

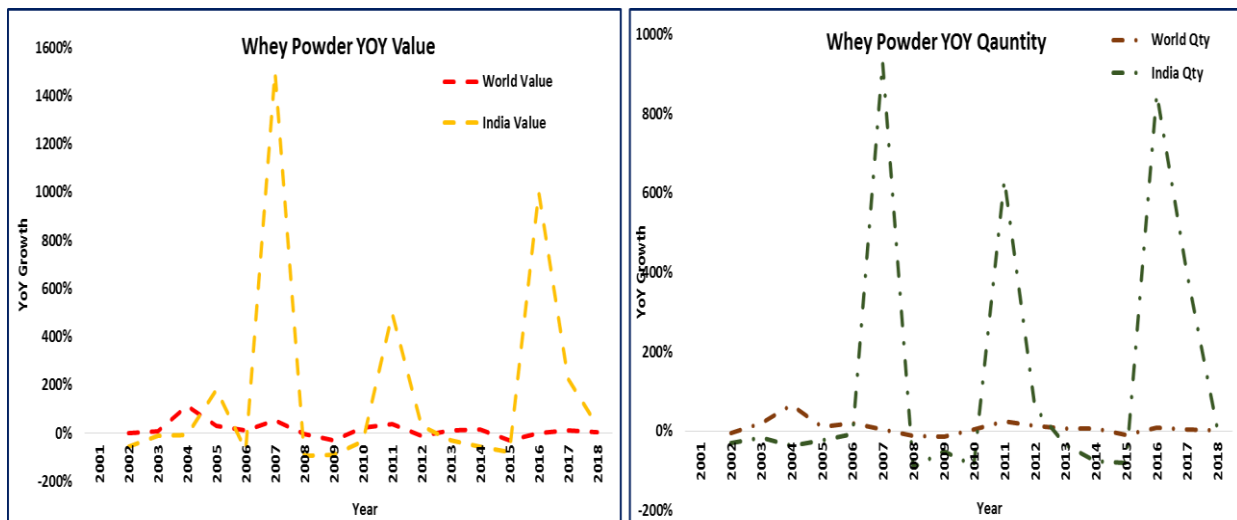


Figure 2. 51 Whey powder (040490) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world whey powder exports increased by 5.44% and India whey powder exports decreased by -35% while in 2018, the unit value of world whey powder exports decrease by 0.99% and India whey powder exports increased 22.34%. The YoY growth in unit value of world and India whey powder exports increased in 2004, 2007, 2010-11, 2014 and in 2016 while the YoY growth in unit value of world and India whey powder exports declined in 2006, 2008-09 and in 2015 (Figure 2. 52).

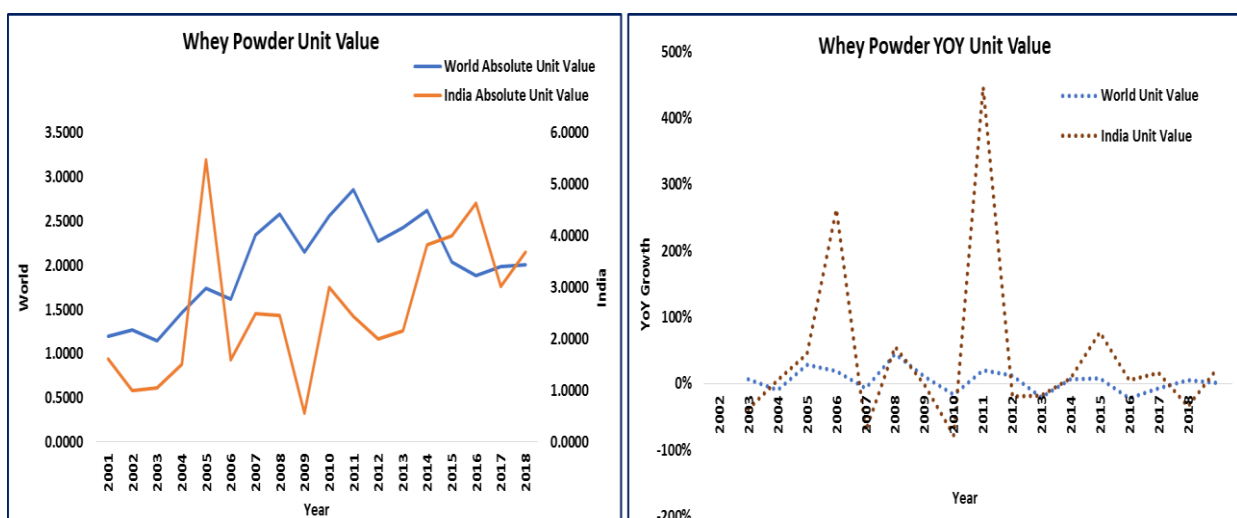


Figure 2. 52 Whey Powder (040490) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

## Imports

The YoY change in quantity and value in case of world remain similar while the YoY change in quantity and value of India is also following similar pattern (040490) i.e. whenever the YoY change in quantity has increased the value has also increased. While importing 040490, the India's YoY change in value and quantity is following the world pattern (Figure 2. 53).

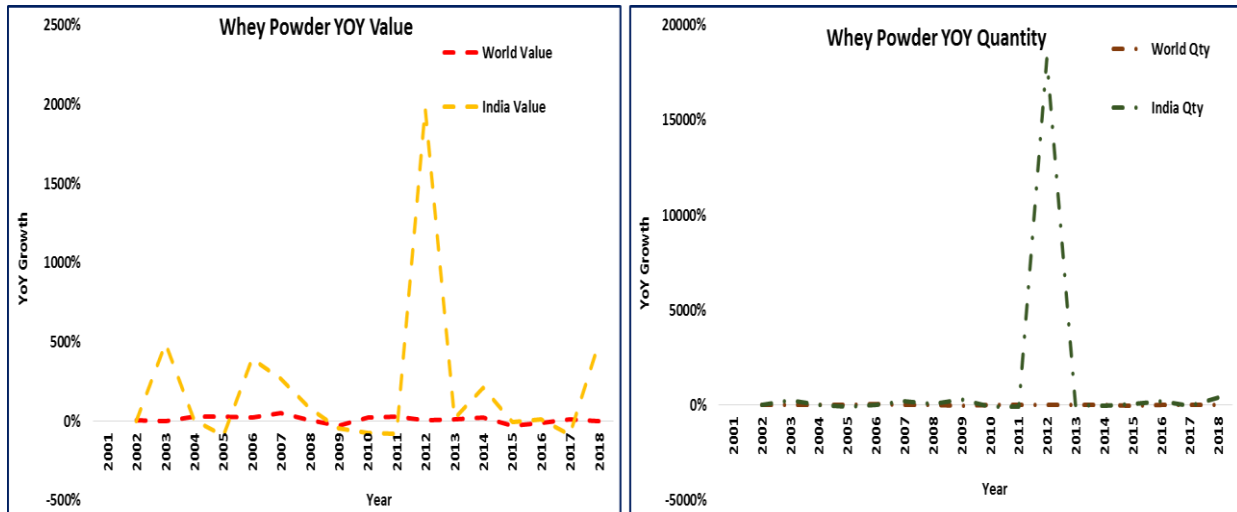


Figure 2. 53 Whey powder (040490) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world whey powder imports increased by -0.29% and India whey powder imports decreased by -68.65% while in 2018, the unit value of world whey powder imports and India whey powder imports increased by 1.10% and 22.14% respectively. The YoY growth in unit value of world and India whey powder imports increased in 2010, 2011, 2013 and 2018 while the YoY growth in unit value of world and India whey powder imports declined in 2005, 2009, 2012, 2015 and 2016 (Figure 2. 54).

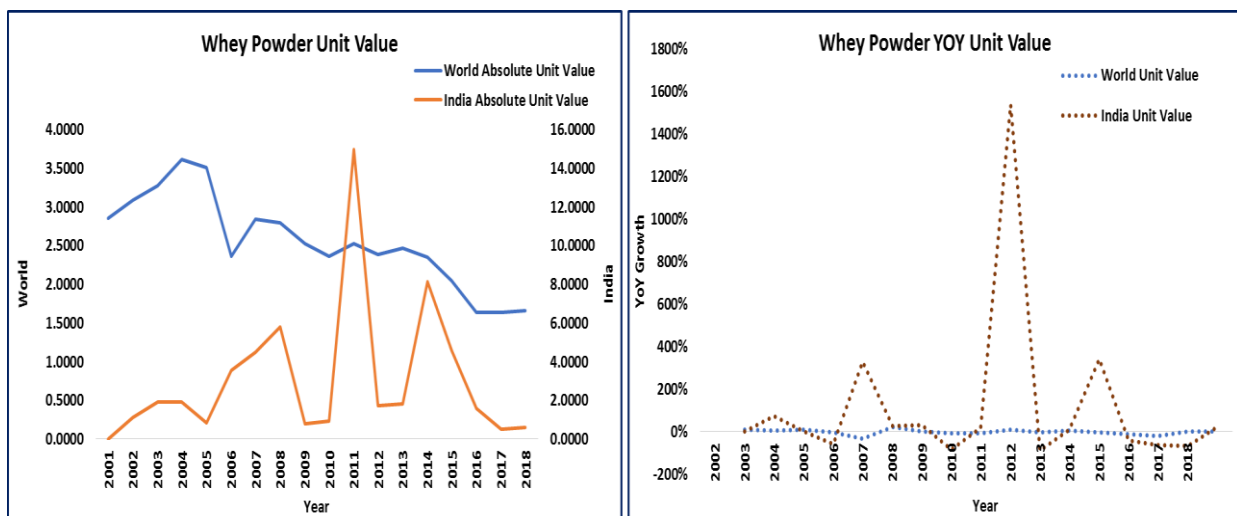


Figure 2. 54 Whey powder (040490) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva



### *Whey Powder Price Trends*

According to OECD- FAO reports (2001-2018), adverse weather conditions negatively affected the milk production in Oceania that resulted in increase in the prices of whey powder in 2004. In 2007, there was a growing population and consumption of dairy products that lead to increase in prices. 2008-09 witnessed decline in prices due to global economic crisis. In 2010, the whey powder prices were very high as after the crisis the market stabilized and there was increase in the demand. Conversely, there was decline in Whey powder prices in 2012 due to increased global milk production and in 2015 due to lower import demand from China and growing production in EU, US and Oceania. The prices were higher in 2017 due to the reduced milk production in end of 2016 and first quarter of 2017. Also, there was a strong demand of the fat solids.

### ***Cream***

Cream has 3 product codes; 040130, 040140 and 040150. 040130 is Milk and cream of a fat content by weight of > 6%, not concentrated nor containing added sugar, 040140 is Milk and cream of a fat content by weight of > 6% but <= 10%, not concentrated nor containing and 040150 is Milk and cream of a fat content by weight of > 10%, not concentrated nor containing added sugar.

### *Cream (040130)*

#### Exports

The YoY change in quantity and value of World's 040130 (fat content > 6%) export is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased. Likewise, India is also depicting an increase in YoY change in value with YoY change in quantity. If we compare India and the world, there is no uniformity in the change over the years in quantity and value exported. In case of quantity, India's YoY change in quantity is inversely related to the YoY change in World Quantity. In case of value, YoY change in value for India's export of 040130 depicts a lag with respect to the world (Figure 2. 55).

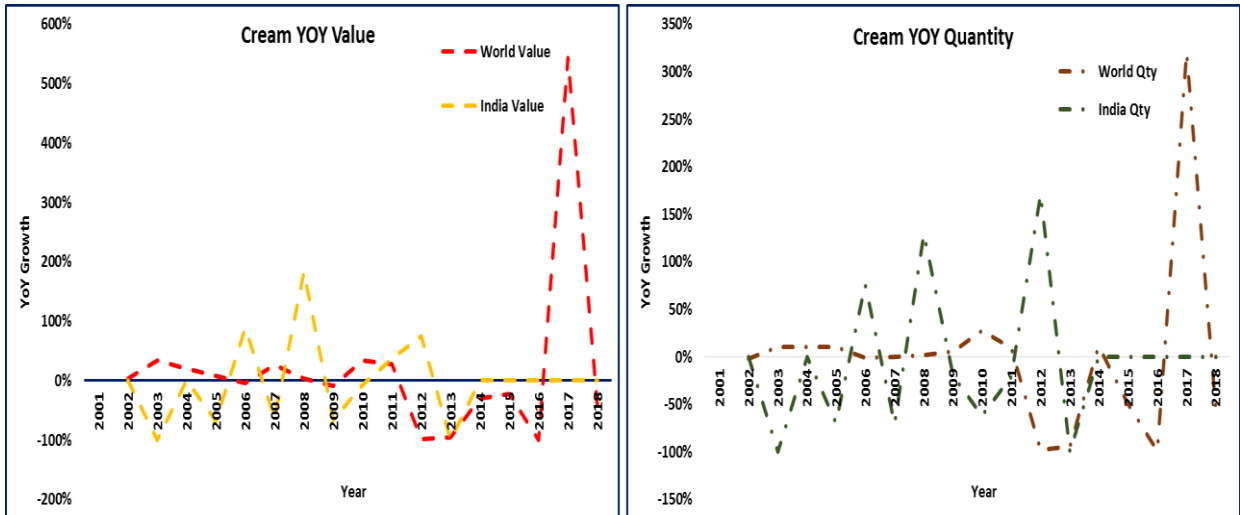


Figure 2. 55 Cream (040130) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India cream exports increased in years 2007 and by 26.81%, 22.85% respectively and in 2010 by 5.01% and 142.76% respectively. However, imports unit value of both world and India declined in 2009 and 2012 (Figure 2. 56).

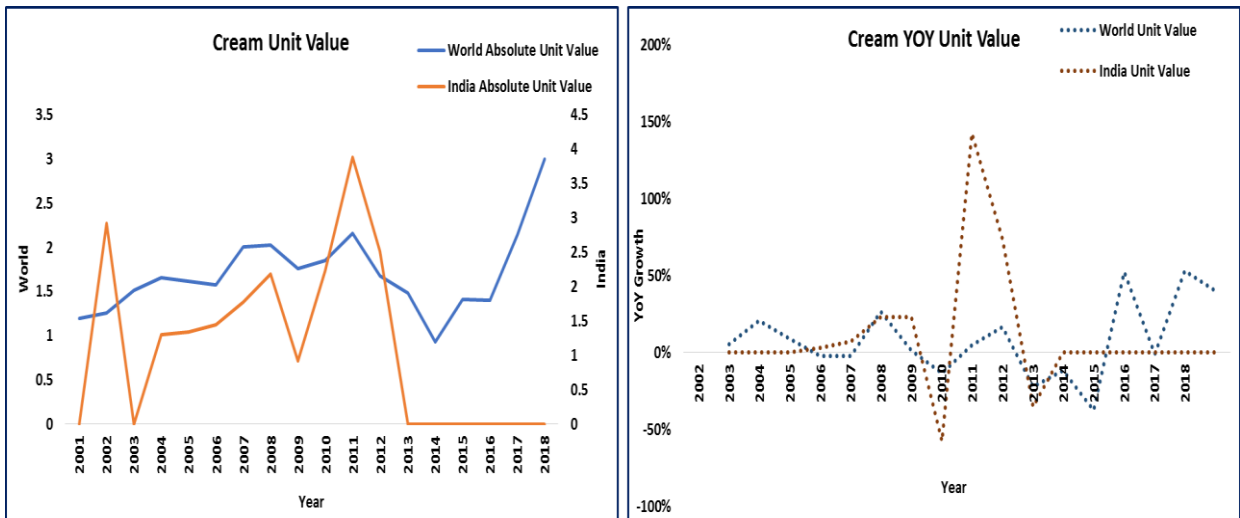


Figure 2. 56 Cream (040130) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

While importing 040130, the India's YoY change in value and quantity is following the world pattern. However, there are certain intermittent peaks observed when the YoY change in India is more than the YoY change for the world import of 040130 in terms of quantity and value (Figure 2. 57).

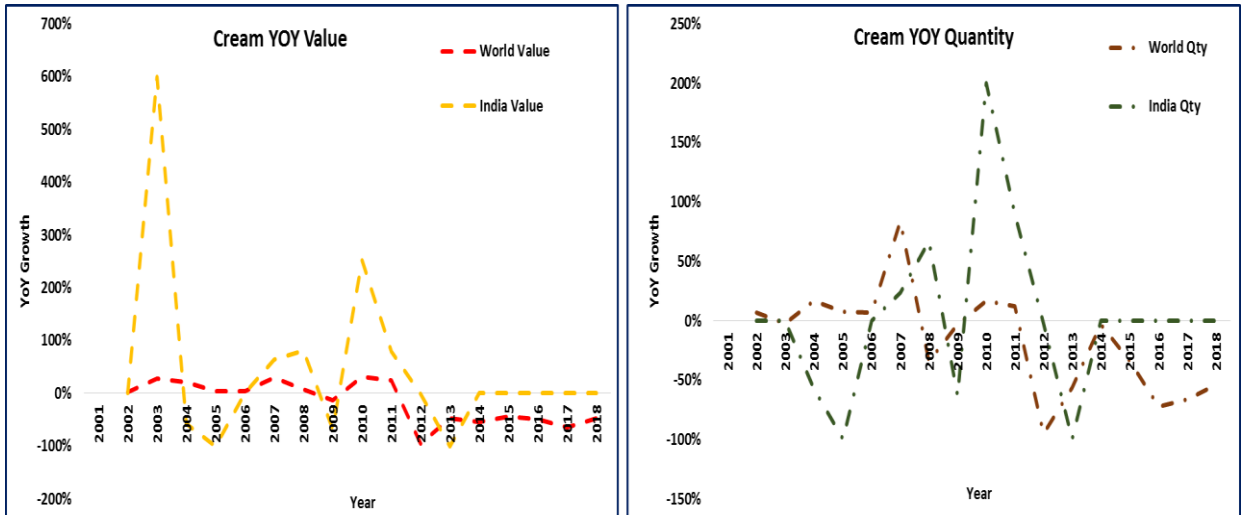


Figure 2.57 Cream (040130) import YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India cream exports increased in 2010 by 12.01% and 17.54% respectively and the cream imports of world and India declined in years 2009 by -9.79% and -15.45% respectively and in 2011 by 10.75% and -6% respectively (Figure 2.58).

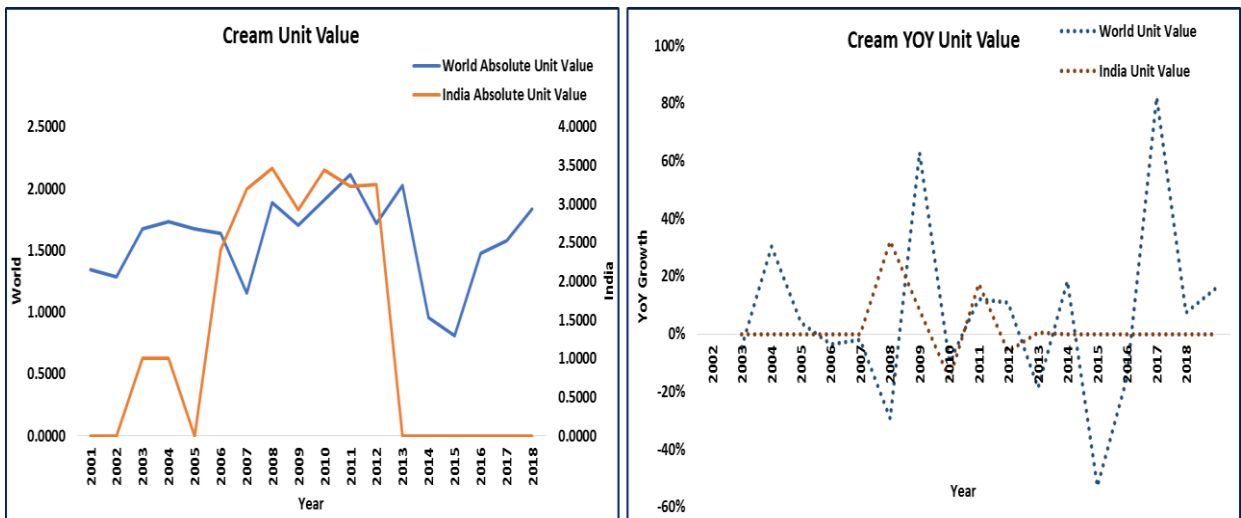


Figure 2.58 Cream (040130) import unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Cream (040140) Exports

The YoY change in value and quantity of Cream (040140) exports from India matched the growth rates of the world until 2012. After that there has been disparities in the growth rates in the sense that, there is a negative correlation with India-world growth rates (Figure 2.59).

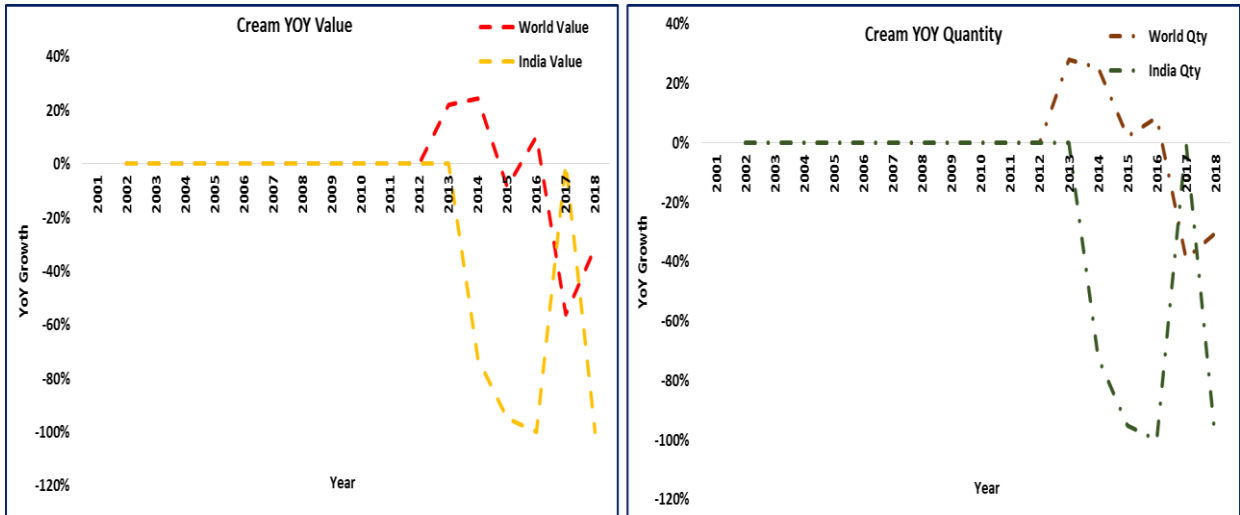


Figure 2.59 Cream (040140) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world cream exports decreased in 2015 by -10.62 while India's exports unit value increased in 2015 by 2.50% (Figure 2.60).

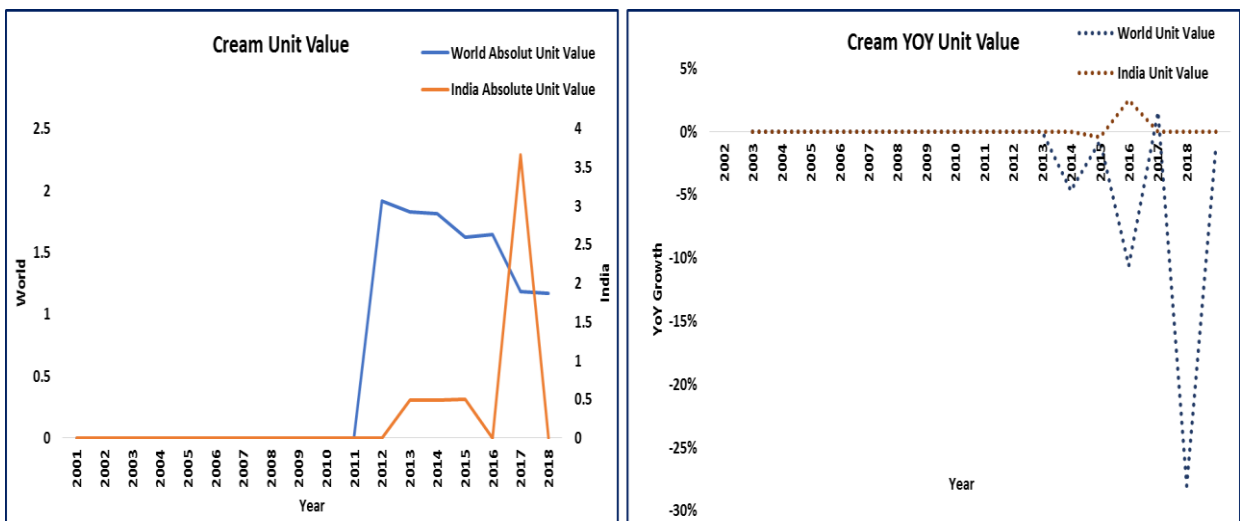


Figure 2.60 Cream (040140) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

From the Import perspective, India has not made any significant growth or decline during the 2001-18 period. The imports remained nil/constant throughout the period whereas there are peaks and troughs in the Import value of the whole world. Like other products 040140 is affected by the surge and deficit in production.

### Cream (040150)

#### Exports

When we observe the trends of export value of cream (040150), the YoY change in world value and Indian value is consistent till the year 2012. After that there was notable anomalies in the patterns of India

and world. Even though India is catching up with the world a lag is observed during 2013-2015. Post 2015, the growth in India's value and quantity is better than as compared to the growth rate of world's export value and quantity. Similar trend is observed in the quantity exported as well. During 2013-15 the import value or quantity in the world witnessed a decline whereas Indian imports increased. India's cream import growth change in value and quantity doesn't follow the world pattern (Figure 2. 61).

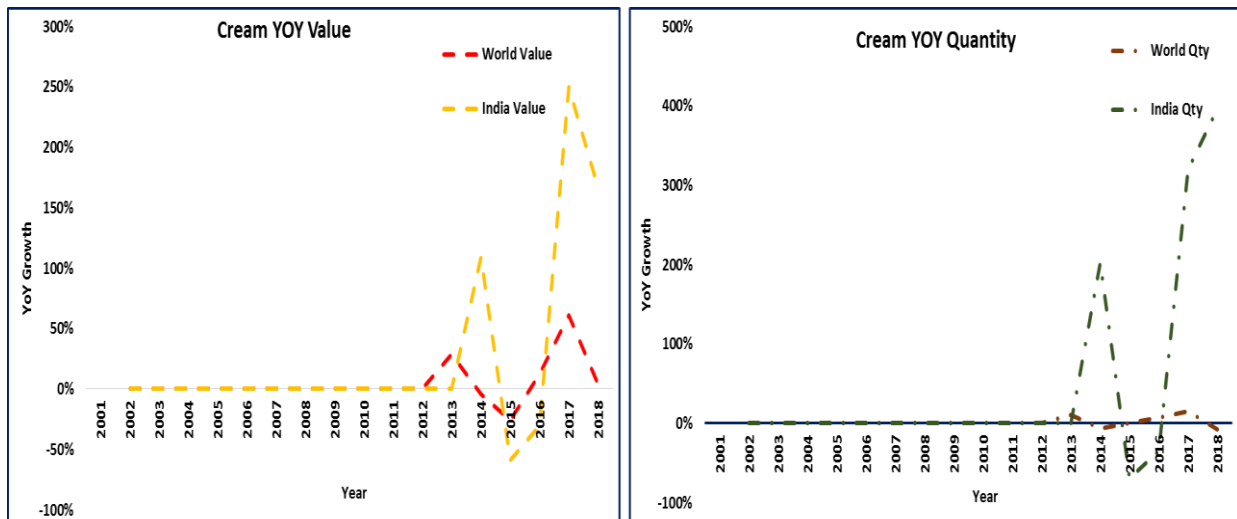


Figure 2. 61 Cream (040150) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India cream exports both declined in 2018 by 12.54% and -46.29% respectively as compared to the previous year (Figure 2. 62).

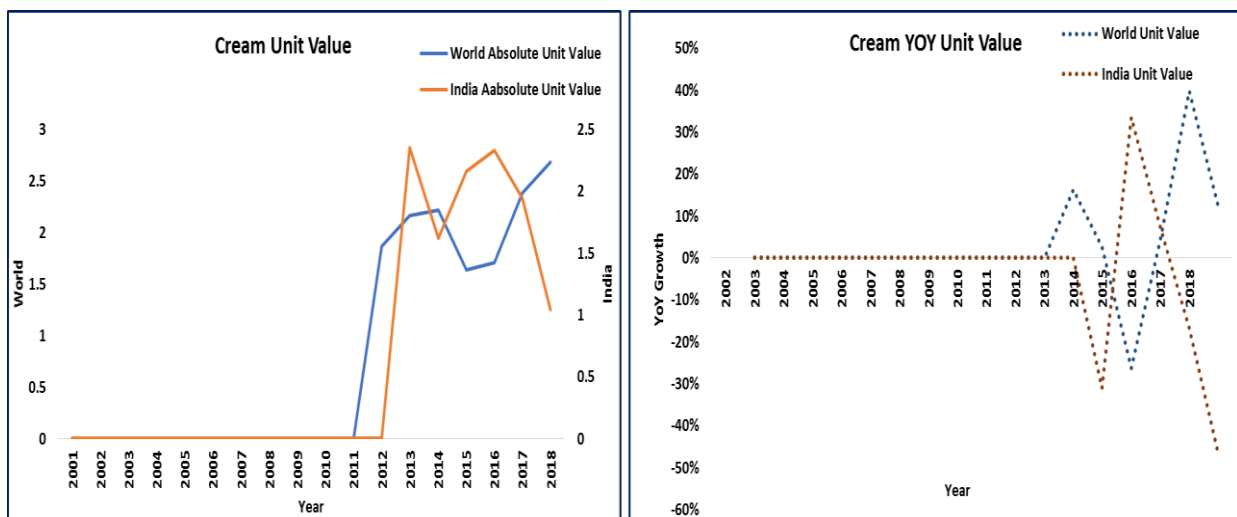


Figure 2. 62 Cream (040150) exports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

It is observed that in all the product categories of cream, a lag is observed in terms of quantity as well as value. This means that India is unable to forecast the world pattern but trying to follow the world trend with a lag.

### Imports

When we observe the trends of Import value of cream (040150), the YoY change in world value and Indian value is going in line with each other. However, there has been some huge fluctuations in case of India's trend whereas the world fluctuations are relatively low. It is also observed that, India's trend is taking some time to reflect the changes happening in the world trend. It is also notices that in the year 2015, both world and India's trends has dipped to negative points.

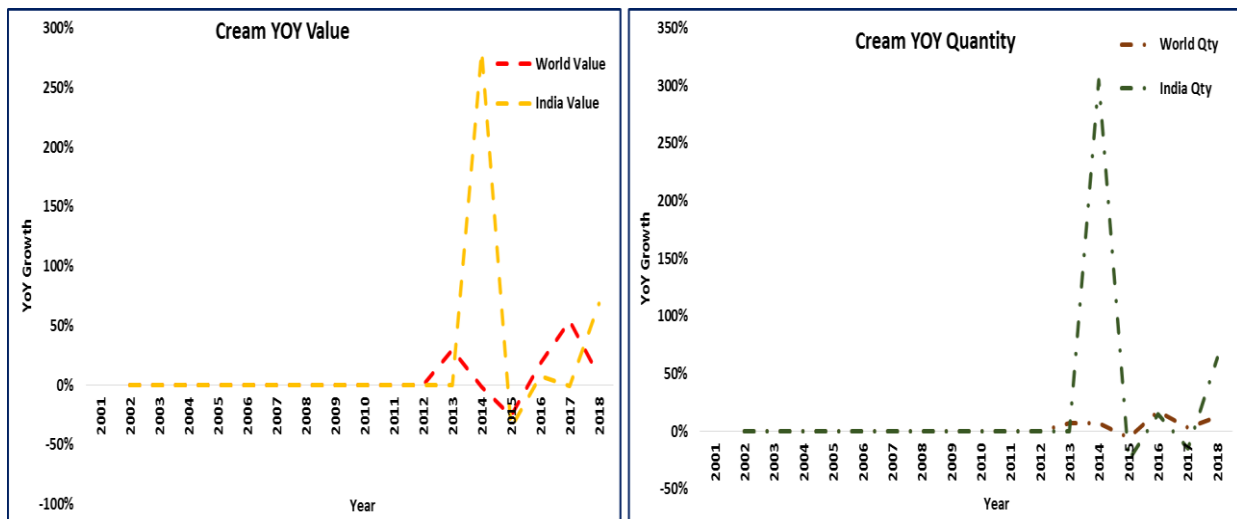


Figure 2. 63: Cream (040150) Imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India cream exports both declined in 2015 by -21.63% and -13.88% respectively and in 2018 by -4.63% and 2.58% while the unit value of both world and India increased in 2017 by 49.27% and 16.27% respectively (Figure 2. 64).

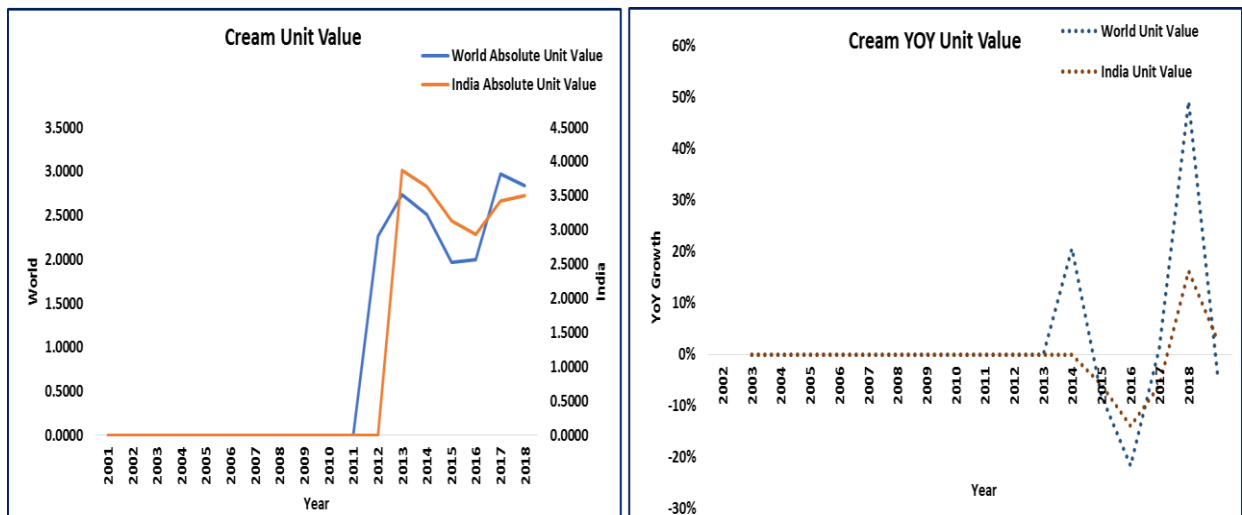


Figure 2. 64 Cream (040150) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### *Cream Price Trends*

According to OECD- FAO reports (2001-2018), the increase in prices of cream in 2007 were due to increasing population and income with growing popularity of the dairy products. In 2008-09, the decrease in prices was due to the global economic crisis while in 2010, the market stabilized after the crisis situation and the price of cream increased. In 2012, there was decline in cream prices due to increased global milk production. While in 2015, the low price of cream was due to lower import demand from China and growing production in EU, US and Oceania. The prices were higher in 2017 due to the reduced milk production in end of 2016 and first quarter of 2017. Also, there was a strong demand of the fat solids.

### ***Butter Milk***

#### *Buttermilk (040390)*

##### Exports

In case of export of buttermilk, the YoY change in quantity and value in case of world and India follows a similar pattern i.e., whenever the YoY change in quantity has increased the YoY change in value has also increased. While exporting 040390, the India's YoY change in value and quantity is following the world pattern (Figure 2. 65).

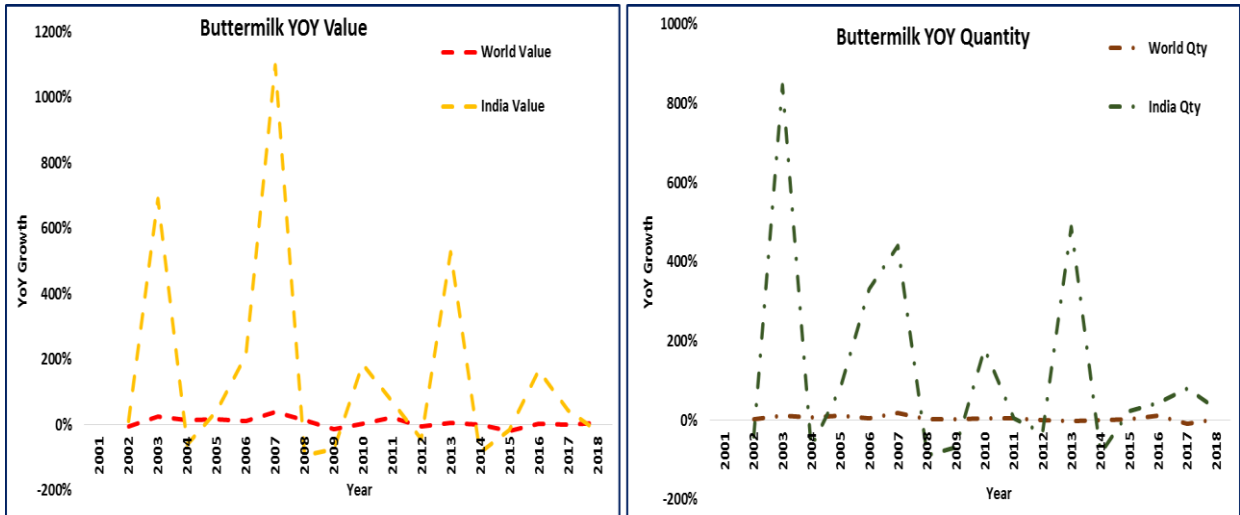


Figure 2. 65 Buttermilk (040390) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world buttermilk exports increased by 10.33% and of India buttermilk exports decreased by -19.71% while in 2018, the unit value of world and India buttermilk exports decreased by 2.77% and -38.15%. The YoY growth in unit value of world and India buttermilk exports increased in 2007, 2010-11, 2013 and in 2016 while the YoY growth in unit value of world and India buttermilk exports declined in 2005, 2008, 2012, 2014-15 and in 2018 (Figure 2. 66).

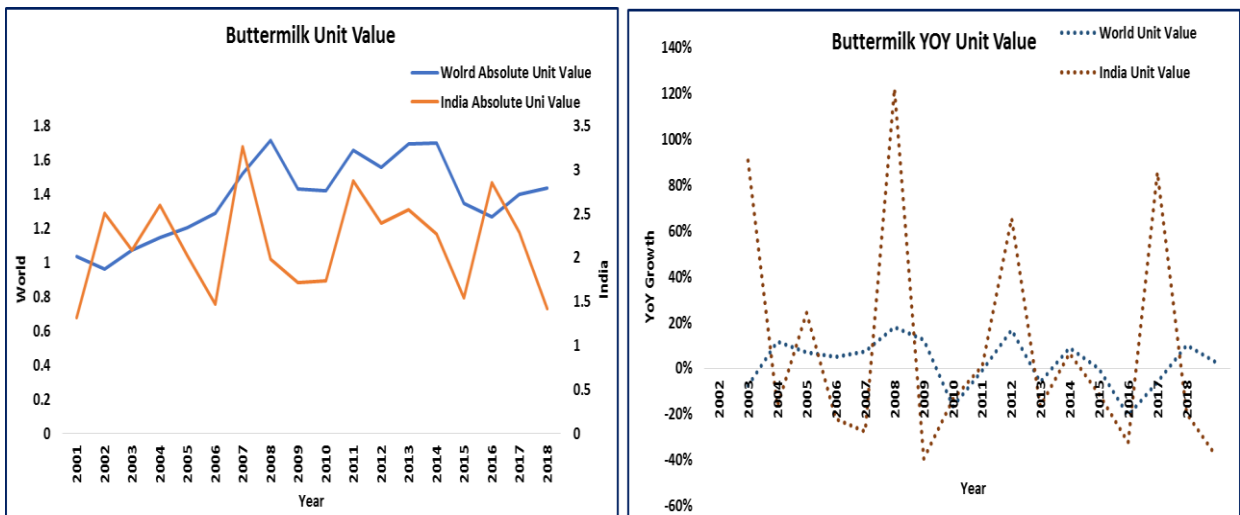


Figure 2. 66 Buttermilk (040390) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

## Imports

In case of import of buttermilk, the YoY change in quantity and value in case of world remain similar while the YoY change in quantity and value of India's is following a similar pattern i.e. whenever the



YoY change in quantity has increased the value has also increased. While importing 040390, the India's YoY change in value and quantity is following the world pattern (Figure 2. 67).

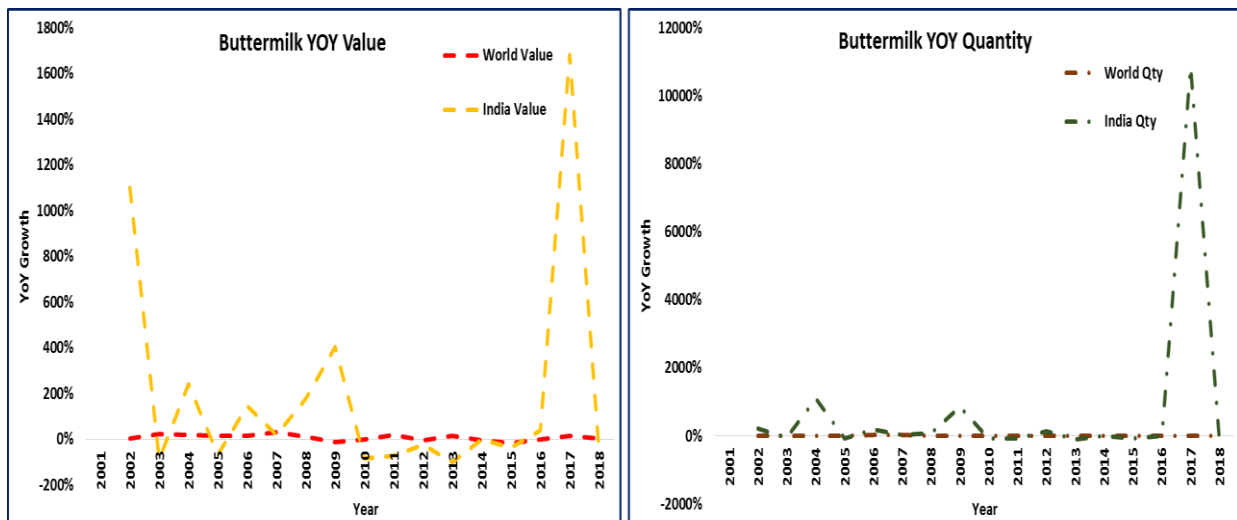


Figure 2. 67 Buttermilk (040390) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world buttermilk imports increased by 8.82% and of India buttermilk imports decreased by -83.76% while in 2018, the unit value of world and India buttermilk imports increased by 18.63% and 78.64%. The YoY growth in unit value of world and India buttermilk imports increased in 2007-08, 2018 while the YoY growth in unit value of world and India buttermilk imports declined in 2006, 2009 and 2012 (Figure 2. 68).

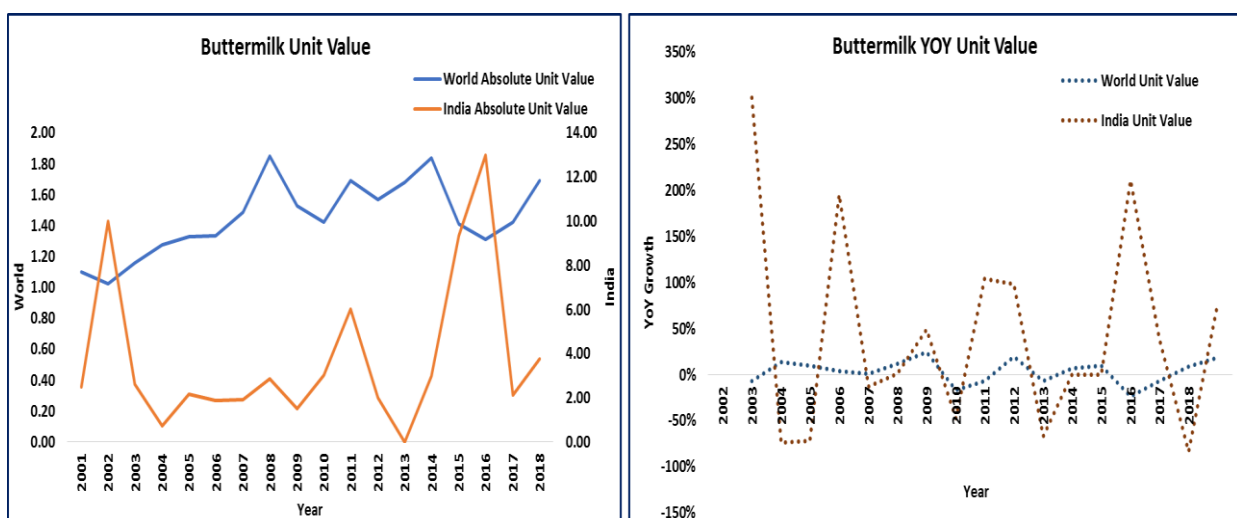


Figure 2. 68 Buttermilk (040390) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### *Buttermilk Price Trends*

According to OECD- FAO reports (2001-2018), During the second half of 2005, the prices of buttermilk was declined as in 2004 there were record high prices wherein farmers responded by buying more cows and milk production increases which was reflected in buttermilk prices in late 2005. The increase in prices of cream in 2007 were due to increasing population and income with growing popularity of the dairy products. In 2008-09, there were lower prices of buttermilk due to global economic crisis. Manufacturers witnessed inflation in the manufacturing costs and their attempt to keep buttermilk brands competitive in the market this category has remained competitive and maintained their popularity in 2010-11 and even during the crisis situation there was a steady growth in buttermilk. In 2012, there was decline in buttermilk prices due to increased global milk production. In 2013 end, there was rise in prices due to China strong import demand. Conversely, in 2014-15, the low price of buttermilk was due to lower import demand from China and growing production in EU, US and Oceania. In 2016 end, there was increase in prices of buttermilk due to reduced production in New Zealand and Australia.

### ***Condensed Milk***

Condensed milk category has two codes; 040291 and 040299. 040291 is Milk and cream, concentrated but unsweetened (excluding in solid forms) and 040299 is Milk and cream, concentrated and sweetened (excluding in solid forms).

### *Condensed Milk (040291)*

#### Export

For 040291 (unsweetened condensed milk), there is no change in YoY value and quantity for world exports over the years. Whereas, the YoY change in value for India is not following the world pattern. A sharp peak both in the case of YoY change in value and quantity is observed in the year 2004. The growth in value is also observed in the year 2008, 2010 and 2013. The YoY change in quantity follows the YoY change in value pattern, however the increase in change of quantity is higher than the change in value. Though the change in terms of quantity is changing for India's export of 040291, the change in quantity as well as value is consistent for the world export. One probable reason could be, India selling the product at a lower price than the world average, during 2004, 2008, 2010 and 2013 as a result of which increase of exported quantity of the product is observed during these years (Figure 2. 69).

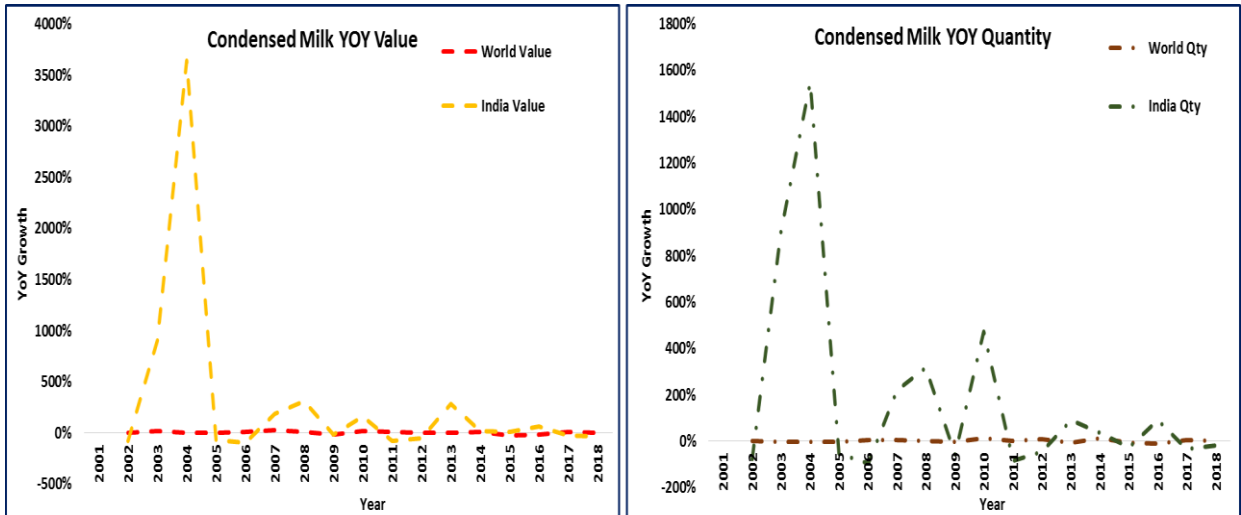


Figure 2. 69 Condensed Milk (040291) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India condensed milk exports increased in 2003, 2011, 2013 and 2017. However, there is a slight increase in exports in 2006 also. While unit value of world and India condensed milk exports declined in 2012, 2014 and 2018 (Figure 2. 70).

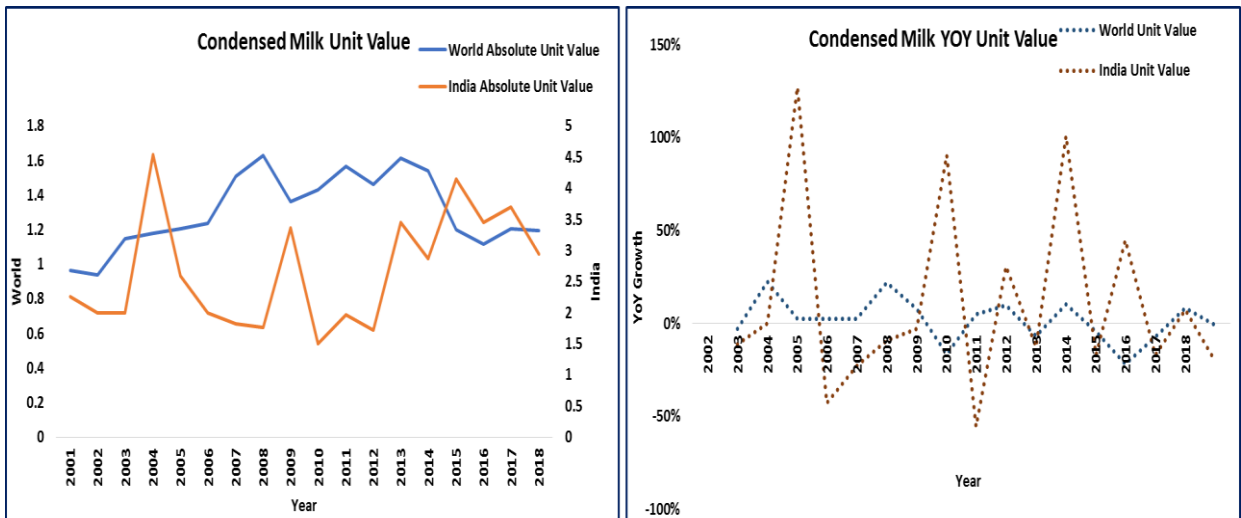


Figure 2. 70 Condensed Milk (040291) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

In case of 040291's import, the YoY change in world's quantity and value is following similar patterns over the years. The YoY change in quantity and value in case of India's import is also similar with slight anomalies. The increases in quantity during 2006-2007 resulted in increase in value during the same time. However, India attempted to follow the world trend during the recent years (Figure 2. 71).

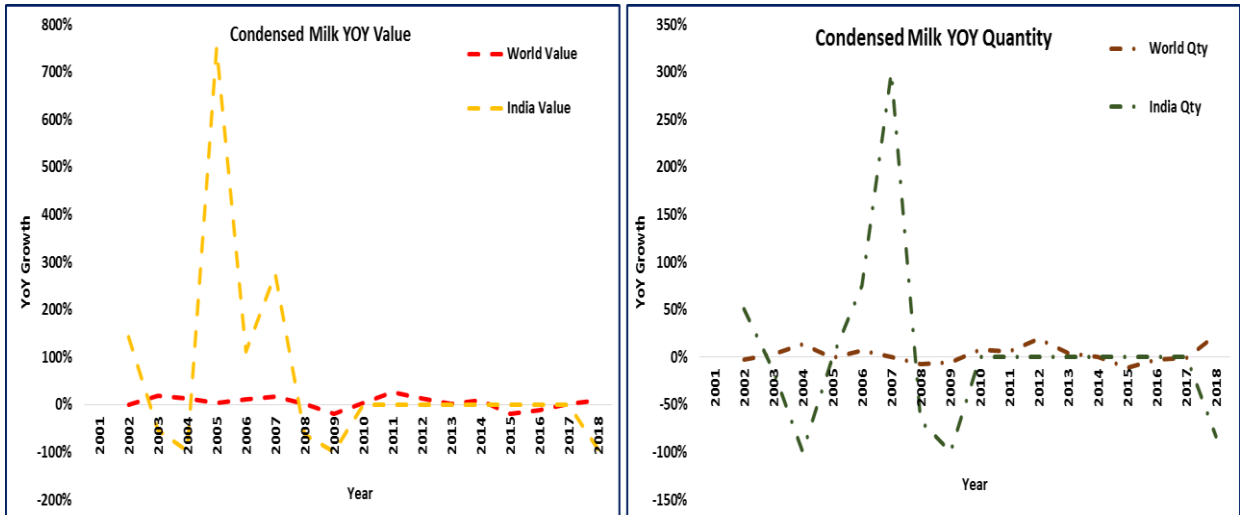


Figure 2. 71 Condensed Milk (040291) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India condensed milk imports increased in 2008 by 8.88% and 15.23% respectively. The unit value of world and India condensed milk imports decreased in 2018 by -11.05% and -68% respectively (Figure 2. 72).

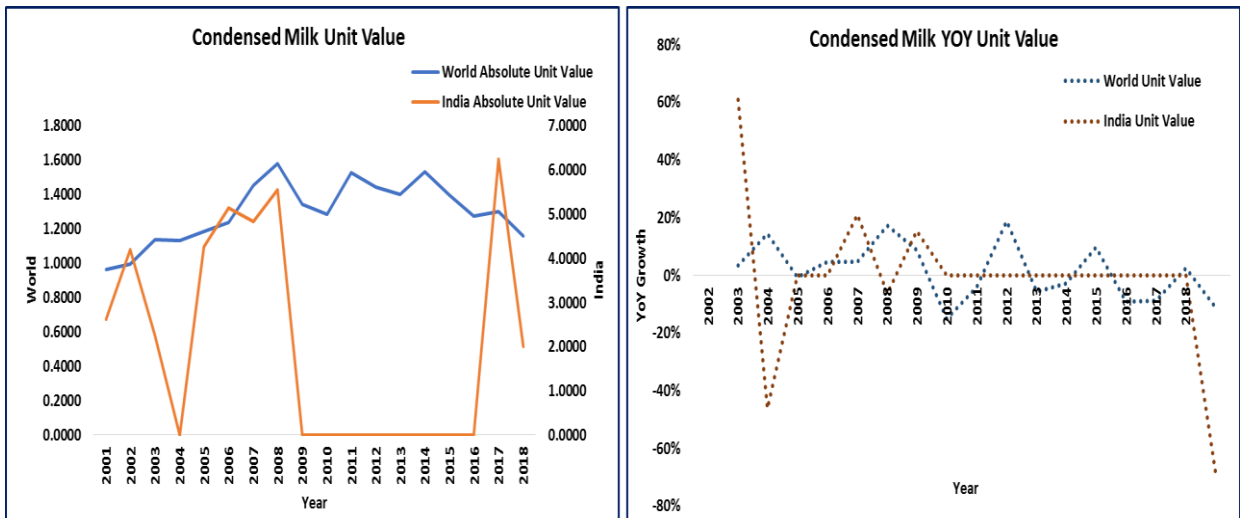


Figure 2. 72 Condensed milk (040291) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva.

### Condensed Milk (040299)

#### Exports

If we look at India's change in exported quantity and value, sharp peaks are observed in 2008, 2014 and 2016. Despite of increase in India's value and quantity of 040299 export by 300%-600% there is no impact on world's change in value or quantity. This also indicates that India has a very negligible share of 040299's export when compared to the world (Figure 2. 73).

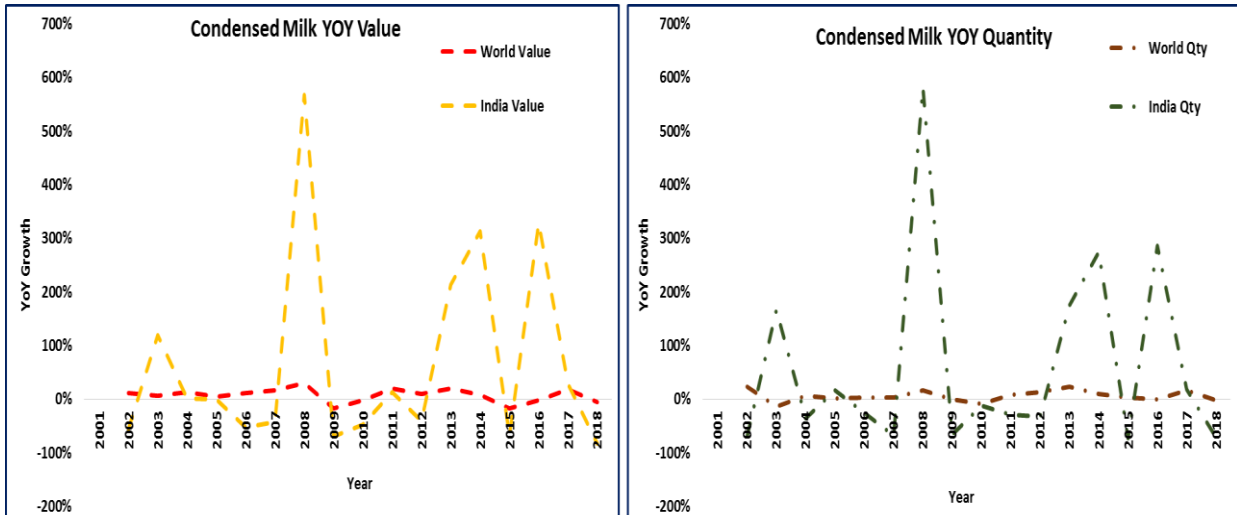


Figure 2. 73 Condensed milk (040299) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India condensed milk exports increased in 2007, 2011 and 2013. While there was an increase in 2017 in unit value of world condensed milk exports by 1.13%, India’s unit value of condensed milk exports declined by 8.07%. The YoY growth in unit value of world and India condensed milk exports declined in 2005, 2008, 2009, 2012 and in 2018 (Figure 2. 74).

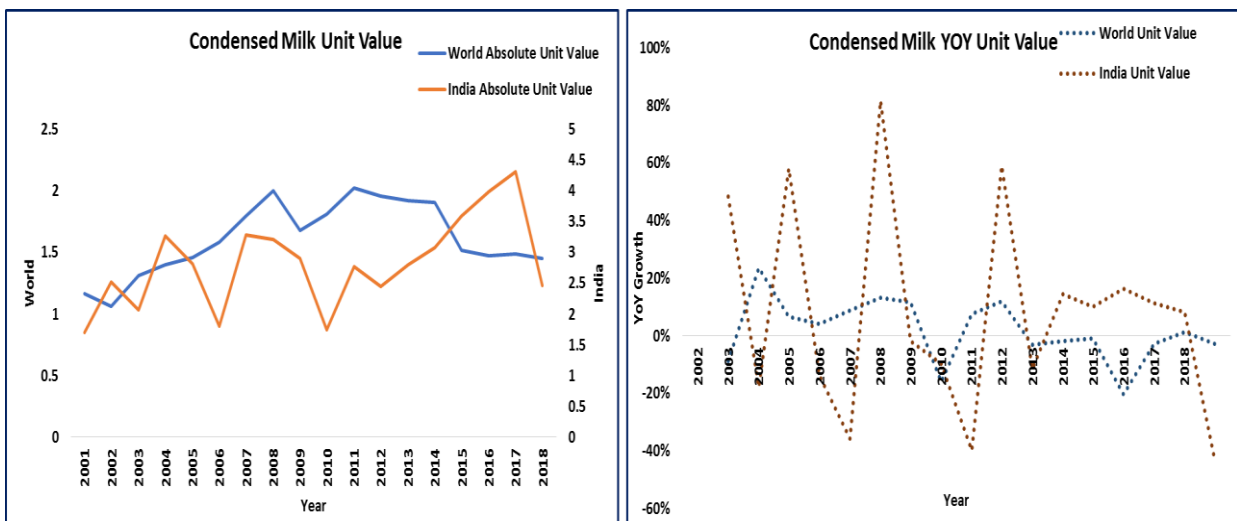


Figure 2. 74 Condensed milk (040299) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

The YoY change in value and quantity has not increased or decreased substantially whereas, in case of India, the YoY change in value and quantity has fluctuated over the years. Though the change in value and quantity in case of India’s import is in the same direction but the change in quantity is less than the

change in value e.g., the YoY change in quantity in the year 2010 is 100 % whereas the change in value is 300%. Which also means that India has imported at a high price during these years (Figure 2. 75).

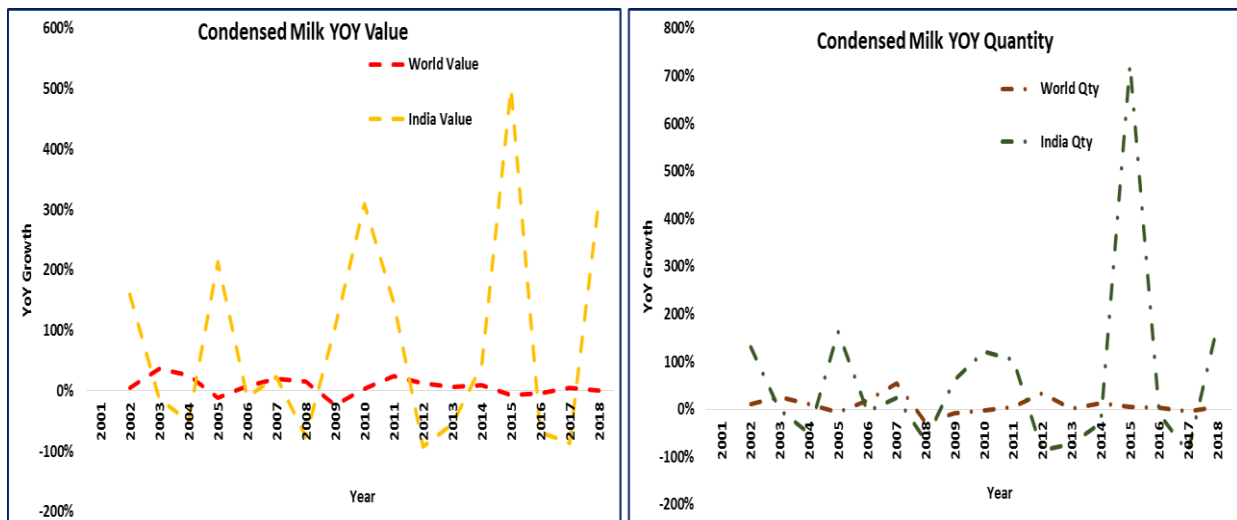


Figure 2. 75 Condensed milk (040299) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

The YoY growth in unit value of world and India condensed milk imports increased in 2004, 2010, 2013 and 2017 while the imports declined in 2006, 2007, 2012 and in 2015 (Figure 2. 76).

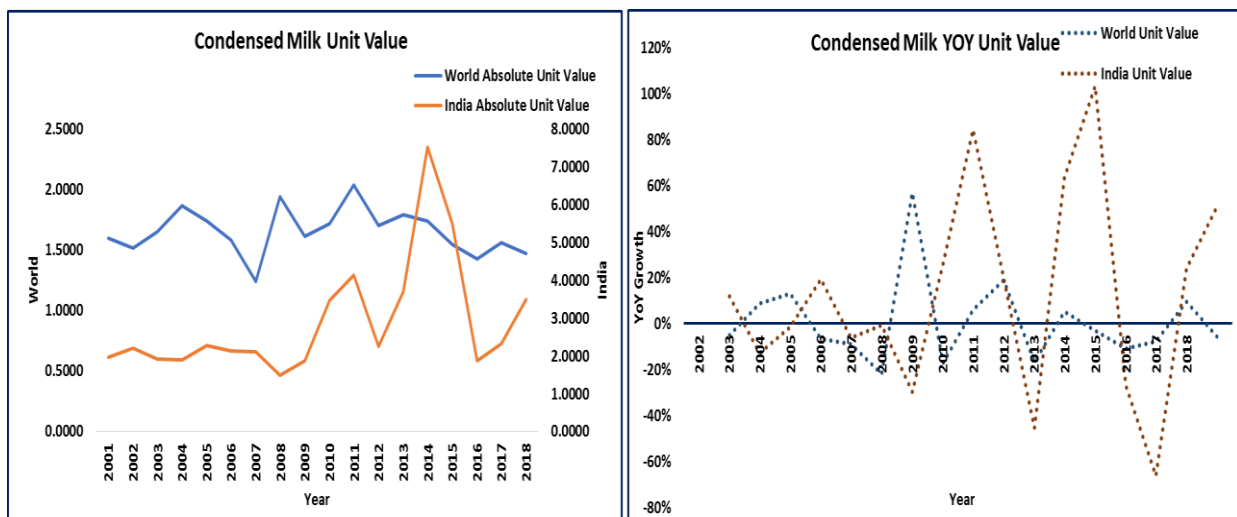


Figure 2. 76 Condensed Milk (040299) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Condensed Milk Price Trends

According to OECD- FAO reports (2001-2018), due to limited supplies from countries such as Australia, Eastern Europe and South America there was fall in prices of condensed milk in early 2003. During the second half of 2005, the prices of condensed milk was declined as in 2004 there were record high prices

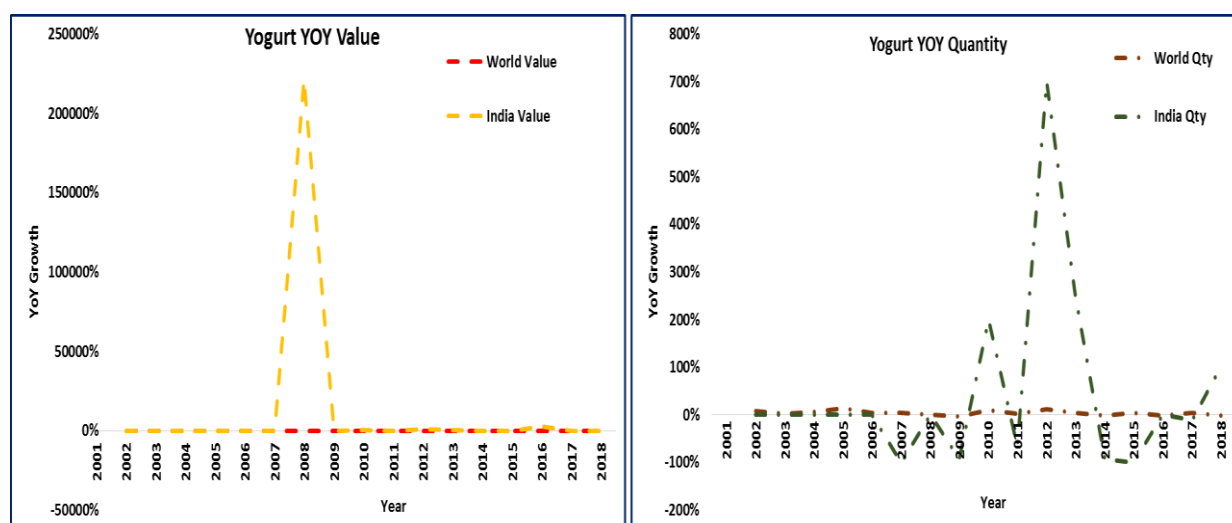
wherein farmers responded by buying more cows and milk production increases which was reflected in condensed milk prices in late 2005. In 2008-09 due to global economic crisis, there was decline in condensed milk. In 2013 end, there was rise in prices due to China strong import demand. The prices were higher in 2017 due to the reduced milk production in end of 2016 and first quarter of 2017 and due to a strong demand of the fat solids.

## ***Yoghurt***

### ***Yoghurt (040310)***

#### **Exports**

In case of export of Yoghurt, the YoY change in quantity and value in case of world remain constant while the YoY change in quantity and value of India's is not following similar pattern as whenever the YoY change in quantity has increased or decreased the value has remained constant except for year 2008. The YoY change in quantity and value in case of world remain constant. However, there are certain intermittent peaks observed when the YoY change in India is less or more that the YoY change for the world export in terms of quantity and value (Figure 2. 77).



**Figure 2. 77 Yoghurt (040310) exports YoY value and YoY quantity**  
*Source: ITC Trade map, International Trade Centre (2019), Geneva*

In 2017, unit value of world and India Yoghurt exports increased by 4.70% and 34.13% respectively while in 2018, the unit value of world Yoghurt exports increased by 5.50% and in India Yoghurt exports there was a decline by -58.06%. The YoY growth in unit value of world and India Yoghurt exports increased in 2010-11, 2017 while the YoY growth in unit value of world and India Yoghurt exports declined in 2009 (Figure 2. 78).

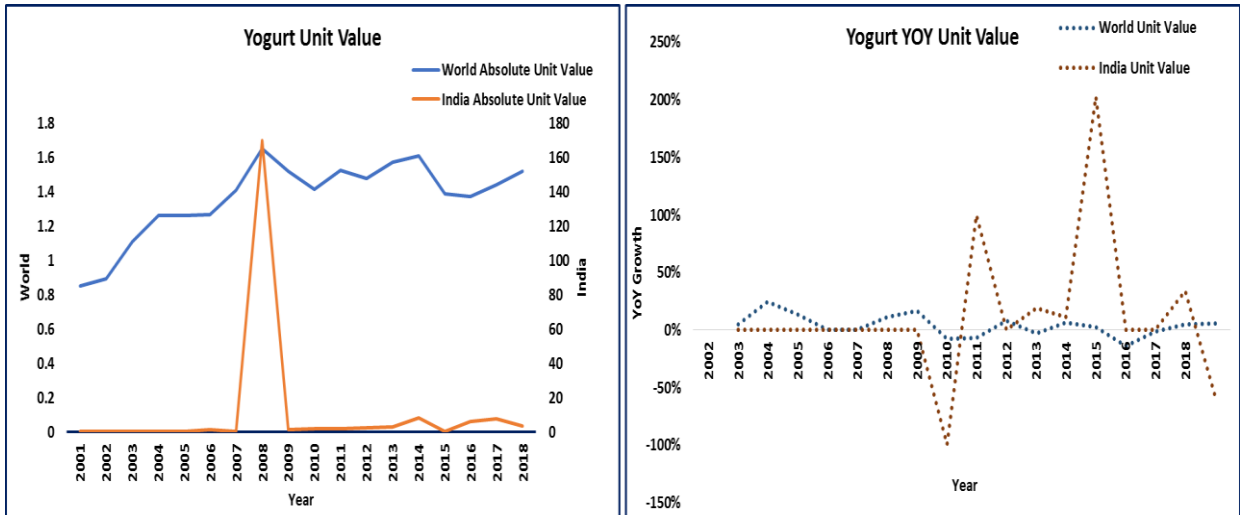


Figure 2.78 Yoghurt (040310) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

While importing 040310, the India's YoY change in value and quantity is following the world pattern (Figure 2.79). It is observed that both World's YOY changes in import in terms of both value quantity is showing anomalies. However, in case of India, YOY changes in import in terms of both value and quantity is going in sync with each other. Between 2013 and 2015 India has witnessed A negative growth in YOY changes on import of Yoghurt.

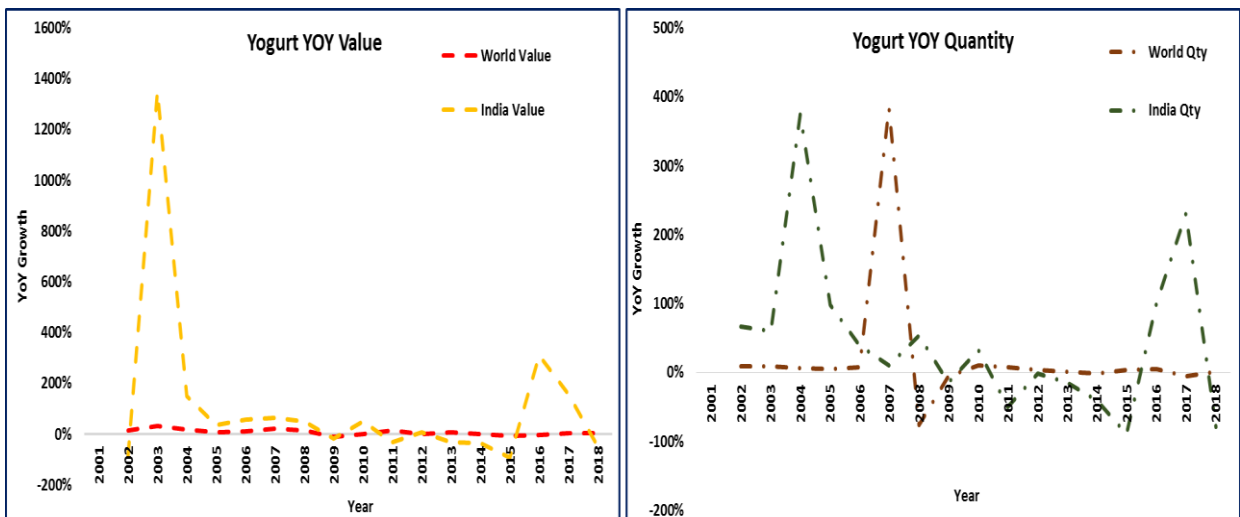


Figure 2.79 Yoghurt (040310) import YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world Yoghurt imports increased by 8.39% and India unit value of Yoghurt imports decreased by -22.19% while in 2018, the unit value of world Yoghurt imports decline by 4.59% and in India Yoghurt imports there was an increase by 133.23%. The YoY growth in unit value of world and



India Yoghurt imports increased in 2003, 2011 and in 2016 while the YoY growth in unit value of world and India Yoghurt imports declined in 2009, 2012 and in 2015 (Figure 2. 80).

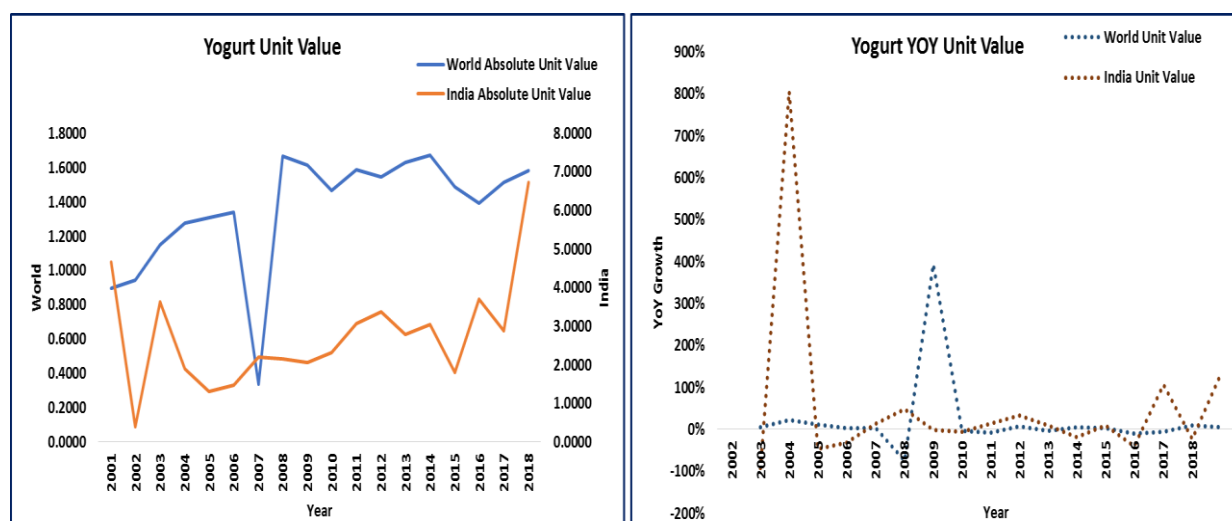


Figure 2. 80 Yoghurt (040310) import unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Yoghurt Price Trends

According to OECD- FAO reports (2001-2018), the milk demand was less than milk output in end 2008 and 2009. The lower prices signal producers that market needs have been declined and the production should be reduced either by culling cows or by reducing feed inputs. However, in 2010-11 there was increase in Yoghurt prices due to increase in demand. In 2016 end, there was increase in prices of Yoghurt due to reduced production in New Zealand and Australia.

### Infant Milk Products

#### Infant Milk Products (190110)

##### Export

The YoY change in quantity in case of world export has shown slight fluctuations whereas high fluctuations in YoY change in export value is observed. This indicates that the price of 190110 at the world level is not consistent. The YoY change in export value of 190110 from India has tried to follow the world pattern, however the YoY change in export quantity is not following the world pattern. This also depicts that the price of 190110 at which India is exporting is not in sync with the World Price (Figure 2. 81).

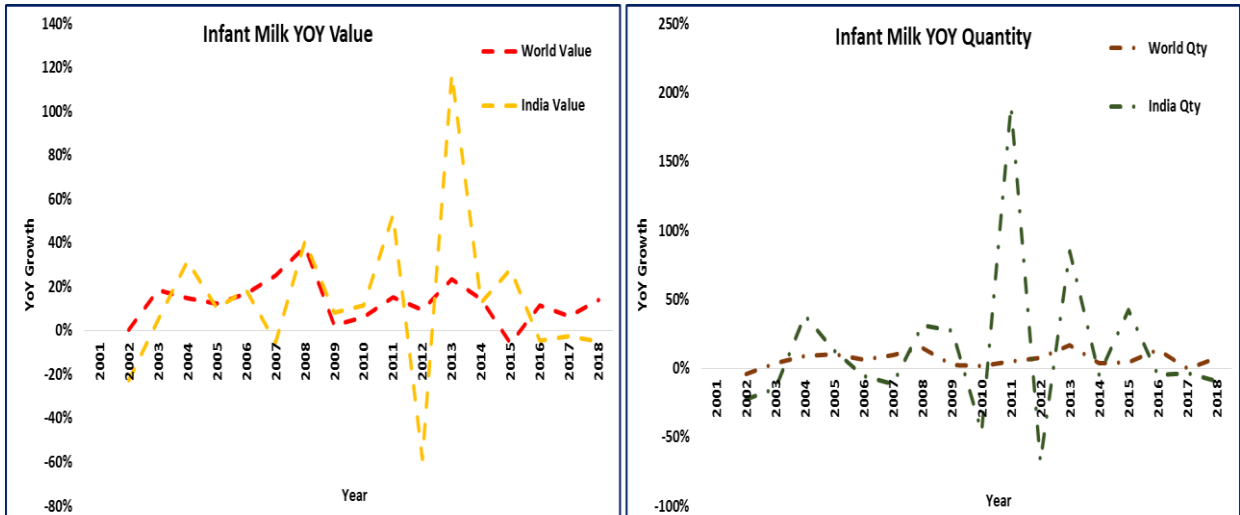


Figure 2. 81 Infant milk (190110) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2016-2017, unit value of world infant milk product exports and India increased while in 2018, the unit value of world infant milk exports decline by 5.81% and in India infant milk exports there was an increase by 5.04%. The YoY growth in unit value of world and India infant milk exports increased in 2003, 2008, 2010, 2014 and in 2016-17 while the YoY growth in unit value of world and India infant milk exports declined in 2004, 2006, 2009 and in 2015 (Figure 2. 82).

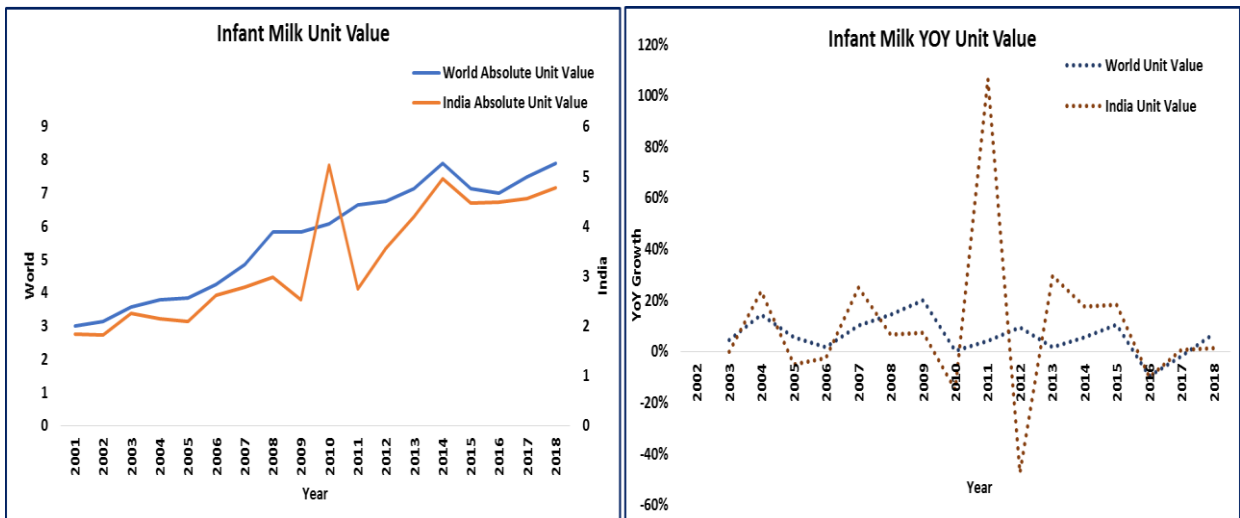


Figure 2. 82 Infant Milk (190110) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

Similar is the case of infant milk product imports, the YoY change in quantity in case of world import has shown slight fluctuations whereas high fluctuations in YoY change in import value is observed. This indicates that the price of 190110 at the world level is not consistent. The YoY change in import value of

190110 from India has tried to follow the world pattern, however the YoY change in import quantity is not following the world pattern (Figure 2. 83).

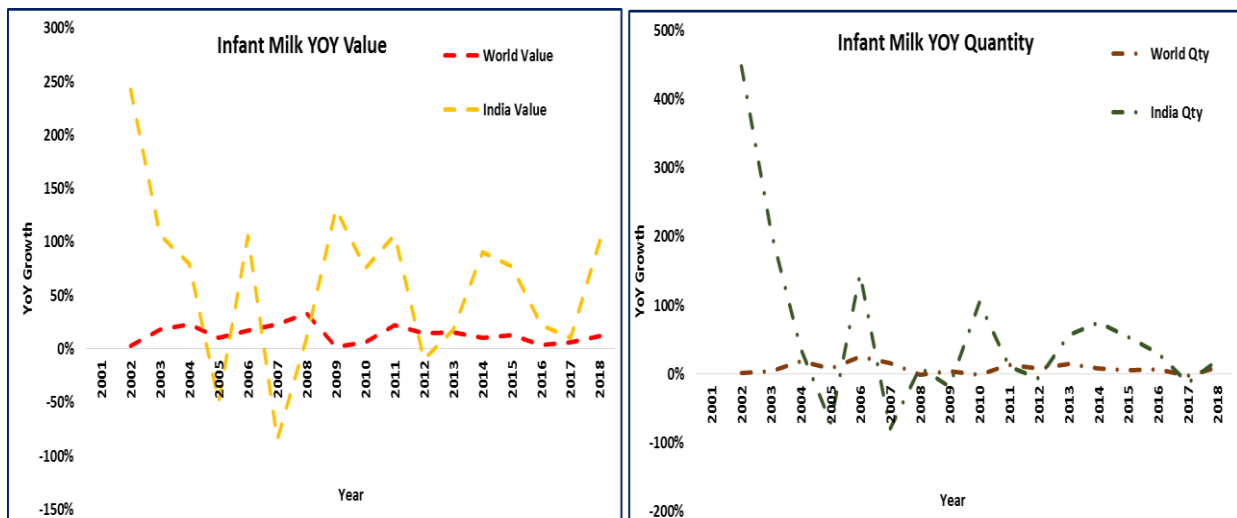


Figure 2. 83 Infant milk (190110) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, there was rise in world and India infant milk product imports by 7.93% and 26.48% respectively while in 2018, there was a decline in world infant milk imports by 2.22% and in India there was a rise in infant milk imports by 67.46%. The YoY growth in unit value of world and India infant milk imports increased in 2003, 2008, 2011, 2014-15 and in 2017 while the YoY growth in unit value of world and India infant milk imports declined in 2006, 2012-13 and in 2016 (Figure 2. 84).

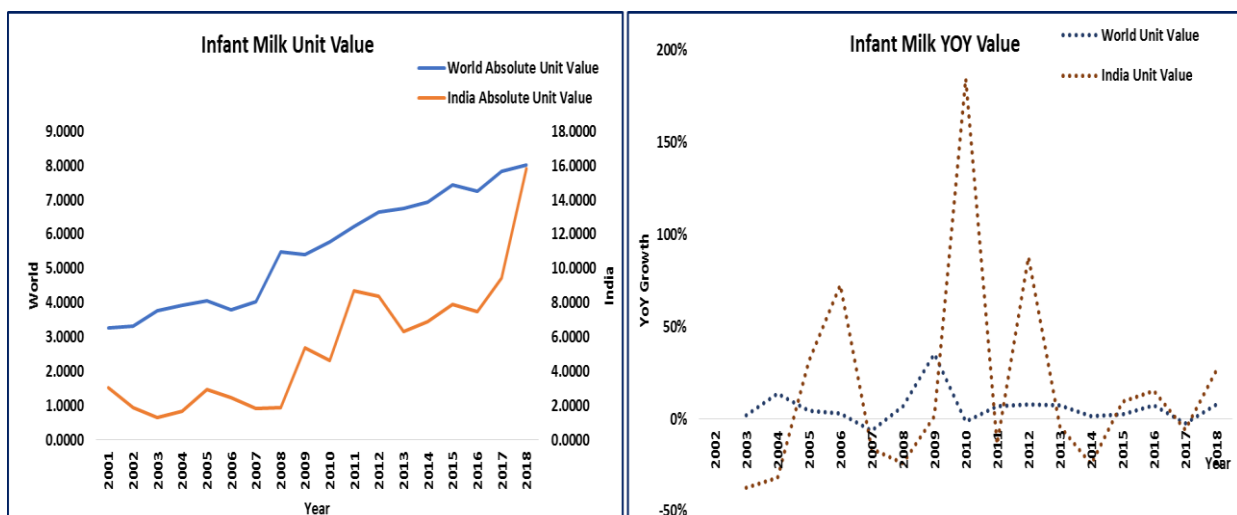


Figure 2. 84 Infant milk (190110) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Infant Milk Products Price Trends

According to OECD- FAO reports (2001-2018), India adopted the Infant Milk product Substitutes, Feeding Bottles, and Infant Foods (IMS) Act in 1992 which was strengthened in 2003. In 2003 and 2008, infant milk prices were high due to increase in demand. In 2015, there was decrease in prices due to lower import demand from China and due to increasing production in EU, US and Oceania. In 2016-17, draught and adverse weather restricted production in Oceania pasture-based system reduced the production in New Zealand and Australia. Thereby increase in infant milk prices. Overall, the infant milk formula industry was seen resilient towards the global downward trends due to rapid urbanization, high birth rates in South East Asia and low breastfeeding rates in China, infant milk is considered as a healthier alternative to breast milk (Changing Markets Foundation, 2017).

### Casein and Caseinates

#### Casein (350110)

##### Exports

The YoY change in terms of world exports quantity is inversely related to YoY change in value of World's export. The YoY change in quantity and value of India's 350110 export is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased. In case of casein, India is not following the world pattern (Figure 2. 85).

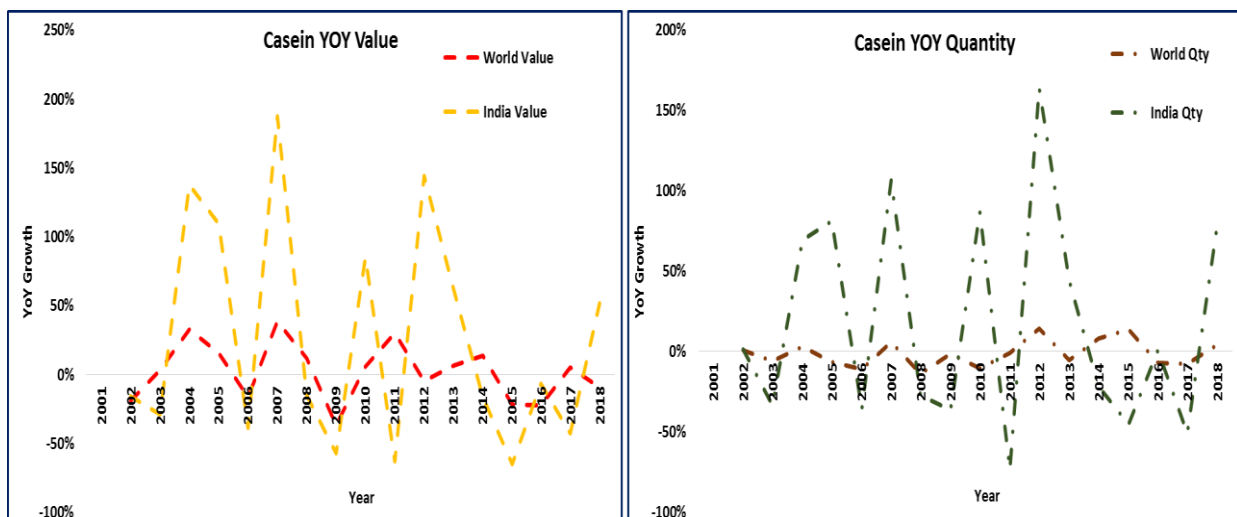


Figure 2. 85 Casein (350110) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world casein exports and India rise by 13.87% and 16.82% respectively. In 2018, the unit value of world casein exports and India casein exports decline by -12.42% and -15.12% and respectively. The YoY growth in unit value of world and India casein exports increased in 2003-04, 2007,

2010-2011, 2013, 2016 and in 2017 while the YoY growth in unit value of world and India casein exports declined in 2005-06, 2008-09, 2012, 2014-15 and in 2018 (Figure 2. 86).

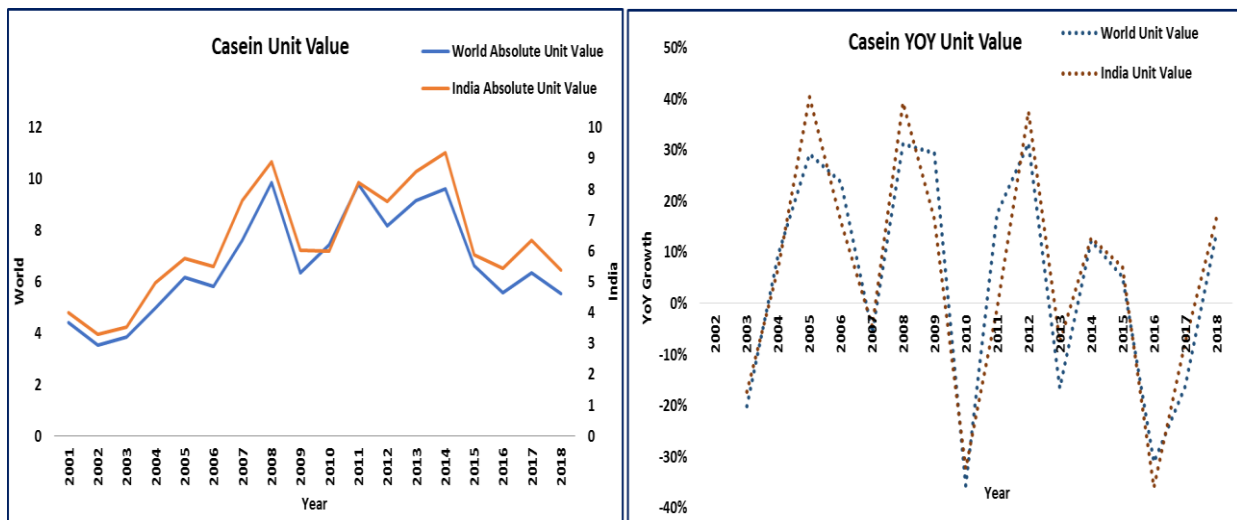


Figure 2. 86 Casein (350110) exports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

The YoY change in terms of world imports quantity is inversely related to YoY change in value of World’s import. The YoY change in quantity and value of India’s 350110 import is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased (Figure 2. 87).

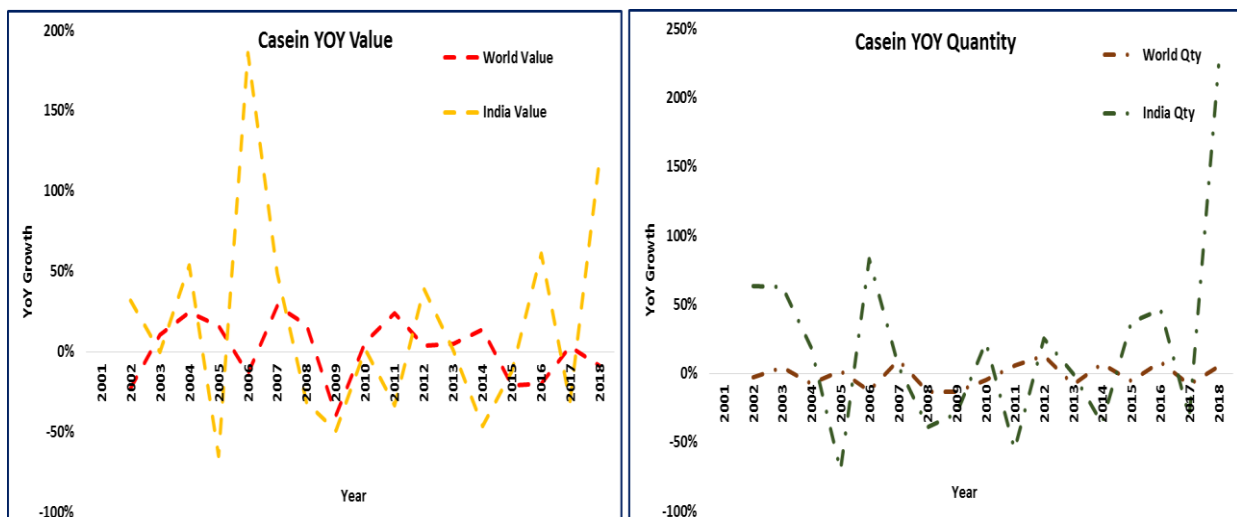


Figure 2. 87 Casein (350110) imports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, there was rise in world casein imports by 12.18% and India casein imports reduced by 1.04% while in 2018, there was a decline in world and India casein imports by -13.02% and -32.45% respectively. The YoY growth in unit value of world and India casein imports increased in 2004, 2010-11 while the YoY growth in unit value of world and India casein imports declined in 2005, 2009, 2014-15, and in 2018 (Figure 2. 88).

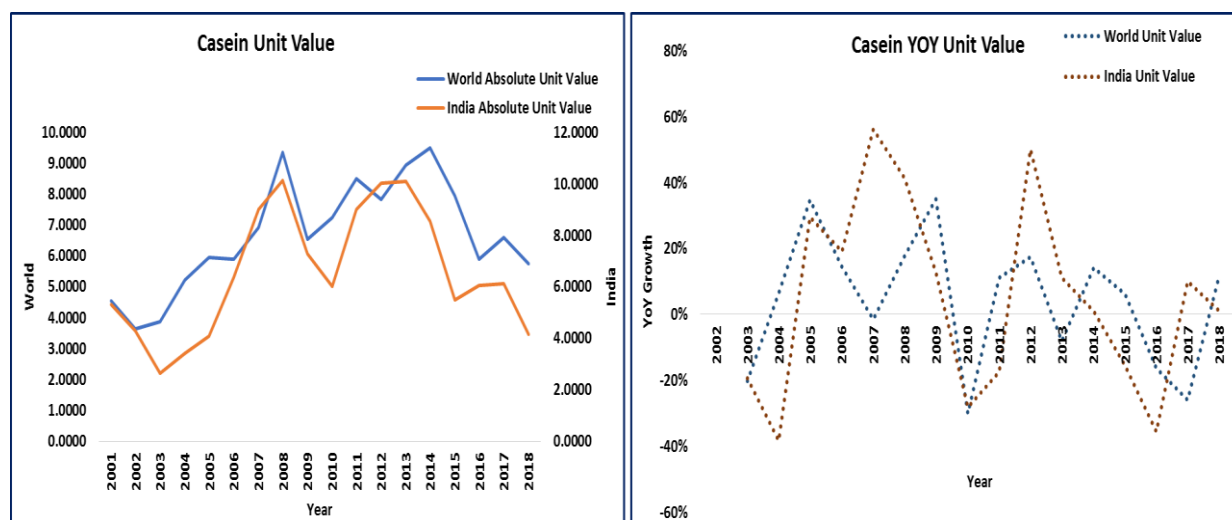


Figure 2. 88 Casein (350110) imports unit value and YoY unit value  
Source: ITC Trade map, International Trade Centre (2019), Geneva

### Casein Price Trends

According to OECD- FAO reports (2001-2018), Casein prices increase in 2003-04 partly due to adverse weather conditions which negatively affected the milk production in Oceania mainly dairy product exporting countries. During the second half of 2005, the prices of casein was declined as in 2004 there were record high prices wherein farmers responded by buying more cows and milk production increases which was reflected in condensed milk prices in late 2005. The increase in prices of casein in 2007 were due to increasing population and income with growing popularity of the dairy products. In 2008-09 due to global economic crisis, there was decline in casein prices. in 2010-11 there was increase in casein prices due to increase in demand. In 2012, there was decline in casein prices due to increased global milk production. In 2013 end, there was rise in prices due to China strong import demand. In 2015, there was decrease in prices due to lower import demand from China and due to increasing production in EU, US and Oceania. In 2016-17, draught and adverse weather restricted production in Oceania pasture-based system reduced the production in New Zealand and Australia, Thereby increase in casein prices.

## Caseinate (350190)

### Exports

The YoY change (350190) in quantity and value in case of world remain constant while the YoY change in quantity and value of India's is following a similar pattern i.e. whenever the YoY change in quantity and value has increased the value has also increased. While exporting 350190, the India's YoY change in value and quantity is following the world pattern. However, there are certain intermittent peaks observed when the YoY change in India is more than the YoY change for the world export in terms of quantity and value such as in 2014 (Figure 2. 89).

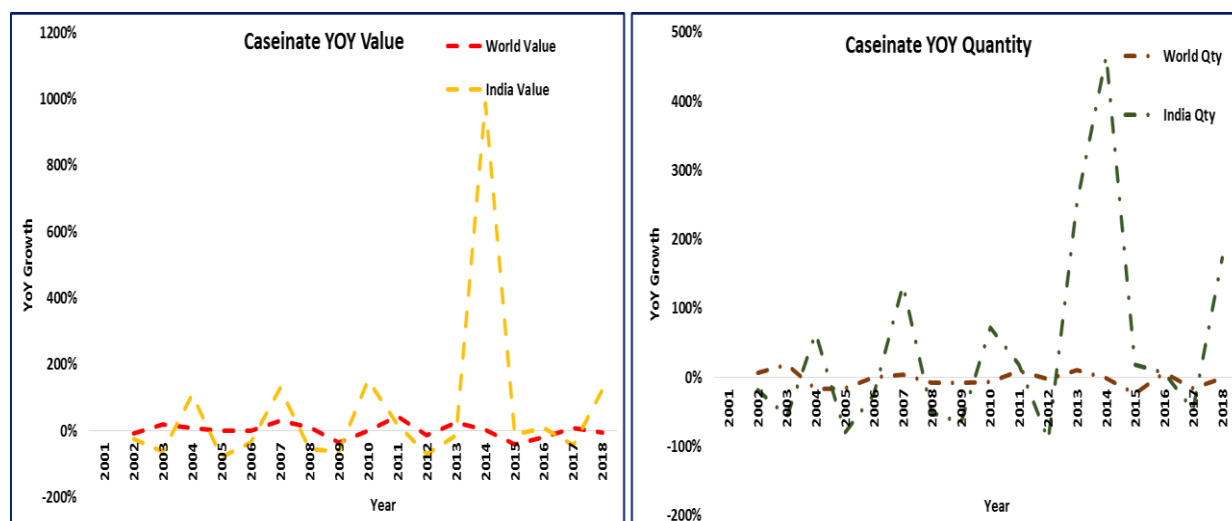


Figure 2. 89 Caseinate (350190) exports YoY value and YoY quantity  
Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world caseinate exports and India rise by 28.79% and 10.31% respectively. In 2018, the unit value of world caseinate exports and India caseinate exports decline by -5.62% and -17.31% and respectively. The YoY growth in unit value of world and India caseinate exports increased in 2004, 2007, 2010 and in 2017 while the YoY growth in unit value of world and India caseinate exports declined in 2005-06, 2008, 2015 and in 2018 (Figure 2. 90).

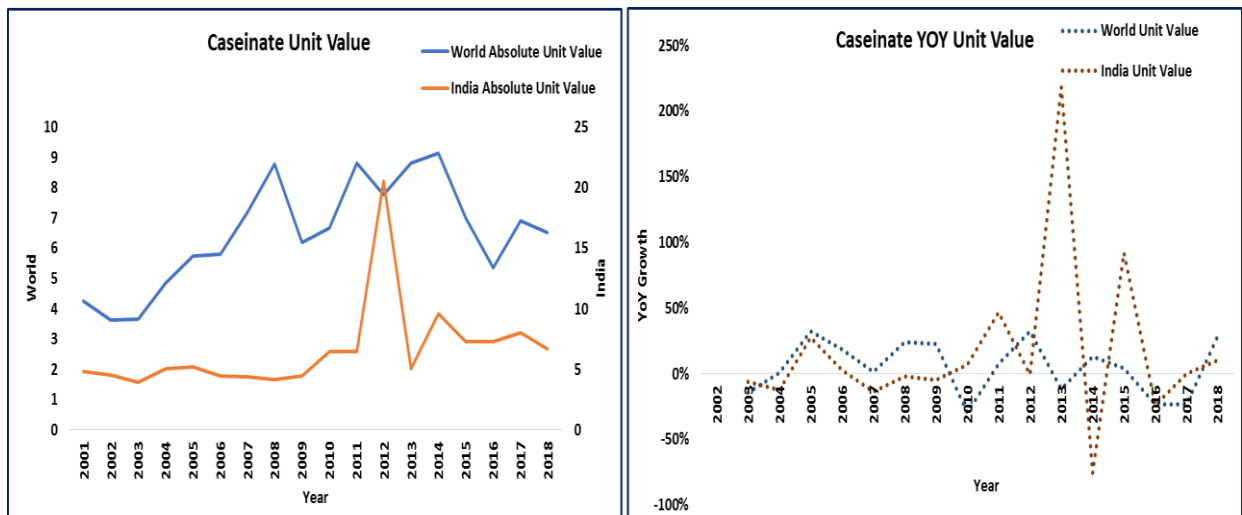


Figure 2.90 Caseinate (350190) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Imports

The YoY change in Import quantity and import value in case of world remain constant while the YoY change in quantity and value of India's is following a similar pattern i.e. whenever the YoY change in quantity has increased the value has also increased. While importing 350190, the India's YoY change in value and quantity is following the world pattern (Figure 2.91).

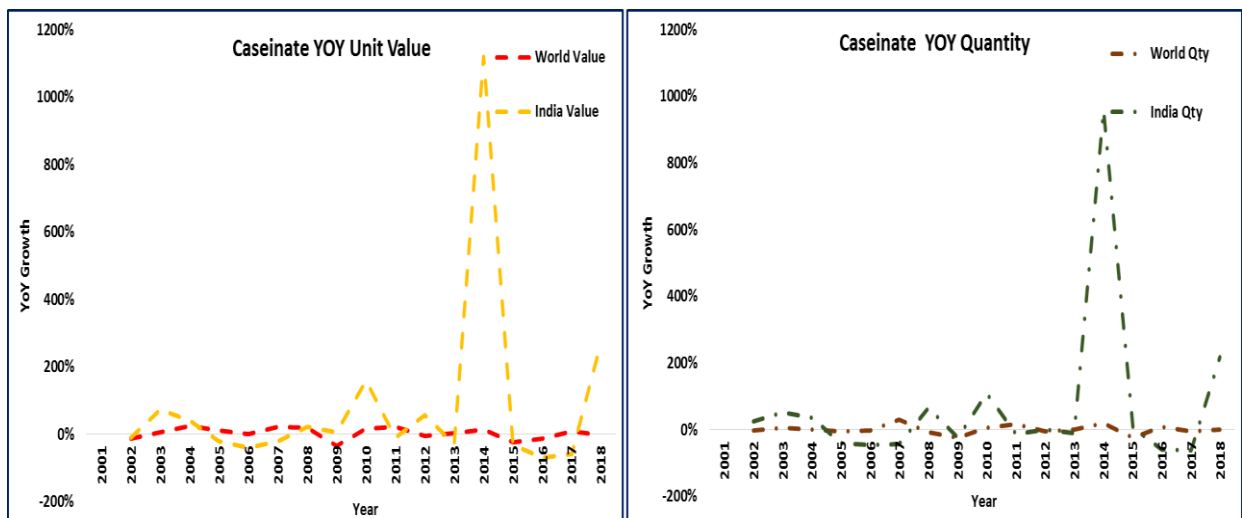


Figure 2.91 Caseinate (350190) import YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, there was rise in world and India caseinate imports by 14.65% and 15.45% respectively while in 2018, there was a decline in world but India caseinate imports increased by 18.62%. The YoY growth in unit value of world and India caseinate imports increased in 2003 and 2017 while the YoY growth in unit value of world and India caseinate imports declined in 2006 and in 2011 (Figure 2.92).



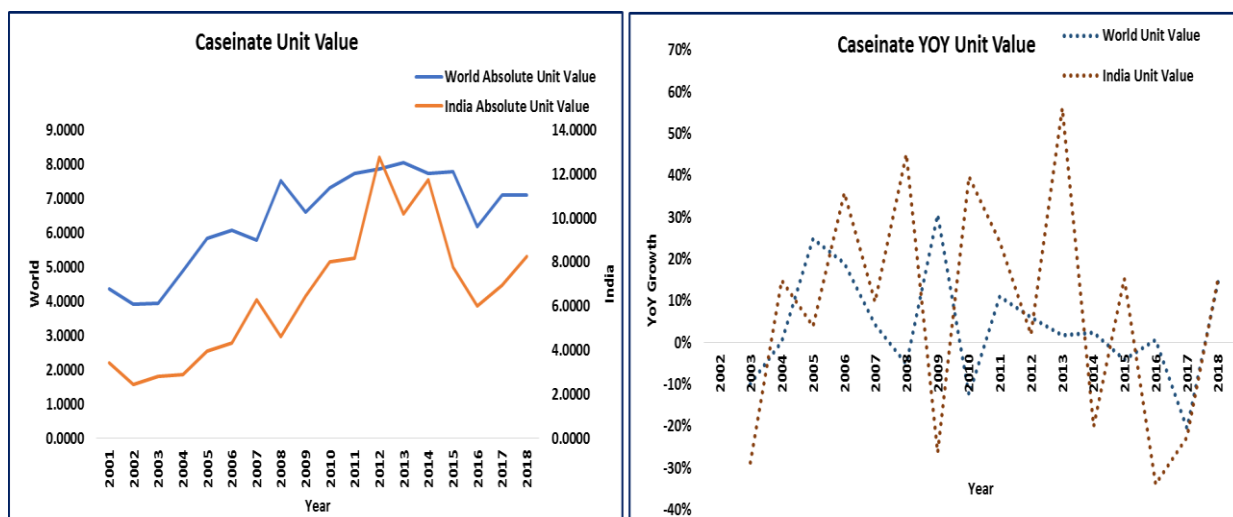


Figure 2. 92 Caseinate (350190) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

### Caseinate Price Trends

According to OECD- FAO reports (2001-2018), Caseinate prices increase in 2003-04 partly due to adverse weather conditions which negatively affected the milk production in Oceania mainly dairy product exporting countries. During the second half of 2005, the prices of caseinate was declined as in 2004 there were record high prices wherein farmers responded by buying more cows and milk production increases which was reflected in condensed milk prices in late 2005. The increase in prices of casein in 2007 were due to increasing population and income with growing popularity of the dairy products. In 2008-09 due to global economic crisis, there was decline in caseinate prices. In 2010-11 there was increase in caseinate prices due to increase in demand. In 2012, there was decline in caseinate prices due to increased global milk production. In 2013 end, there was rise in prices due to China strong import demand. In 2015, there was decrease in prices due to lower import demand from China and due to increasing production in EU, US and Oceania. In 2016-17, draught and adverse weather restricted production in Oceania pasture-based system reduced the production in New Zealand and Australia. Thereby increase in caseinate prices. Global supply-demand balances are responsible for decline in prices in 2018.

### Lactose Pharmaceuticals

#### Lactose Pharmaceuticals (170211)

##### Exports

In case of export 170211, the YoY change in quantity and value in case of world remain constant with slight fluctuation while the YoY change in quantity and value of India's is following a similar pattern i.e. whenever the YoY change in quantity has increased the value has also increased. While exporting 170211, the India's YoY change in value and quantity is following the world pattern (Figure 2. 93).

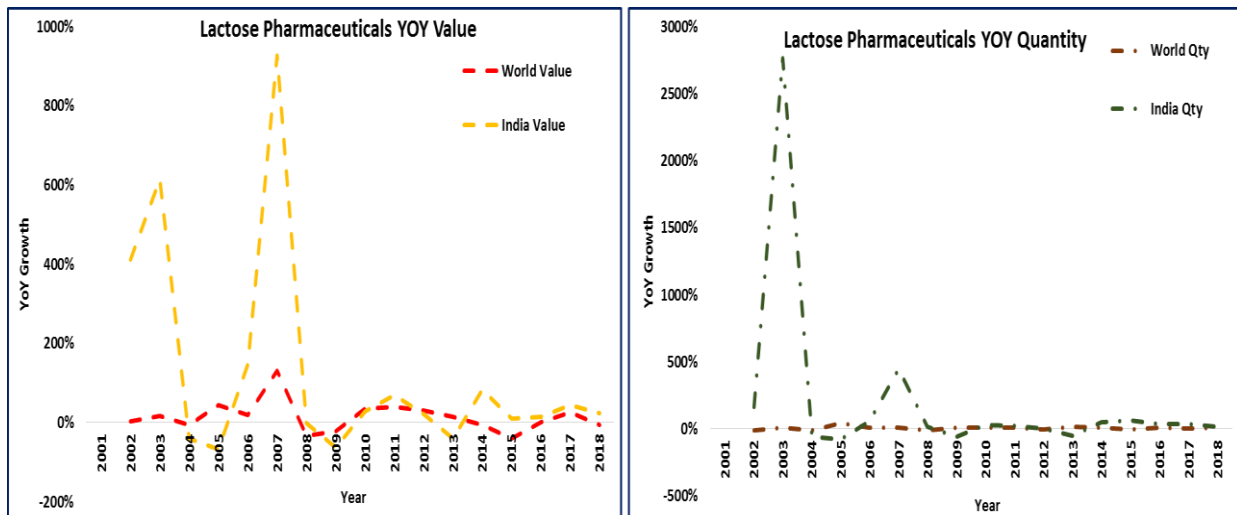


Figure 2. 93 Lactose Pharmaceuticals (170211) exports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2017, unit value of world lactose pharmaceuticals exports and India rise by 19.52% and 6.71% respectively. In 2018, the unit value of world lactose pharmaceuticals exports declines by 12.90% and in India lactose pharmaceuticals exports there was a slight export decline by 6.38%. The YoY growth in unit value of world and India lactose pharmaceuticals exports increased in 2004-05, 2008, 2010-11 and in 2016-17 while the YoY growth in unit value of world and India lactose pharmaceuticals exports declined in 2003, 2006-07, 2014-15 and in 2018 (Figure 2. 94).

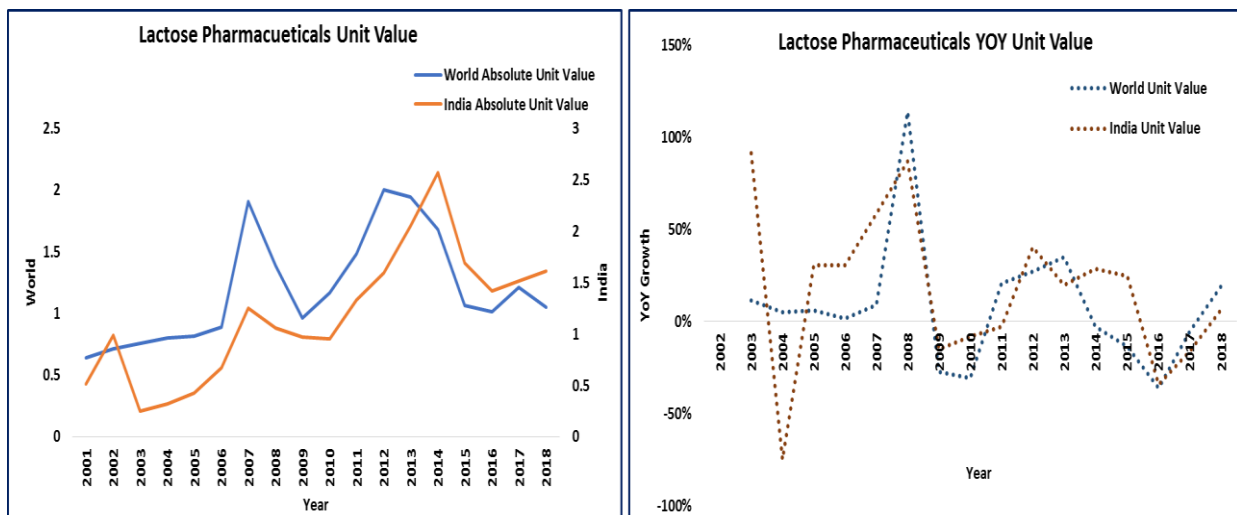


Figure 2. 94 Lactose pharmaceuticals (170211) exports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

## Imports

The YoY change in quantity and value of India's 170211 as well as world import is following a similar pattern i.e., whenever the YoY change in quantity has increased the value has also increased; except for some years such as 2007, 2012, 2015 (Figure 2. 95).

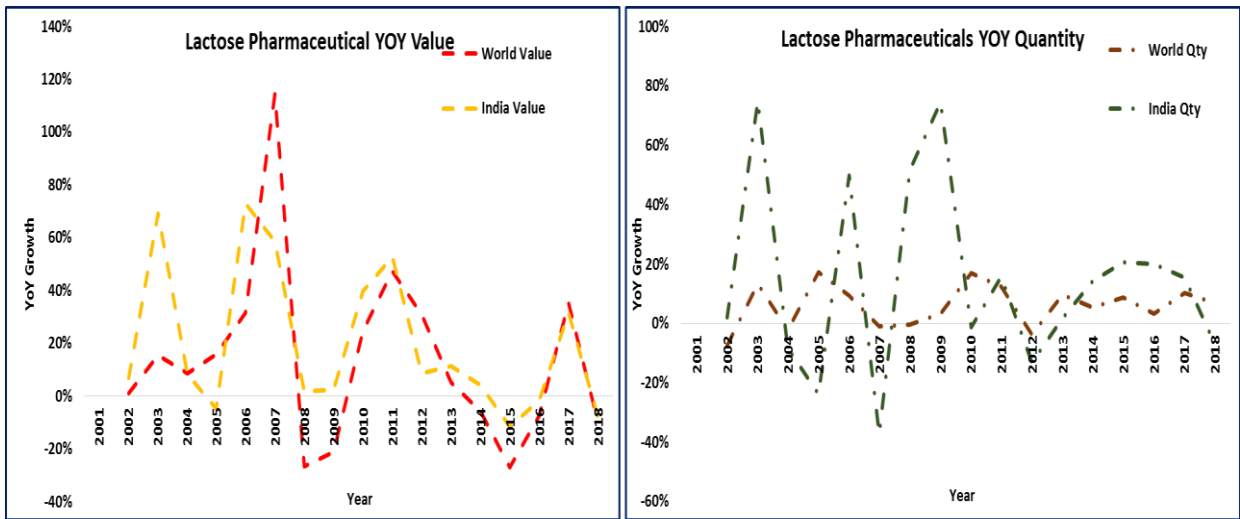


Figure 2.95 Lactose pharmaceuticals (170211) imports YoY value and YoY quantity  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

In 2016-2017, there was rise in world and India lactose pharmaceuticals imports while in 2018, there was a decline in world and India lactose pharmaceuticals imports by -15.64% and -1.10% respectively. The YoY growth in unit value of world and India lactose pharmaceuticals imports increased in 2004, 2007, 2010 and in 2016-17 while the YoY growth in unit value of world and India lactose pharmaceuticals imports declined in 2003, 2008, 2014-15, and 2018 (Figure 2.96).

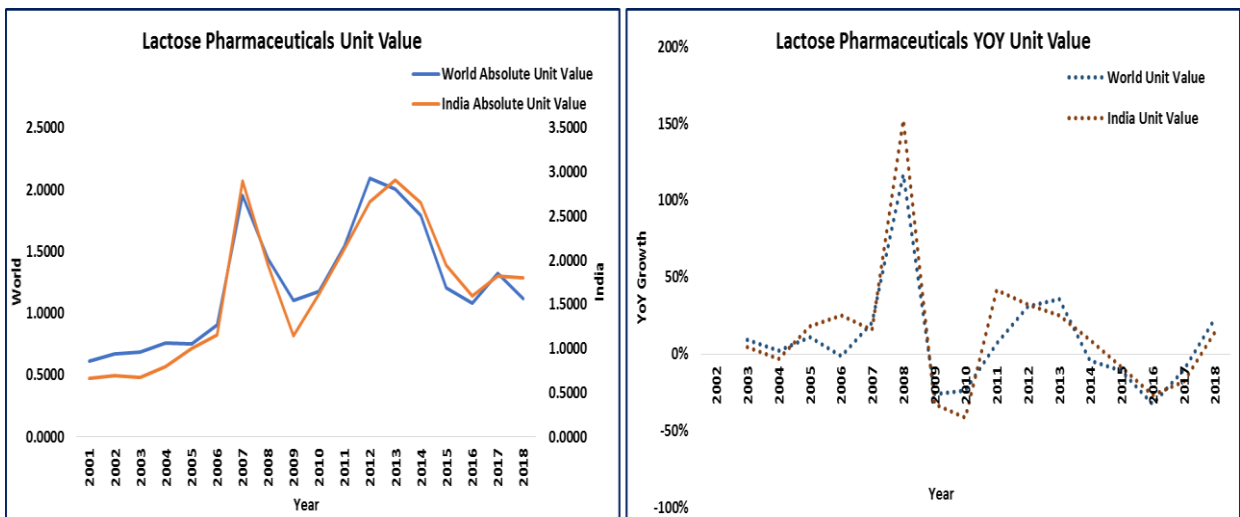


Figure 2.96 Lactose pharmaceuticals (170211) imports unit value and YoY unit value  
 Source: ITC Trade map, International Trade Centre (2019), Geneva

**Lactose Pharmaceutical Price Trends**

According to OECD- FAO reports (2001-2018), adverse weather conditions negatively affected the milk production in Oceania that resulted in increase in the prices of lactose pharmaceutical in 2004. In 2008, lactose pharmaceutical prices were high due to increase in demand. In 2010-11 there was increase in

lactose pharmaceutical prices due to increase in demand. In 2015, there was decrease in prices due to lower import demand from China and due to increasing production in EU, US and Oceania. In 2016-17, draught and adverse weather restricted production in Oceania pasture-based system reduced the production in New Zealand and Australia resulted in increase in lactose pharmaceutical prices.

## 2.5 Unit Value Overview: India vs Competitors

The unit value analysis given in section 2.4, revealed difference in India's and World's unit price level. We further analysed India's important existing markets wrt to unit value offered by India vis-a vis its competitors. India's top 5 exported products are 040590 (Fats and oils derived from milk, and dehydrated butter and ghee (excluding natural butter, recombined butter and whey butter), 040210-SMP (Milk and cream in solid forms, of a fat content by weight of  $\leq 1.5\%$ ), 040510 (Butter (excluding dehydrated butter and ghee), 190110 (infant food) and 350110 (casein).

040590 (ghee), is India's one of the top exported products. The top markets where India exports ghee are UAE, USA, Australia and Saudi Arabia. Unit value comparison is available in Table 2.1. While exporting ghee, India targets the Indian diaspora in these countries. If we compare the average unit value of India, it is not the lowest. The maximum amount it is sending to USA, however USA is also importing 040590 in large quantity from Mexico. Similarly, other countries like Saudi Arabia is importing large amount of ghee (040590) from New Zealand and France at a better price than India offers. The difference in India and its major competitor's unit value is about \$2000/ton.

Table 2. 1: Unit value comparison of India vs its competitors-040590 (Ghee)

| Products | India's top Markets      | India vis-a vis competitors | Average Unit Price 2014-2018 (US Dollar/Ton) | Imported Quantity 2018 (tons) |
|----------|--------------------------|-----------------------------|--|-------------------------------|
| 040590   | United Arab Emirates     | India                       | 6,289  | 5,234                         |
|          |                          | New Zealand                 | 4,628  | 3,366                         |
|          |                          | Netherland                  | 6,038  | 508                           |
|          | United States of America | India                       | 6,274  | 5,875                         |
|          |                          | New Zealand                 | 4,590  | 5,240                         |
|          |                          | Mexico                      | 5,068  | 7,133                         |
|          | Australia                | India                       | 6,364  | 936                           |
|          |                          | New Zealand                 | 4,502  | 5,280                         |
|          |                          | Malaysia                    | 8,626  | 158                           |
|          | Saudi Arabia             | India                       | 6,132  | 940                           |
|          |                          | France                      | 6,026  | 2,724                         |
|          |                          | New Zealand                 | 4,702  | 7,189                         |

Source: ITC Trade map, International Trade Centre (2019), Geneva

Similarly, unit value comparison of Skimmed Milk Powder between India and its competitors is given in Table 2. 2. The unit value at which India is exporting to its important markets is comparable to its competitors' price. However, it is important to note that despite of a competitive price in SMP category, the quantity which India is exporting is not comparable to what New Zealand, Australia and USA are exporting.

*Table 2. 2: Unit value comparison of India vs its competitors: 040210 (SMP)*

| Products     | India's top Markets  | India vis-a vis competitors | Average Unit Price 2014-2018 (US Dollar/Ton) | Imported Quantity 2018 (tons) |
|--------------|----------------------|-----------------------------|--|-------------------------------|
| 40210        | Bangladesh           | India                       | 2,637  | 17,449                        |
|              |                      | Australia                   | 2,068  | 5,168                         |
|              |                      | Czech Republic              | 2,485  | 7,325                         |
|              | Afghanistan          | India                       | 2,287  | 9,037                         |
|              |                      | Pakistan                    | 2,806  | 3,324                         |
|              |                      | Ireland                     | 2,251  | 5,324                         |
|              | Malaysia             | India                       | 2,755  | 2,612                         |
|              |                      | New Zealand                 | 2,953  | 36,950                        |
|              |                      | USA                         | 2,541  | 30,911                        |
|              |                      | Australia                   | 2,354  | 11,302                        |
|              | United Arab Emirates | India                       | 2,832  | 1,269                         |
|              |                      | Germany                     | 2,570  | 6340                          |
|              |                      | New Zealand                 | 2,717  | 8,907                         |
| Saudi Arabia |                      | 5,864                       | 4,260  |                               |

*Source: ITC Trade map, International Trade Centre (2019), Geneva*

The third most important product which India exports is in the infant food category. Infant milk (190110) is also one of the largest trade products in the world. India's export of 190110 is confined to only neighbouring countries like Bangladesh, Nepal and Bhutan. The details of unit value are given in Table 2. 3.

*Table 2. 3: Unit value comparison of India vs its competitors:190110 (Infant milk Powder)*

| Products | India's top Markets | India vis-a vis competitors | Average Unit Price 2014-2018 (US Dollar/Ton) | Imported Quantity 2018 (tons) |
|----------|---------------------|-----------------------------|--|-------------------------------|
| 190110   | Bangladesh          | India                       | 3,998  | 4,433                         |
|          |                     | Belgium                     | 4,130  | 1,090                         |
|          |                     | Australia                   | 6,855  | 155                           |
|          | Nepal               | India                       | 4,092  | 1,254                         |
|          |                     | Oman                        | 4,850  | 2                             |
|          | Bhutan              | India                       | 4,399  | 858                           |

| Products | India's top Markets      | India vis-a vis competitors | Average Unit Price 2014-2018 (US Dollar/Ton) | Imported Quantity 2018 (tons) |
|----------|--------------------------|-----------------------------|--|-------------------------------|
|          | United States of America | India                       | 3,556  | 1,852                         |
|          |                          | Ireland                     | 6,959  | 2641                          |
|          |                          | Chile                       | 2,887  | 1,673                         |
|          |                          | Netherland                  | 3,033  | 1,195                         |

Source: ITC Trade map, International Trade Centre (2019), Geneva

Table 2. 4 depicts the unit value analysis of India vs its competitors. It is observed that, in terms of price India is exporting at a lower price than its competitors. However, the quantity India is exporting is very low. For Example, if we look at USA, Netherland is supplying 20,000 ton at \$7410/ton whereas, India is exporting only 3666 ton at \$6902 /ton.

Table 2. 4: Unit value comparison of India vs its competitors: 350110 (Casein)

| Products | India's top Markets      | India vis-a vis competitors | Average Unit Price 2014-2018 (US Dollar/Ton) | Imported Quantity 2018 (tons) |
|----------|--------------------------|-----------------------------|--|-------------------------------|
| 350110   | United States of America | India                       | 6,902  | 3,666                         |
|          |                          | New Zealand                 | 7,410  | 20,096                        |
|          |                          | Ireland                     | 11,120                                       | 12,398                        |
|          | Thailand                 | India                       | 6,550  | 500                           |
|          |                          | Ukraine                     | 7,048  | 57                            |
|          |                          | China                       | 7,644  | 55                            |
|          | Philippines              | India                       | 6,244  | 217                           |
|          |                          | New Zealand                 | 7,151  | 1,613                         |
|          |                          | Ireland                     | 6,555  | 401                           |
|          | Germany                  | India                       | 6,489  | 150                           |
|          |                          | New Zealand                 | 6,432  | 3717                          |
|          |                          | Ireland                     | 6,664  | 2,912                         |
|          |                          | Ukraine                     | 6,242  | 1,942                         |

Source: ITC Trade map, International Trade Centre (2019), Geneva

## 2.6 Conclusion

The chapter explored the export-import trend in terms of value and quantity of India Vs the world. India's product wise export and import trend in terms of value and quantity (Y-O-Y) of Butter oil, Bulk and Pack milk, Cream, Cheese and Casein does not follow the world trend. However, product categories such as SMP, Cream (040150), Condensed milk, Butter, Buttermilk, Whey Powder, Cheese (040620, 040630 and 040690), Caseinate, Lactose Pharmaceuticals, Infant milk and Yoghurt follows the world trend during

2009-2018 (Refer Table 2. 5). Similarly, the chapter also explored the unit value comparison of India Vs World during 2009-2018. A rising price trend is observed during 2010, 2013, and 2017 whereas a declining price trend is observed during 2009, 2012 and 2015. For the years 2011, 2014, 2016 and 2018 no change in unit price trend is observed. The list of products following these trends are given in Table 2. 6.

*Table 2. 5: Export Import Trend (Value and Quantity) India Vs World: 2009-2018*

| <b>Export Import Trend of India Vs World (2009-2018)</b> |   |
|--|---|
| <b><i>Follows the World Trend</i></b>                    | <b><i>Does not follow World Trend</i></b> |
| SMP  | Butter Oil                                |
| Cream (040150)   | Bulk and Pack Milk                        |
| Condensed Milk   | Cream (040130, 040140)                    |
| Butter   | Cheese (040610)                           |
| Butter Milk  | Casein                                    |
| Whey Powder  |   |
| Cheese (040620,040630,040690)                            |   |
| Caseinate  |   |
| Lactose Pharmaceuticals                                  |   |
| Infant Milk  |   |
| Yoghurt  |   |

*Table 2. 6: Unit Value Comparison India Vs World (2009-2018)*

| <b>Unit Value Comparison India Vs World</b>                   |  |
|---|--|
| <b><i>Rising Price Trend during 2010, 2013 &amp; 2017</i></b> | <b><i>Declining Price Trend during 2009, 2012 &amp; 2015</i></b> |
| Bulk and Pack Milk  | Butter Oil   |
| Cream (040130, 040140)  | Casein   |
| Cheese (040610, 040620, 040630, 040690)                       | SMP  |
| Butter Milk   | Cream (040150)   |
| Caseinate   | Condensed Milk   |
| Infant Milk   | Butter   |
|   | Whey Powder  |
|   | Lactose Pharmaceuticals  |
|   | Yoghurt  |

The reason for rise and decline in rates are due to the changes in demand and supply. India's unit value comparison with its major competitors shows that, for few product categories like SMP and Casein. India is price competitive, though quantity to the exportable markets need to be increased and quality remains a concern. If India can supply price competitive product maintaining international quality standards, then it's not difficult to withstand competitors like Australia, New Zealand, Netherland, Germany and USA.

# **CHAPTER 3: IMPACT OF EXPORT PROMOTION SCHEMES AND ITS WTO COMPATIBILITY ON INDIAN DAIRY SECTOR**

## **3.1 Background**

Dairy Industry in India is a recipient of numerous central and state government sponsored schemes. This chapter attempts to present a comprehensive overview of the dairy related schemes offered by the central and state governments, strives to assess their impact on the dairy sector, identifies the shortcomings and endeavours to suggest policy level interventions to make the schemes and their implementation more effective. The chapter also evaluates the schemes for their WTO compatibility and what governments can do to overcome non-compatibility with WTO requirements.

## **3.2 Introduction**

There are several export-oriented schemes under India's Foreign Trade Policy (FTP) 2015-20. Majority of these schemes are common across industry, which means these schemes can be availed by almost every Indian exporter irrespective of the sector. FTP deals with schemes that offer duty credit scrips, duty exemption and duty remission to exporters. Apart from export promotion schemes, agencies such as Department of Animal Husbandry and Dairying (DAHD) and Agricultural & Processed Food Products Export Development Authority (APEDA) offers assistance to exporters in the form of assistance for capital expenditure, assistance for skill development and capacity building, assistance for entrepreneurship development and many more. The Ministry of Food Processing Industries (MoFPI) also provides a host of financial assistance to food processing companies under Pradhan Mantri Kisan Sampada Yojna (PMKSY) to supplement agriculture and modernize processing and decrease agri-waste.

The chapter examines whether these schemes are capable of delivering the expected outcomes in terms of overall development of dairy production in India. Additionally, the conformity of the central and state government schemes with WTO norms will be assessed so that the purpose of export promotion policies are not defeated due to non-compliance in the long run for Indian dairy exporters. The major objectives of this chapter are to analyse various aspects related to the policy measures for India's dairy industry and to understand the impact of these schemes on the overall development of the dairy sector.

## **3.3 Overview of Major Centrally Sponsored Schemes**

There have been constant efforts to strengthen India's dairy sector in order to make it more competent in the entire dairy value chain process. Table 3. 1 provides detailed information regarding prominent central



sponsored schemes which can be availed by the dairy industry, the implementing agency/body, beneficiaries, type of the assistance provided, objectives/purpose of the schemes as well as the WTO compatibility has been presented. Most of these schemes provides assistance to the Farmers/Manufacturers/Exporters in the following forms.

- Subsidies (Back ended and front ended)
- Credit Financing Support
- Grants and Financial Aids
- Performance Incentives/Awards
- Technical Assistance
- Free Provisions of Articles/Consumables

These schemes cover almost every aspects of the dairy business value chain such as

- Fodder Development
- Breeding, Conservation and Rearing of milch animals
- Capacity Building and Skill Development
- Strengthening of Production and Procurement Infrastructure
- Establishment of ICT and Communication Technologies in Dairy Sector
- Quality Assurance and Food Safety
- Lab Testing of Milk Products
- Cold Chain Strengthening
- Marketing Assistance and Incentives for Exports of Dairy Products from India

A considerable portion of these scheme are aimed at benefiting the rural economy which relies heavily on agro-produce such as dairy. Incentives like backend subsidies for setting up of animal units, credit assistance for entrepreneurship, strengthening of procurement infrastructure at rural areas and backward areas are quintessential for the overall development of the sector. These incentives apart from enabling farmers or rural producers also benefit processing companies and exporters.

Many of these schemes intend to transform the conventional method of dairy farming into a more modern and sustainable approach. Components such as the implementation of ICT, setting up of high-quality labs, selective breeding, breed conservation, strengthening of cold chain infrastructure, adoption of modern food safety and quality assurance practices etc, suggests government's aspiration for achieving a holistic development of the dairy sector through these schemes.

*Table 3. 1 Centrally Sponsored Schemes for Dairy Sector*

| S.No | Extended By | Name of The Scheme                               | Beneficiaries   | Type(s) of Assistance   | Objective/Purpose   | WTO Compatibility |
|------|-------------|--|---|---|---|-------------------|
| 1    | DAHD        | National Livestock Mission                       | Various Stake Holders in Indian Animal Husbandry Sector   | 1.Back ended subsidy for setting up of Dairy Units<br>2.Credit assistance for for setting up of Dairy Units   | 1. To ensure quantitative and qualitative improvement in livestock production systems and capacity building of all stakeholders.<br>2. Improvement of livestock productivity and support projects and initiatives required for that purpose subject.<br>3. sustainable development of livestock sector, focusing on improving availability of quality feed and fodder   | Compatible        |
| 2    | DAHD        | National Dairy Plan -Phase I                     | End Implementing Agencies, Dairy Cooperatives, Producer Companies etc   | 1. Financial/Technical Assistance for Productivity Enhancement<br>2. Financial Aid for Improving Rural Procurement Infrastructure for dairy<br>3.Financial/Technical Assistance for ICT based systems and Project management and learning | 1. To help increase productivity of milch animals and thereby increase milk production to meet the rapidly growing demand for milk<br>2. To help provide rural milk producers with greater access to the organised milk-processing sector   | Compatible        |
| 3    | DAHD        | Dairy Entrepreneurship Development Scheme (DEDS) | Farmers, NGOs, Individual Entrepreneurs, Companies, Groups of Organized and Un-Organized Sector, Self Help Groups, Dairy cooperative Societies, Milk Unions, Milk Federations | 1.Back ended subsidy and Credit for purchase of Milch Animals, Purchase of production/procurement infrastructure,   | 1. Generation of Self Employment and Infrastructure Development in Dairy<br>2. Encouraging modern practices in dairy farming along with conservation and development of good breeding stock   | Compatible        |
| 4    | DAHD        | Rashtriya Gokul Mission                          | Rural cattle and buffalo keepers in the country   | Farmers incentives/competitions for best practices  | 1. Development and conservation of indigenous breeds<br>2. Breed improvement programme for indigenous cattle breeds to improve their genetic makeup and increase the stock;<br>3. Enhancement of milk production and productivity<br>4. Up gradation of nondescript cattle using elite indigenous breeds like Gir, Sahiwal, Rathi, Deoni, Tharparkar, Red Sindhi<br>5. Distribution of disease free high genetic merit bulls for natural service. | Compatible        |

| S.No | Extended By | Name of The Scheme   | Beneficiaries   | Type(s) of Assistance  | Objective/Purpose  | WTO Compatibility   |
|------|-------------|--|---|--|--|---|
| 5    | DAHD        | Entrepreneurship Development and Employment Generation(EDEG)Scheme                       | All dairy farmers in the country  | Subsidy for purchase of Cattles/calf's   | 1. Encourage Entrepreneurship development and improvement of production and productivity through technology up gradation   | Compatible  |
| 6    | DAHD        | National Programme for Dairy Development (NPDD)  | State Cooperative Dairy Federations/ District Cooperative Milk Producers Union. | 1.Grants for Strengthening Procurement and Cold Chain Infrastructure<br>2.Grants/Assistance for setting up and strengthening of Laboratories | 1. To create and strengthen infrastructure for production of quality milk including cold chain infrastructure, Procurement, Processing and Marketing of Milk and Milk Products   | Compatible  |
| 7    | DAHD        | Dairy Processing & Infrastructure Development Fund (DIDF)                                | Milk processing plants, producer owned and controlled institutions              | 1. Long Term Credit assistance for Dairy processing Plants, producer owned and controlled institutions                                       | 1. To modernize the milk processing plants and machinery<br>2. To create additional infrastructure for processing more milk.<br>3. To create additional milk processing capacity for increased value addition in dairy products.<br>4. To bring efficiency in dairy processing plants<br>5. To help the producer owned and controlled institutions to increase their share of milk,<br>6. To help the producer owned and controlled institutions to consolidate their position as dominant player in the organised liquid milk market and to make increased price realisation to milk producers. | Compatible  |
| 8    | MoCI        | Merchandise Exports from India Scheme for dairy (Scheme discontinued for dairy products) | All exporters in India  | Subsidy for exports of dairy Products  | 1. To offset infrastructural inefficiencies and the associated costs of exporting products produced in India giving special emphasis on those which are of India's export interest and have the capability to generate employment and enhance India's competitiveness in the world market.   | Considered for discontinuation due to Objection raised in WTO |
| 9    | MoCI        | Export Promotion of Capital Goods Scheme (EPCG)  | All exporters in India  | Incentives Contingent on Export Performance  | 1. Increasing exports by providing concessions for imports of capital goods or production  | Considered for discontinuation due to Objection raised in WTO |
| 10   | MoCI        | Post Export EPCG Duty Credit Scrip Scheme  | All exporters in India  | Incentives Contingent on Export Performance  | 1. Increasing exports by providing concessions for imports of capital goods for production   | Considered for discontinuation due to Objection raised in WTO |

| S.No | Extended By | Name of The Scheme  | Beneficiaries  | Type(s) of Assistance  | Objective/Purpose   | WTO Compatibility     |
|------|-------------|---|--|--|---|-----------------------|
| 11   | MoFPI       | Food Safety & Quality Assurance Infrastructure Scheme (PMKSY)   | Exporters and Manufacturers in food processing sector  | Financial Assistance for Food Safety/Quality infrastructure    | <ol style="list-style-type: none"> <li>Promoting the creation of food testing facilities to support the surveillance system of food regulator, timely analysis of samples and ensure compliance of international and domestic standards on food in case of exports as well as imports.</li> <li>To motivate the food processing industry for adoption of food safety and quality assurance mechanisms such as TQM including ISO 9000, ISO 22000, HACCP, GMP, GHP</li> </ol> | Compatible            |
| 12   | MoFPI       | Scheme for Integrated Cold Chain and Value Addition Infrastructure (PMKSY)  | Partnership/ Proprietorship Firms, Companies, Corporations, Cooperatives, Self Help Groups (SHGs), Farmer Producer Organizations (FPOs), NGOs, Central/State PSUs, etc. with business interest in cold chain solutions and also by those who manage supply chain | Financial Assistance for Cold chain Infrastructure             | <ol style="list-style-type: none"> <li>The objective of the scheme is to provide integrated cold chain, preservation and value addition OF infrastructure facilities without any break, from the farm gate to the consumer in order to reduce post-harvest losses of horticulture and non-horticulture agri-produce.</li> </ol>   | Compatible            |
| 13   | APEDA       | Assistance for purchase of insulated reefer transport units   | Exporters and other agencies   | Financial Assistance for Cold chain Infrastructure             | <ol style="list-style-type: none"> <li>Strengthening of Cold Chain infrastructure</li> </ol>  | Compatible up to 2023 |
| 14   | APEDA       | Assistance for Implementation and Certification of Quality and Food Safety Management Systems   | Exporters and other agencies   | Financial Assistance for Technical /Procurement Infrastructure | <ol style="list-style-type: none"> <li>Adherence to Food safety compliance.</li> <li>Harmonization with International standards including payment of fee to International auditors / inspectors, ensuring traceability of the products.</li> </ol>  | Compatible up to 2023 |
| 15   | APEDA       | Assistance for strengthening of Technical and Managerial Skills   | Exporters and other agencies   | Financial Assistance for Capacity Development                  | <ol style="list-style-type: none"> <li>Capacity building, development of stakeholder.</li> </ol>  | Compatible up to 2023 |
| 16   | APEDA       | Assistance for Testing of Water, Soil, Residue of pesticides, Veterinary drugs, Hormones, Toxins, Heavy Metal Contaminants, Microbial count etc | APEDA registered exporters   | Financial Assistance for Quality Assurance and Safety          | <ol style="list-style-type: none"> <li>Ensuring quality and food safety compliance</li> </ol>   | Compatible up to 2023 |

| S.No | Extended By | Name of The Scheme   | Beneficiaries   | Type(s) of Assistance   | Objective/Purpose  | WTO Compatibility     |
|------|-------------|--|---|---|--|-----------------------|
| 17   | APEDA       | Assistance for setting up laboratory for export testing and in-house lab equipment's                   | APEDA recognized Labs and Registered Exporters  | Financial Assistance for Quality Assurance Infrastructure                         | 1. Strengthening laboratory infrastructure for export certification and Ensuring in-house quality  | Compatible up to 2023 |
| 18   | APEDA       | Development and Dissemination of database market intelligence  | Exporters in the food Processing Industry   | Assistance for development of ICT technologies for market access                  | 1. Enable direct linkages among producers / processors and exporters/export markets  | Compatible up to 2023 |
| 19   | APEDA       | Participation in Fairs/Events// buyer-seller meets / reverse buyer seller meets./Trade Delegation      | Exporters in the food Processing Industry   | Subsidises Participation in Trade fairs/Buyer seller meets abroad and in India    | 1. Promote and enhance visibility of Indian products in the international market   | Compatible up to 2023 |
| 20   | APEDA       | Assistance for Product Development, R&D, Enhancement of Traceability/etc.                              | Exporters and Manufacturers in food processing sector   | Assistance for development of New Technologies                                    | 1. Development of standards of packaging, development of transport protocol (air/sea), development of products having Geographical Indication, tagging of animals, R&D etc                           | Compatible up to 2023 |
| 21   | APEDA       | Assistance for New Market/Product Development through conducting feasibility studies/IPR outside India | Only APEDA registered exporters, Central / State Govt. Agencies, Trade Chambers are eligible for assistance under this scheme | 1. Financial Assistance for Market Accesses 2. Financial Assistance for Marketing | 1. To help the exporters in international marketing, especially in areas such as exploring new/potential markets<br>2. Helping exporters to increase their brand visibility in the overseas markets. | Compatible up to 2023 |

*Note : Apart from the above schemes Any milk incentives to milk producers that creates disadvantage to a foreign company Indian market can be challenged in the WTO dispute resolution mechanism*

*Source: Department of Animal Husbandry & Dairying (2019). <http://dahd.nic.in/>. Government of India; Operational Guidelines for the Medium Term Expenditure Framework 2017-18 to 2019-20. Agricultural & Processed Food Products Export Development Authority (2019). Government of India; Ministry of Food Processing Industries (2019). Government of India. <https://www.mofpi.nic.in/>; Directorate General of Foreign Trade (DGFT), MoC&I, Government of India (2019); National Dairy Development Board (2019).*

### 3.4 Overview of Major State Sponsored Schemes

Similar to central sponsored schemes, there are state government schemes for dairy sector. States such as Gujarat and Karnataka have the maximum number of schemes related to animal husbandry and dairying (Table 3. 2). Most of these state government sponsored schemes are implemented by government departments/agencies in the state such as dairy development boards, animal husbandry departments and even the milk federations in that state.

Details of some the important features of the schemes by major milk producing states such as the implementing agency/body, eligible beneficiaries, type of the assistance provided, objectives/purpose of the schemes as well as their WTO compatibility can be comprehended from the table. It is worth noticing that, India's largest milk producing state of Gujarat has the highest number of state sponsored schemes related to dairy sector.

Most of these schemes provide assistance to the Farmers/Manufacturers in the following forms

- Subsidies (Back ended and front ended)
- Credit Financing Support
- Grants and Financial Aids
- Performance incentives/Awards
- Technical Assistance
- Free Provisions of Articles/consumables for Animal husbandry

These schemes put together cover a considerable quota of the critical components in the Indian dairy industry, including the following;

- Fodder Development
- Breeding, Conservation and Rearing of milch animals
- Grants for Socially/Financially Backward Communities
- Strengthening of Production and Procurement Infrastructure
- Establishment of ICT and Communication Technologies in Dairy Sector
- Quality Assurance and Food Safety
- Lab Testing of Milk Products
- Cold chain Strengthening
- Marketing Assistance in the form of subsidies

*Table 3. 2 Major State Sponsored Schemes for Dairy Sector*

| S.No | Extended by              | Name of The Scheme   | Beneficiaries                                       | Type(s) of Assistance                | Objective/Purpose   | WTO Compatibility |
|------|--------------------------|--|---|--------------------------------------|---|-------------------|
| 1    | Uttar Pradesh Government | Rural Infrastructure facility for Dairy Development Program                              | Dairy Cooperatives in Uttar Pradesh                 | Infrastructure Development           | Improving Rural Infrastructure facility for Dairy Development                                   | Compatible        |
| 2    | Uttar Pradesh Government | Information technology and Computerization Scheme  | Dairy Cooperatives in Uttar Pradesh                 | Infrastructure Development           | Improving communication Infrastructure facility between dairy federations, unions and societies | Compatible        |
| 3    | Uttar Pradesh Government | Incentive to milk producer members under Cooperatives (Gokul Puraskar)                   | Dairy Farmers in Uttar Pradesh                      | Performance Incentives               | Increasing Competency of dairy farming  | Compatible        |
| 4    | Uttar Pradesh Government | Loan to PCDF for establishment of Milk Powder Plant at Kanpur                            | Pradesh Cooperative Dairy Federation, Uttar Pradesh | Credit Finance assistance            | Infrastructure development of Uttar Pradesh Milk Federation                                     | Compatible        |
| 5    | Uttar Pradesh Government | Loan to PCDF for its Strengthening   | Pradesh Cooperative Dairy Federation, Uttar Pradesh | Credit Finance assistance            | Infrastructure development of Uttar Pradesh Milk Federation                                     | Compatible        |
| 6    | Gujarat Government       | Concentrate feeding for pregnant Animal (Cow+ Buffalo) of Schedule tribe animal keeper   | Schedule tribe animal keeper in Gujarat             | Financial assistance for Animal Feed | Improving Animal Health   | Compatible        |
| 7    | Gujarat Government       | Concentrate feeding for pregnant Animal (Cow+ Buffalo) of Schedule Cast animal keeper    | Schedule Caste animal keeper in Gujarat             | Financial assistance for Animal Feed | Improving Animal Health   | Compatible        |
| 8    | Gujarat Government       | Concentrate feeding for pregnant Animal (Cow+ Buffalo) of General category animal keeper | Animal keeper in Gujarat                            | Financial assistance for Animal Feed | Improving Animal Health   | Compatible        |

| S.No | Extended by        | Name of The Scheme  | Beneficiaries   | Type(s) of Assistance                                       | Objective/Purpose   | WTO Compatibility |
|------|--------------------|---|---|---|---|-------------------|
| 9    | Gujarat Government | Assistance for purchase of milking machine of schedule tribe animal keepers   | Schedule tribe animal keeper in Gujarat                     | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |
| 10   | Gujarat Government | Assistance for purchase of milking machine of schedule cast animal keepers  | Schedule Caste animal keeper in Gujarat                     | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |
| 11   | Gujarat Government | Assistance for purchase of milking machine of General Category animal keepers   | animal keeper in Gujarat                                    | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |
| 12   | Gujarat Government | Assistance for Dudhghar Construction for the village Dairy co-operative societies of schedule tribe area of the state | Dairy co-operative societies Schedule Tribe area in Gujarat | Financial assistance for General Infrastructure             | Improving Rural Capital Infrastructure of dairy Societies/co-operatives | Compatible        |
| 13   | Gujarat Government | Assistance for Dudhghar Construction for the village Dairy co-operative societies of schedule cast area of the state  | Dairy co-operative societies Schedule Caste area in Gujarat | Financial assistance for General Infrastructure             | Improving Rural Capital Infrastructure of dairy Societies/co-operatives | Compatible        |
| 14   | Gujarat Government | Assistance for Dudhghar Construction for the village Dairy co-operative societies of the state                        | Dairy co-operative societies in Gujarat                     | Financial assistance for General Infrastructure             | Improving Rural Capital Infrastructure of dairy Societies/co-operatives | Compatible        |
| 15   | Gujarat Government | Assistance for Go-down Construction for the village Dairy co-operative societies of schedule tribe area of the state  | Dairy co-operative societies Schedule Tribe area in Gujarat | Financial assistance for Procurement/Storage Infrastructure | Improving Rural Capital Infrastructure of dairy Societies/co-operatives | Compatible        |



| S.No | Extended by        | Name of The Scheme   | Beneficiaries   | Type(s) of Assistance                                       | Objective/Purpose   | WTO Compatibility |
|------|--------------------|--|---|---|---|-------------------|
| 16   | Gujarat Government | Assistance for Go-down Construction for the village Dairy co-operative societies of schedule cast area of the state                                | Dairy co-operative societies Schedule Caste area in Gujarat | Financial assistance for Procurement/Storage Infrastructure | Improving Rural Capital Infrastructure of dairy Societies/co-operatives | Compatible        |
| 17   | Gujarat Government | Assistance for Go-down Construction for the village Dairy co-operative societies of the state  | Dairy co-operative societies in Gujarat                     | Financial assistance for Procurement/Storage Infrastructure | Improving Rural Capital Infrastructure of dairy Societies/co-operatives | Compatible        |
| 18   | Gujarat Government | Assistance for the purchase of Automatic milk collection system (AMCS) for the village Dairy co-operative societies of tribe area of the state     | Dairy co-operative societies Schedule Tribe area in Gujarat | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |
| 19   | Gujarat Government | Assistance for the purchase of Automatic milk collection system (AMCS) for the village Dairy co-operative societies of schedule caste of the state | Dairy co-operative societies Schedule Caste area in Gujarat | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |
| 20   | Gujarat Government | Assistance for the purchase of Automatic milk collection system (AMCS) for the village Dairy co-operative societies of the state                   | Dairy co-operative societies in Gujarat                     | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |
| 21   | Gujarat Government | Assistance for the purchase of Bulk Milk Cooler (BMC) for the village Dairy co-operative societies of tribe area of the state                      | Dairy co-operative societies Schedule Tribe area in Gujarat | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |
| 22   | Gujarat Government | Assistance for the purchase of Bulk Milk Cooler (BMC) for the village Dairy co-operative societies of schedule cast of the state                   | Dairy co-operative societies Schedule Caste area in Gujarat | Financial assistance for Procurement Infrastructure         | Improving Rural Milk Procurement Infrastructure                         | Compatible        |

| S.No | Extended by        | Name of The Scheme  | Beneficiaries   | Type(s) of Assistance                                    | Objective/Purpose   | WTO Compatibility |
|------|--------------------|---|---|--|---|-------------------|
| 23   | Gujarat Government | Assistance for the purchase of Bulk Milk Cooler (BMC) for the village Dairy co-operative societies of the state                                       | Dairy co-operative societies in Gujarat                     | Financial assistance for Procurement Infrastructure      | Improving Rural Milk Procurement Infrastructure               | Compatible        |
| 24   | Gujarat Government | Assistance for the purchase of Milk Adulteration Detection Machine (MADM) for the village Dairy co-operative societies of tribe area of the state     | Dairy co-operative societies Schedule Tribe area in Gujarat | Financial assistance for Milk Testing/Lab Infrastructure | Improving Rural Milk Testing/Quality Assurance Infrastructure | Compatible        |
| 25   | Gujarat Government | Assistance for the purchase of Milk Adulteration Detection Machine (MADM) for the village Dairy co-operative societies of schedule caste of the state | Dairy co-operative societies Schedule Caste area in Gujarat | Financial assistance for Milk Testing/Lab Infrastructure | Improving Rural Milk Testing/Quality Assurance Infrastructure | Compatible        |
| 26   | Gujarat Government | Assistance for the purchase of Milk Adulteration Detection Machine (MADM) for the village Dairy co-operative societies of the state                   | Dairy co-operative societies in Gujarat                     | Financial assistance for Milk Testing/Lab Infrastructure | Improving Rural Milk Testing/Quality Assurance Infrastructure | Compatible        |
| 27   | Gujarat Government | Assistance for fodder Miniskirts (Tribal Areas)   | Dairy farmers in Tribal Areas of Gujarat                    | Free Provision for Animal Fodder seeds                   | Improving Animal Fodder Availability                          | Compatible        |
| 28   | Gujarat Government | Assistance for fodder Miniskirts (General Category)   | Dairy farmers Gujarat                                       | Free Provision for Animal Fodder seeds                   | Improving Animal Fodder Availability                          | Compatible        |
| 29   | Gujarat Government | Milk Enhancement Program for Mulch Animals  | Dairy farmers Gujarat                                       | Free Provision of Animal Vaccine/Health kit              | Improving Animal Health                                       | Compatible        |

| S.No | Extended by        | Name of The Scheme  | Beneficiaries   | Type(s) of Assistance   | Objective/Purpose   | WTO Compatibility |
|------|--------------------|---|---|---|---|-------------------|
| 30   | Gujarat Government | Compensation for Accidental Animal Death Scheme.  | Dairy farmers Gujarat   | Financial assistance to buy new cattle in case of death of old cattle | Financial Support to Rural Dairy Farmers  | Compatible        |
| 31   | Gujarat Government | Milk Yield Competition Scheme   | Dairy farmers in Gujarat who owns Gir and Kankrej Cattle      | Performance Incentives  | 1. Identify and locate availability of good quality and high milk producing milk animals for breeding purpose.<br>2.To educate Cattle owners for rearing the cattle in scientific manner and to make awareness and encourage Livestock owner to keep good high yield animal for the year. | Compatible        |
| 32   | Gujarat Government | Scheme for subsidy on interest for establishment of 1 to 20 milch animal farm                   | General Public in Gujarat                                     | Subsidy on Interest on loans  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 33   | Gujarat Government | Scheme for subsidy on interest for establishment of 1 to 20 milch animal farm (for SC)          | General Public in Gujarat falls under Schooled caste Category | Subsidy on Interest on loans  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 34   | Gujarat Government | Scheme for subsidy on interest for establishment of 1 to 20 milch animal farm (for ST)          | General Public in Gujarat falls under Schedule Tribe Category | Subsidy on Interest on loans  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 35   | Gujarat Government | Scheme for Assistance to Establish 12 Milch animal farm for self-employment, (for all category) | General Public in Gujarat                                     | Subsidy on Interest on loans  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |

| S.No | Extended by               | Name of The Scheme   | Beneficiaries   | Type(s) of Assistance   | Objective/Purpose   | WTO Compatibility |
|------|---------------------------|--|---|---|---|-------------------|
| 36   | Gujarat Government        | Incentive to Owners of A.I. Born Female calf through pure breeding in indigenous cow | Livestock Owners of Gujarat State.  | Financial Incentives for A.I and Breed Development                                    | To avoid decrease in numbers of local pure breed of Cow namely Gir and Kankrej and Increase it to be properly maintained in the state | Compatible        |
| 37   | Karnataka Government      | Pashu Bhagya   | Livestock Owners of Karnataka State.  | 1.Subsidy on Interest on loans<br>2.Subsidy on payment of insurance premium on cattle | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 38   | Karnataka Government      | Suvarna Karnataka Go Samrakshana   | Selected Non-Governmental Organizations in Karnataka  | Grants for A.I and Breed Development  | conservation and development of local breeds  | Compatible        |
| 39   | Karnataka Government      | Special Livestock Development Plan   | Small, marginal farmers and Agricultural Labourers in Karnataka   | Subsidy on Purchase of Milch Animals  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 40   | Karnataka Government      | Special Component Plan   | Schedule caste farmers in Karnataka   | Subsidy on Purchase of Milch Animals  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 41   | Karnataka Government      | Tribal sub plan:   | Schedule Tribe farmers in Karnataka   | Subsidy on Purchase of Milch Animals  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 42   | Karnataka Milk Federation | Amrutha Yojane   | Schedule caste farmers, Schedule tribe farmers, Devadasi, Destitute, Widows/Agricultural labourer and also to the general category women in Karnataka | Subsidy on Purchase of Milch Animals  | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |

| S.No | Extended by          | Name of The Scheme  | Beneficiaries   | Type(s) of Assistance  | Objective/Purpose                                   | WTO Compatibility |
|------|----------------------|---|---|--|---|-------------------|
| 43   | Karnataka Government | Fodder development scheme:  | Dairy Farmers in Karnataka  | Free Provision for Animal Fodder seeds                                     | Improving Animal Fodder Availability                | Compatible        |
| 44   | Karnataka Government | Interest subsidy on loans availed by dairy farmers and shepherds above 6% of interest amount:                           | Dairy Farmers in Karnataka  | Subsidy on Purchase of Milch Animals                                       | Encouraging Dairy Entrepreneurship/ Self Employment | Compatible        |
| 45   | Tamil Nadu           | Adi Dravidar and Tribal Welfare Department scheme   | Schedules Caste, Schedule Tribe in Tamil Nadu   | Grants for purchase of Milch Animals                                       | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |
| 46   | Tamil Nadu           | Capital subsidy for Micro, Small and Medium Manufacturing Enterprises Set Up In Backward Areas & agro Based Enterprises | Micro, Small And Medium Manufacturing Enterprises Set Up In Backward Areas & Agro Based Enterprises | Subsidy for Capital Infrastructure of dairy Processing/Manufacturing Units | Encouraging Dairy Entrepreneurship/Self Employment  | Compatible        |

*Note : Apart from the above schemes Any milk incentives to milk producers that creates disadvantage to a foreign company Indian market can be challenged in the WTO dispute resolution mechanism*

*Source: Dairy Development Department, Uttar Pradesh (2019); Directorate of Animal Husbandry, Government of Gujarat (2019); Department of Animal Husbandry and Fisheries, Government of Karnataka (2019); Animal Husbandry, Dairying and Fisheries Department, Government of Tamil Nadu (2019).*

### **3.5 WTO Compatibility of India's Export Promotion Schemes**

The elimination of all forms of agricultural export subsidies constituted one of the United Nations Sustainable Development Goals launched in the year 2015. In fact, the mandate of the Doha Development Round intends to correct and prevent trade restrictions and distortions in world agricultural markets, including elimination of all forms of agricultural export subsidies and all export measures with equivalent effect.

Presently India has umpteen number of schemes which are intended to strengthen the dairy sector. These schemes can be broadly classified into central and state schemes. It is important to assess whether or not these schemes are conforming to the WTO norms, especially when the dairy products are exported. This chapter presents a brief background about the norms related to export promotion schemes under the WTO agreement and whether the schemes launched by India is in compliance with the WTO.

The norms that govern whether a country's export promotion schemes are WTO compliant come under the purview of the Agreement on Subsidies and Countervailing Measures (SCM), WTO Agreement on Agriculture and the outcomes of various ministerial level meetings of WTO.

#### ***3.5.1 Subsidies and countervailing measures (SCM) of WTO***

The agreement contains provisions related to SCM from Articles 1 to 32. Three key elements that define a subsidy:

- i. Financial Contribution/Income or Price Support
- ii. By Government or Any public body
- iii. Which confers benefits, and

It is specific, i.e. related to enterprise specific, industry specific, group of enterprises or industries, region specific, prohibited subsidies are deemed to be specific.

The term financial contribution constitutes:

- Direct Transfer of Funds (Grants, Loans, Equity Infusion)
- Potential Direct Transfer of Funds or Liabilities (Loan Guarantee)
- Government Revenue that is otherwise foregone or not collected (Tax Credits, Import Duty Exemption)
- Provision of Goods and Services other than general infrastructure
- Purchase of Goods

The concept of benefit means advantage to the recipient and not cost to government. This is assessed by means of whether the financial contribution places the recipient in a more advantageous position than

would have been the case, but for the financial contribution/ is the financial contribution provided on terms which are more advantageous than those that would have been available to the recipient on the market.

Subsidies under the SCM agreement fall under three categories which include,

- Prohibited Subsidies
- Actionable Subsidies
- Non-actionable Subsidies

Table 3. 3 details the list of activities included under each of the categories

*Table 3. 3 Types of subsidies*

| Prohibited Subsidies  | Actionable Subsidies   | Non-actionable Subsidies  |
|---|--|---|
| Export Subsidies – Subsidies that are contingent on Export Performance except as provided in the Agreement on Agriculture | It is specific   | No action can be taken against subsidies that are non-specific which is determined on the basis of:<br>1.Certain assistance for research activities by higher education institutes<br>2.Assistance to certain disadvantaged regions |
| Import Substitution Subsidies – Contingent on use of domestic over imported goods   | Causes adverse effects (injury, serious prejudice, nullification and impairment) | Criteria are neutral, economic in nature and horizontal in appreciation<br><br>- No predominant use of certain enterprises<br>- Eligibility based on objective criteria or conditions<br>-Eligibility automatic                     |

*Source: agreement on subsidies and countervailing measures, World Trade Organization (2019)*

### 3.5.1.1 Countries and Binding of the Agreement of SCM

The provisions of the agreement of SCM (Subsidies and Countervailing Measures) do not apply to:

- a. Least developed countries as such by the United Nations which are members of the WTO
- b. Developing countries whose GNP per capita per annum has reached \$1000 per annum.

Under Article 3.1 of the SCM agreement, developing countries with gross per capita of \$1,000 per annum are not entitled to provide export subsidies that are contingent upon export performance.

Given the fact that India has already crossed the \$1000 GNP per capita per annum threshold, India will have to phase out all schemes in contravention to the SCM soon. Additionally, there is already a move to revise the status of India from developing to an emerging economy. In case India's status is revised to an emerging economy, India will have to withdraw many of the subsidies that it provides under the guise of export promotion schemes.

### ***3.5.2 Export Subsidy Commitments under WTO Agreement on Agriculture***

The negotiations on WTO Agreement on Agriculture have resulted in four main portions of the Agreement: the Agreement on Agriculture itself; the Concessions and Commitments members are to undertake on Market Access, Domestic Support and Export Subsidies; the Agreement on Sanitary and Phytosanitary Measures and the Ministerial Decision concerning Least-Developed and Net Food-Importing Developing Countries.

According to the WTO's Agreement on Agriculture, member countries are required to reduce the value of direct export subsidies to a level 36 per cent below the 1986-90 base period level over the six-year implementation period, and the quantity of subsidised exports by 21 per cent over the same period. In the case of developing countries, the reductions are two-thirds those of developed countries over a ten-year period (with no reductions applying to the least-developed countries) and subject to certain conditions, there are no commitments on subsidies to reduce the costs of marketing exports of agricultural products or internal transport and freight charges on export shipments .

Article 9.1 in the WTO Agreement on Agriculture has notified the following categories of subsidies subjected to reduction commitments

1. The provision by governments or their agencies of direct subsidies, including payments-in-kind, to a firm, to an industry, to producers of an agricultural product, to a cooperative or other association of such producers, or to a marketing board, contingent on export performance;
2. The sale or disposal for export by governments or their agencies of non-commercial stocks of agricultural products at a price lower than the comparable price charged for the like product to buyers in the domestic market;
3. Payments on the export of an agricultural product that are financed by virtue of governmental action, whether or not a charge on the public account is involved, including payments that are financed from the proceeds of a levy imposed on the



agricultural product concerned or on an agricultural product from which the exported product is derived;

4. The provision of subsidies to reduce the costs of marketing exports of agricultural products (other than widely available export promotion and advisory services) including handling, upgrading and other processing costs, and the costs of international transport and freight;
5. Internal transport and freight charges on export shipments, provided or mandated by governments, on terms more favourable than for domestic shipments;
6. Subsidies on agricultural products contingent on their incorporation in exported products.

### ***3.5.3 Tenth WTO Ministerial Conference in Nairobi (Nairobi Package)***

WTO's 10th Ministerial Conference held in Nairobi on December 2015 paved the way for elimination of agricultural export subsidies, new rules for export credits, and decisions on international food aid and exporting state trading enterprises.

WTO considers the decision to fully eliminate any form of agricultural export subsidies as an historic decision which constitutes a significant step in the reform of agricultural trade. Outcome of the Nairobi conference ensures that countries will not resort to trade-distorting export subsidies and thereby levels the playing field for agriculture exporters. These decision are considered to be helpful for farmers in poor countries who cannot afford to compete with rich countries which artificially boost their exports through subsidization.

Highlights of the Nairobi Package is given below

1. Developed countries will immediately remove export subsidies, except for a handful of agriculture products, and developing countries will do so by 2018, with a longer time-frame in some limited cases
2. Developing countries will keep the flexibility of covering marketing and transport costs for agriculture exports until the end of 2023
3. The poorest and food-importing developing countries will enjoy additional time to cut export subsidies

4. The Agreement also includes maximum repayment terms for export financing programmes for agriculture exporters supported by the government, provisions on state trading enterprises engaging in agriculture trade
5. Disciplines to ensure that food aid does not displace trade and does not cause adverse effects on domestic production.

In light of the above, the tables below (Table 3. 4 and Table 3. 5 ) tries to evaluate whether the schemes that are currently available for Indian Dairy Industry are WTO compliant or not and the reason thereof:

Table 3. 4 WTO Compatibility of Central Schemes for Dairy Sector

| Scheme Details |             |   | Subsidies with WTO's Reduction Commitments        |  |  |  |   | Subsidies Prohibited under WTO   |  |   | Actionable subsidies Under WTO   |
|----------------|-------------|---|---|--|--|--|---|--|--|---|--|
| S.No           | Extended by | Name of The Scheme  | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 1              | DAHD        | National Livestock Mission  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 2              | DAHD        | Dairy Entrepreneurship Development Scheme (DEDS)                    | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 3              | DAHD        | Rashtriya Gokul Mission   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 4              | DAHD        | National Dairy Plan -Phase 1  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 5              | DAHD        | Entrepreneurship Development and Employment Generation (EDEG)Scheme | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 6              | DAHD        | National Programme for Dairy Development (NPDD)                     | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 7              | DAHD        | Dairy Processing & Infrastructure Development Fund (DIDF)           | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |             |  | Subsidies with WTO's Reduction Commitments        |  |  |  |   | Subsidies Prohibited under WTO   |  |   | Actionable subsidies Under WTO   |
|----------------|-------------|--|---|--|--|--|---|--|--|---|--|
| S.No           | Extended by | Name of The Scheme   | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 8              | MoC         | Merchandise Exports from India Scheme for dairy (Scheme discontinued for dairy products) | YES   | NO   | YES  | YES  | NO  | NO   | NO   | NO  | NO   |
| 9              | MoC         | Export Promotion of Capital Goods Scheme (EPCG)  | YES   | NO   | NO   | NO   | NO  | NO   | YES  | NO  | NO   |
| 10             | MoC         | Post Export EPCG Duty Credit Scrip Scheme  | YES   | NO   | NO   | NO   | NO  | NO   | YES  | NO  | NO   |
| 11             | MoFPI       | Food Safety & Quality Assurance Infrastructure Scheme                                    | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 12             | MoFPI       | Scheme for Integrated Cold Chain and Value Addition Infrastructure                       | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 13             | APEDA       | Assistance for purchase of reefer Units  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 14             | APEDA       | Assistance for Implementation of Quality and Food Safety Management Systems              | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 15             | APEDA       | Assistance for strengthening of Technical and Managerial Skills                          | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |             |   | Subsidies with WTO's Reduction Commitments        |  |  |  |   | Subsidies Prohibited under WTO   |  |   | Actionable subsidies Under WTO   |
|----------------|-------------|---|---|--|--|--|---|--|--|---|--|
| S.No           | Extended by | Name of The Scheme  | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 16             | APEDA       | Assistance for Testing of Water, Soil, Residue of pesticides, Veterinary drugs, Hormones, Toxins, Heavy Metal Contaminants, Microbial count | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 17             | APEDA       | Assistance for setting up laboratory use and lab equipment's for export testing   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 18             | APEDA       | Development and Dissemination of database & market intelligence   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 19             | APEDA       | Participation in Fairs/Events   | NO  | NO   | NO   | YES  | NO  | NO   | NO   | NO  | NO   |
| 20             | APEDA       | Assistance for Product Development, R&D, Traceability   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 21             | APEDA       | Assistance for New Market/Product & Foreign IPR   | NO  | NO   | NO   | YES  | NO  | NO   | NO   | NO  | NO   |

Source: Author's Analysis based on Various WTO Documents and databases (2019)

Table 3. 5 WTO Compatibility of State Schemes for Dairy

| Scheme Details |                               |  | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|--|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme   | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 1              | Uttar Pradesh Government      | Rural Infrastructure facility for Dairy Development                          | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 2              | Uttar Pradesh Government      | Information technology and Computerization Scheme                            | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 3              | Uttar Pradesh Government      | Incentive to milk producer members under Cooperatives (Gokul Puraskar)       | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 4              | Uttar Pradesh Government      | Loan to PCDF for establishment of Milk Powder Plant at Kanpur                | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 5              | Uttar Pradesh Government      | Loan to PCDF for its Strengthening   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 6              | Gujarat Government            | Concentrate feeding for pregnant Animal of Schedule tribe (ST) animal keeper | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |                               |  | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|--|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme   | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 7              | Gujarat Government            | Concentrate feeding for pregnant Animal of Schedule Cast (SC) animal keeper              | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 8              | Gujarat Government            | Concentrate feeding for pregnant Animal of General category animal keeper                | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 9              | Gujarat Government            | Assistance for purchase of milking machine of ST animal keepers                          | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 10             | Gujarat Government            | Assistance for purchase of milking machine of SC animal keepers                          | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 11             | Gujarat Government            | Assistance for purchase of milking machine of General Category animal keepers            | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 12             | Gujarat Government            | Assistance for Dudhghar Construction for village Dairy co-operative societies of ST area | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |                               |  | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|--|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme   | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 13             | Gujarat Government            | Assistance for Dudhghar Construction for village Dairy co-operative societies of SC area   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 14             | Gujarat Government            | Assistance for Dudhghar Construction for the village Dairy co-operative societies          | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 15             | Gujarat Government            | Assistance for Go-down Construction for village Dairy co-operative societies(ST area)      | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 16             | Gujarat Government            | Assistance for Go-down Construction for the village Dairy co-operative societies (SC area) | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 17             | Gujarat Government            | Assistance for Go-down Construction for the village Dairy co-operative societies           | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |



| Scheme Details |                               |  | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|--|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme   | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 18             | Gujarat Government            | Assistance for purchase of Automatic milk collection system for village Dairy co-operatives of ST area                   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 19             | Gujarat Government            | Assistance for the purchase of Automatic milk collection system for the village co-operatives of SC area                 | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 20             | Gujarat Government            | Assistance for the purchase of Automatic milk collection system for the village Dairy co-operative societies             | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 21             | Gujarat Government            | Assistance for the Bulk Milk Cooler(ST Area)   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 22             | Gujarat Government            | Assistance for the purchase of Bulk Milk Cooler (BMC) for the village Dairy co-operative societies of schedule cast area | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |                               |   | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|---|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme  | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 23             | Gujarat Government            | Assistance for the purchase of Bulk Milk Cooler (BMC) for the village Dairy co-operative societies  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 24             | Gujarat Government            | Assistance for the purchase of Milk Adulteration Detection Machine (MADM) for the village Dairy co-operative societies of tribe area of the state | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 25             | Gujarat Government            | Assistance for the purchase of Milk Adulteration Detection Machine (MADM) for the village Dairy co-operative societies of schedule cast           | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 26             | Gujarat Government            | Assistance for the purchase of Milk Adulteration Detection Machine (MADM) for the village Dairy co-operative societies                            | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 27             | Gujarat Government            | Assistance for fodder Minikits (Tribal Areas)   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |                               |  | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|--|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme   | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 28             | Gujarat Government            | Assistance for fodder Minikits (General)   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 29             | Gujarat Government            | Milk Enhancement Program for Milch Animals   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 30             | Gujarat Government            | Compensation for Accidental Animal Death Scheme.                                       | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 31             | Gujarat Government            | Milk Yield Competition Scheme  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 32             | Gujarat Government            | Scheme for subsidy on interest for establishment of 1 to 20 milch animal farm          | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 33             | Gujarat Government            | Scheme for subsidy on interest for establishment of 1 to 20 milch animal farm (for SC) | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 34             | Gujarat Government            | Scheme for subsidy on interest for establishment of 1 to 20 milch animal farm (for ST) | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |                               |   | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|---|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme  | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 35             | Gujarat Government            | Scheme for Assistance to Establish 12 Milch animal farm for self-employment, (for all category) | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 36             | Gujarat Government            | Incentive to Owners of A.I. Born Female calf through pure breeding in indigenous cow            | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 37             | Karnataka Government          | Pashu Bhagya  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 38             | Karnataka Government          | Suvarna Karnataka GoSamrakshana   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 39             | Karnataka Government          | Special Livestock Development Plan  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 40             | Karnataka Government          | special component plan  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 41             | Karnataka Government          | Tribal sub plan:  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 42             | Karnataka Milk Federation     | Amrutha Yojane  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

| Scheme Details |                               |   | Subsidies with WTO's Reduction Commitments        |  |  |  |   |  | Subsidies Prohibited under WTO                                   |   | Actionable Subsidies Under WTO   |
|----------------|-------------------------------|---|---|--|--|--|---|--|--|---|--|
| S.No           | Implementing Body/ Government | Name of The Scheme  | Direct subsidies contingent on export performance | Export by governments agencies of non-commercial stocks of agricultural products at a price lower than domestic market | Payments on the export of an agro-produce that are financed by virtue of governmental action | Provision of subsidies to reduce the costs of marketing exports of agricultural products | Internal transport charges on export shipments, provided or mandated by governments (favourable than domestic shipment) | Subsidies on agricultural products contingent on their incorporation in exported products. | Subsidies that require recipients to meet certain export targets | Subsidies that require recipients to use domestic goods instead of imported goods | Domestic subsidies that can hurt exporters trying to compete in the subsidizing country's domestic market. |
| 43             | Karnataka Government          | Fodder Development Scheme   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 44             | Karnataka Government          | Interest subsidy on loans availed by dairy farmers and shepherds  | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 45             | Tamil Nadu                    | Adi Dravidar and Tribal Welfare Department scheme   | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |
| 46             | Tamil Nadu                    | Capital subsidy for Micro, Small and Medium Manufacturing Enterprises Set Up In Backward Areas & agro Based Enterprises | NO  | NO   | NO   | NO   | NO  | NO   | NO   | NO  | NO   |

Source: Author's Analysis based on Various WTO Documents and data bases (2019)

### **3.6 Overview of Major WTO Disputes**

A dispute arises when a member government believes another member government is violating an agreement or a commitment that it has made in the WTO. The WTO has one of the most active international dispute settlement mechanisms in the world. Since 1995, 593 disputes have been brought to the WTO and over 350 rulings have been issued. The Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU) is framed according to Final Agreements concluded at the Uruguay Round. Member countries can request for consultation at WTO if they believe that any trading partner within WTO has violated WTO's trade related agreements. Third party countries can also join with original complainant in order to strengthen the suit if they have also found the suit aligns with their trade interests.

Since the inception of Dispute Settlement Mechanism, India was a party to a total number of 57 Disputes till the beginning of 2020. Out of which, in 25 disputes India acted as a complainant whereas 32 disputes were registered against India by other member countries of WTO. There has been numerous disputes in the WTO regarding international dairy trade between its member nations. However, there has been no cases registered in the WTO DSM with respect to the Indian dairy sector. Some of the prominent dairy related disputes along with their details are provided in the form of Table 3. 6. It is notable that there was no such disputes in WTO which is specific to the Indian dairy industry. Moreover, most of the disputes brought against India are related to other commodities internationally traded or against certain trade related policies of the government. Additionally, Table 3. 7 can be referred to augment the understanding on major disputes related to various Tariff and Non-Tariff Barriers affecting international dairy trade such as Import Quotas, Price Control and Technical Barriers to trade. A close introspection of major disputes concerned to Agricultural Commodity trade specific to India is also provided Table 3. 8. Such historic as well as contemporary dispute cases can shed light in formulating trade policies in the coming future.

Table 3. 6 Chronology of WTO Disputes related to Dairy Sector

| DS Code | Dispute Title   | Year | Complainant(s)  | Respondent | Alleged Breaches to the WTO framework   | Description   | Dispute Outcome                                       |
|---------|---|------|---|------------|---|---|---|
| DS356   | Provisional Safeguard Measure on Certain Milk Products / Definitive Safeguard Measure on Certain Milk Products. | 2008 | Argentina, United States  | Chile      | <ol style="list-style-type: none"> <li>1. Article XVI:4 of the WTO Agreement;</li> <li>2. Articles I and XIX of GATT 1994; and</li> <li>3. Articles 2, 3.1, 4, 5.1, 7.1 and 12.2 of the Agreement on Safeguards.</li> </ol>   | On 28 December 2006, Argentina requested consultations with Chile concerning the definitive safeguard measure imposed by Chile on imports of certain milk products from Argentina. Argentina considers that the definitive safeguard measure is inconsistent with:  | Lapse of Authority for the Establishment of the Panel |
| DS329   | Tariff Classification of Certain Milk Products  | 2005 | Mexico  | Panama     | <ol style="list-style-type: none"> <li>1. Art. 4 Agriculture</li> <li>2. Art. I, II, XXVIII GATT 1994</li> </ol>  | Mexico has requested consultations with Panama regarding its Cabinet Decree N. 20 of 17 July 2002 which creates two new tariff subheadings in Panama's National Importation Nomenclature. According to Mexico, this Decree eliminates the existing tariff subheading No. 1901.10.10 for processed milk to which a 5% bound tariff applied pursuant to Panama's WTO Bindings. The Decree further created two new subheadings: No.1901.10.11 (baby formula) with a 0% tariff, and No. 1901.10.19 (all others) with a 65% tariff.  | Mutually agreed solution                              |
| DS275   | Import Licensing Measures on Certain Agricultural Products (Including Dairy)                                    | 2002 | United States, Argentina, Canada, Chile, European Commission, New Zealand | Venezuela  | <ol style="list-style-type: none"> <li>1. Article 4.2 of the Agreement on Agriculture;</li> <li>2. Articles III, X, XI, and XIII of GATT 1994;</li> <li>3. Article 2.1 of the TRIMs Agreement,</li> <li>4. Articles 1.4, 3.2, 3.5, 5.1, 5.2, and 5.3 of the Import Licensing Agreement</li> </ol>   | The United States claimed that Venezuela appears to have established a discretionary import licensing regime for certain Agricultural Products including dairy. It further claimed that, through its import licensing practices, Venezuela has failed to establish a transparent and predictable system for issuing import licenses and has severely restricted and distorted trade in these goods.   | In favour of Complainants                             |
| DS103   | Measures Affecting the Importation of Milk and the Exportation of Dairy Products.                               | 1997 | United States, Argentina, Australia, Mexico, EU                           | Canada     | <ol style="list-style-type: none"> <li>1. AA Art. 9.1(a) (export subsidies – direct subsidies);</li> <li>2. AA Art. 9.1(c) (export subsidies – payments financed by virtue of governmental action)</li> <li>3. AA Art. 10.1 (export subsidies not listed in Art. 9.1)</li> <li>4. GATT Art. II:1(b) (schedules of concessions)</li> </ol> | Canadian government's support system (Special Milk Classes Scheme) for domestic milk production and export, as well as Canada's tariff rate quota ("TRQ") regime for imports of fluid milk. Later during 2001 complainants against filed a dispute against the revised version of the system of government support for domestic milk production and export, as well as Canada's tariff rate quota regime for imports of fluid milk, which were the measures at issue in the original dispute. Canada revised the supply system for sales of domestic milk and a separate scheme governing milk to be sold for export. | In favour of Complainants                             |

| DS Code | Dispute Title   | Year | Complainant(s)       | Respondent           | Alleged Breaches to the WTO framework  | Description   | Dispute Outcome           |
|---------|---|------|----------------------|----------------------|--|---|---------------------------|
| DS98    | Definitive Safeguard Measure on Imports of Certain Dairy Products               | 1998 | European Communities | South Korea          | 1. GATT Art. XIX:1(a) (unforeseen developments):<br>2. SA Art. 4.2(a) and (c) (injury determination – serious injury):<br>3. SA Art. 5.1 (application of safeguard measure): | Definitive safeguard measure on Imports of certain dairy products (skimmed milk powder preparations)  | In favour of Complainants |
| DS133   | Measures Concerning the Importation of Dairy Products and the Transit of Cattle | 1998 | Switzerland.         | Slovak Republic      | 1. Articles I, III, V, X and XI of GATT 1994<br>2. Article 5 of the SPS Agreement,<br>3. Article 5 of the Import Licensing Agreement   | On 11 May 1998, Switzerland requested consultations with the Slovak Republic concerning measures imposed by the Slovak Republic (in particular, a decree of 6 July 1996) with respect to the importation of dairy products and the transit of cattle. Switzerland contended that these measures had a negative impact on Swiss exports of cheese and cattle | Discontinued              |
| DS104   | Measures Affecting the Exportation of Processed Cheese                          | 1997 | United States        | European Communities | 1. Articles 8, 9, 10 and 11 of the Agreement on Agriculture<br>2. Article 3 of the Subsidies and Countervailing Measures (SCM)   | US requested consultations with the EC in respect of export subsidies allegedly granted by the EC on processed cheese without regard to the export subsidy reduction commitments of the EC. The US contended that these measures by the EC distort markets for dairy products and adversely affect US sales of dairy products.                              | Discontinued              |

*Note: DS code is the Dispute Settlement Code According to the WTO DSM Database*

*Source: Dispute settlement gateway, The World Trade Organization (2019), Geneva*



*Table 3.7 Chronology of Major WTO Disputes related to Tariff and Non-Tariff Barriers to Commodity Trade*

| DS Code | Dispute Title  | Year       | Complainant(s)   | Respondent           | Breaches to the WTO framework   | Description  | Dispute Outcome              |
|---------|--|------------|--|----------------------|---|--|------------------------------|
| DS384   | COOL Legislation of the United States  | 2009       | Canada, Argentina, Australia, Brazil, China, Colombia, European Union, Guatemala, India, Japan, Korea, Republic of; Mexico, New Zealand, Peru, Chinese Taipei  | United States        | 1. Art. III:4, IX, IX:2, X:3, XXIII:1(b), X:3(a) GATT 1994<br>2. Art. 2, 2(b), 2(c), 2(e), 2(j) Rules of Origin<br>3. Art. 2, 5, 7 Sanitary and Phytosanitary Measures (SPS)<br>4. Art. 2, 2.1, 2.2, 2.4 Technical Barriers to Trade (TBT).   | : United States' country of origin labelling ("COOL") requirements for beef and pork contained in the Agricultural Marketing Act of 1946, as amended by the Farm Bills 2002 and 2008, and implemented by the USDA through its 2009 Final Rule on Mandatory Country of Origin Labelling (instruments comprising "the COOL measure"); and the letter to "Industry Representative" from the United States Secretary of Agriculture, Thomas J. Vilsack ("Vilsack letter"). | In favour of the Complainant |
| DS290   | Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs | 2003       | United States, Australia, Argentina, Brazil, Canada, China, Chinese Taipei, Colombia, Guatemala, India, Mexico, New Zealand, Turkey  | European Communities | 1. TRIPS Arts. 3, 4, 16, 17 and 24<br>2. GATT Arts. III:4 and XX(d)<br>3. TBT Annex 1.1 and 1.3   | EC Regulation related to the protection of geographical indications and designations of origin ("GIs") affected Agricultural products and foodstuffs exports to the EU region  | In favour of the Complainant |
| DS207   | Price Band System and Safeguard Measures Relating to Certain Agricultural Products             | 2001, 2006 | Argentina, Australia, Brazil, Canada, China, Colombia, Costa Rica, European Communities, Ecuador, El Salvador, Guatemala, Honduras, Japan, Nicaragua, Paraguay, Peru, Thailand, Venezuela, United States | Chile                | 1. DSU Art. 11 (standard of review):<br>2. AA Art. 4.2, footnote 1 (market access)<br>AA Art. 4.2 (market access – conversion of certain measures into ordinary customs duties):<br>3. ATT Art. II:1(b) (schedules of concessions)<br>4. WTO Agreement Art. XVI:4 (WTO conformity of laws, regulations and administrative procedures) | Chile's Price Band System, governed by Rules on the Importation of Goods, through which the tariff rate for products at issue could be adjusted to international price developments if the price fell below a lower price band or rose beyond an upper price band. Even though Chile amended the policy as per the dispute in 2001, it also faced objection in the dispute settlement body in the year 2006.   | In favour of the Complainant |

| DS Code | Dispute Title                                     | Year | Complainant(s)  | Respondent    | Breaches to the WTO framework   | Description   | Dispute Outcome              |
|---------|---|------|---|---------------|---|---|------------------------------|
| DS217   | Continued Dumping and Subsidy Offset Act of 2000  | 2001 | Australia, Brazil, Chile, European Communities, India, Indonesia, Japan, Korea, Thailand, Canada, Mexico, Norway, Hong Kong | United States | 1. ADA Art. 18.1 (specific action against dumping) and ASCM Art. 32.1 (specific action against subsidies):<br>2. ADA Art. 5.4 (initiation of dumping investigation – application by domestic industry)<br>3. ASCM Art. 11.4 (Initiation of subsidy investigation – application by domestic industry):<br>4. WTO Agreement Art. XVI:4 (WTO conformity of laws, regulations and administrative procedures): | US Continued Dumping and Subsidy Act of 2000 under which anti-dumping and countervailing duties assessed on or after 1 October 2000 were to be distributed to the affected domestic producers for qualifying expenditures.  | In favour of the Complainant |
| DS194   | Measures treating exports restraints as subsidies | 2000 | Canada, Australia, European Communities, India  | United States | 1. ASCM Art. 1.1 (a): (1): (iv) (definition of a subsidy – financial contribution):<br>Nature of the US law at issue (mandatory vs. discretionary)  | Treatment of “export restraints” under US countervailing duty (“CVD”) law (statute), in light of the relevant Statement of Administrative Action (“SAA”) and Preamble to CVD Regulations, and relevant United States Department of Commerce (“USDOC”) practice.   | In favour of the Respondent  |
| DS152   | Section 301 of Trade Act by the United States     | 1998 | European Communities  | United States | 1. DSU Art. 23.2(a) and   | US legislation (i.e. Sections 301-310 of the Trade Act of 1974) authorizing certain actions by the Office of the United States Trade Representative (“USTR”), including the suspension or withdrawal of concessions or the imposition of duties or other import restrictions, in response to trade barriers imposed by other countries. | In favour of the Complainant |

Note: DS code is the Dispute Settlement Code According to the WTO DSM Database

Source: Dispute settlement gateway, The World Trade Organization (2019), Geneva

*Table 3. 8 Chronology of Major WTO Disputes related to India (Agricultural Commodity Trade)*

| S/N   | Dispute Title   | Year | Complainant(s)  | Respondent | Alleged Breaches to the WTO framework   | Description   | Dispute Outcome |
|-------|---|------|---|------------|---|---|-----------------|
| DS430 | Measures Concerning the Importation of Certain Agricultural Products by India | 2012 | United States, China, Colombia, Ecuador, European Union, Guatemala, Japan, Viet Nam, Argentina, Australia, Brazil | India      | 1. Art. 2, 2.2, 2.3, 3.1, 5, 5.1, 5.2, 5.5, 5.6, 5.7, 6, 6.1, 6.2, 7, Annex B of Sanitary and Phytosanitary Measures (SPS)<br>2. Art. I, XI GATT 1994 | The United States requested consultations with India with respect to the prohibitions imposed by India on the importation of various agricultural products from the United States purportedly because of concerns related to Avian Influenza. The measures at issue are: the Indian Livestock Importation Act, 1898 (9 of 1898) ("Livestock Act"); a number of orders issued by India's Department of Animal Husbandry, Dairying, and Fisheries pursuant to the Livestock Act, most recently S.O. 1663(E); as well as any amendments, related measures, or implementing measures  | On going        |
| DS428 | Safeguard measures on imports of cotton yarn (other than sewing thread)       | 2012 | India   | Turkey     | 1.Art. XIX:1 GATT 1994<br>2.Art. 2.1, 2.20(e), 4.2(b), 4.2(c), 4.1(c), 2, 3, 4, 5.1, 5, 6, 7.1, 7.2, 7.3, 7.5, 12.1(c) Safeguards                     | India challenges the definitive safeguard measures on imports of cotton yarn (other than sewing thread) imposed by Turkey with effect from 15 July 2008 for a period of three years. It also challenges the provisional safeguard measures imposed by Turkey retroactively and challenges the extension of the period of application of the definitive safeguard measures retroactively. Finally, India challenges the underlying investigation, any amendments, replacements, related or implementing acts or measures to the above. With respect to the definitive and provisional safeguard measures imposed by Turkey, India alleges that Turkey imposed provisional safeguard measures without making the required determination in the relevant review and concluded such review by recommending the continuation of the measures. Concerning the extension of the safeguard measures, India believes that Turkey imposed the extension of the measures prior to making a determination, contrary to its obligations under the Agreement on Safeguards. | On going        |

| S/N   | Dispute Title                                   | Year | Complainant(s)  | Respondent           | Alleged Breaches to the WTO framework  | Description   | Dispute Outcome               |
|-------|---|------|---|----------------------|--|---|-------------------------------|
| DS360 | Additional Import Duties by India               | 2007 | United States, Australia, Chile, European Communities, Japan, Viet Nam                            | India                | 1.GATT Arts. II:1(b) and II:2(a) (schedules of concessions):   | Two border charges, consisting of the “Additional Duty” imposed by India on imports of alcoholic beverages (beer, wine, and distilled spirits); and the “Extra-Additional Duty” imposed by India on imports of a wider range of products, including certain agricultural and industrial products, as well as alcoholic beverages.   | In favour of the Respondent   |
| DS343 | Customs Bond Directive by US for Shrimp Imports | 2006 | India, Thailand, Brazil, Chile, China, European Communities, South Korea, Japan, Mexico, Viet Nam | United States        | 1. ADA Art. 18.1 and GATT Ad Art. VI, paras. 2 and 3<br>2.GATT Art. XX(d) (exceptions – necessary to secure compliance with laws)  | The enhanced continuous bond requirement (“EBR”) for Frozen warm water shrimp from India and Thailand   | In favour of the Complainants |
| DS134 | Restrictions on Certain Import Duties on Rice   | 1998 | India   | European Communities | 1. Art. 4 Agriculture<br>2.Art. I, II, III, VIII, XI GATT 1994<br>3.Art. 1, 3 Import Licensing<br>4.Art. 2 Sanitary and Phytosanitary Measures (SPS)<br>5.Art. 2 Technical Barriers to Trade (TBT)<br>6.Art. 1, 2, 3, 4, 5, 6, 7, 11 Customs valuation | India requested consultations with the EC in respect of the restrictions allegedly introduced by an EC Regulation establishing a so-called cumulative recovery system (CRS), for determining certain import duties on rice, with effect from 1 July 1997. India contended that the measures introduced through this new regulation will restrict the number of importers of rice from India, and will have a limiting effect on the export of rice from India to the EC | Discontinued                  |
| DS58  | Import Prohibition of Shrimp by US              | 1996 | India, Malaysia, Pakistan, Thailand   | United States        | 1.GATT Art. XI (prohibition on quantitative restrictions)<br>2.GATT Art. XX(g) (general exceptions – exhaustible natural resources):   | US import prohibition of shrimp and shrimp products from non-certified countries (i.e. countries that had not used a certain net in catching shrimp).   | In favour of the Complainants |

*Note: DS code is the Dispute Settlement Code According to the WTO DSM Database*

*Source: Dispute settlement gateway, The World Trade Organization (2019), Geneva*

### **3.7 Recent Developments on WTO compatibility and India's Export Promotion Schemes**

The United States requested consultations with India concerning certain alleged export subsidy measures On 14 March 2018. The United States claimed that the measures appear to be inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement. On 23 March 2018, Canada and the European Union requested to join the consultations. On 17 May 2018, the United States requested the establishment of a panel. At its meeting on 28 May 2018, the DSB (Dispute Settlement Board) established a panel. Brazil, Canada, China, Egypt, the European Union, Japan, Kazakhstan, Korea, the Russian Federation, Sri Lanka, Chinese Taipei and Thailand reserved their third-party rights. On 16 July 2018, the United States requested the Director-General to compose the panel. On 23 July 2018, the Director-General composed the panel. On 3 December 2018, the Chair of the panel informed the DSB that the beginning of the panel's work had been delayed as a result of a lack of available resources in the Secretariat, and that the panel expected to issue its final report to the parties not before the second quarter of 2019.

US allege that India provides export subsidies through:

1. The Export Oriented Units Scheme and sector specific schemes, including Electronics
2. Hardware Technology Parks Scheme
3. The Merchandise Exports from India Scheme,
4. The Export Promotion Capital Goods Scheme,
5. Special Economic Zones
6. Duty-free imports for exporters program

Adding fuel to the fire, Merchandise Exports from India scheme under Ministry of Commerce and Industry amended Existing Merchandise Exports from India (MEIS) scheme in order to incorporate dairy products to the same. This decision has entitled dairy exporters from India to enjoy 10% subsidy on exports. During the same period, state governments of Gujarat and Maharashtra also announced Rs.50,000 per tonne subsidy for exports of SMP, making the dairy producers from these two states capable of exporting SMP at a price lower than that of international markets. This move has also invited international attention towards the integrity of India's export related policies.

Consistent with Annex VII of the SCM Agreement, India is subject to the obligations of Article 3.1(a) of the SCM Agreement because India's gross national product per capita has reached \$1,000 per annum. Through each program, as reflected in the instruments listed above, (1-6), India provides subsidies

contingent upon export performance. The measures appear to be inconsistent with Article 3.1(a) of the SCM Agreement, and India appears to have acted inconsistently with Article 3.2 of the SCM Agreement. During September 2019, the WTO dispute settlement panel has upheld a US complaint that export subsidy programmes provided by the Indian government violated provisions of the trade body's subsidies and countervailing measures (SCM) pact. Signifying the soundness of the above-mentioned tables on WTO compatibility, India lost the case as per the ruling released by WTO panel on October 2019 and is compelled to withdraw questionable subsidies within 90 to 180 days of the ruling.

### **3.8 Framework for WTO compatible schemes**

Under the Current WTO rules on subsidies, no country is eligible to offer export subsidies if its per capita GNI has crossed \$1,000 for three consecutive years. According to various sources, India crossed the per-capita GNI threshold for three straight years from \$1,051 in 2013 to \$1,178 in 2015. Moreover, the Nairobi package announced in 2015 compels all the developing countries to drop the export subsidies by 2018 with some relaxations on subsidies covering marketing and transport costs for agriculture exports until the end of 2023.

Following types of subsidies are eligible under the SCM Agreement of WTO, which can be extended to the dairy industry

1. Assistance given to Research and Development is compatible given that, the assistance does not exceed 75 per cent of the costs of industrial research or 50 per cent of the costs of pre-competitive development activity. Apart from the cap on assistance, the subsidy can be allocated to the following components
  - a) Costs of personnel (researchers, technicians and other supporting staff employed exclusively in the research activity)
  - b) Costs of instruments, equipment, land and buildings used exclusively and permanently (except when disposed of on a commercial basis) for the research activity)
  - c) Costs of consultancy and equivalent services used exclusively for the research activity, including bought-in research, technical knowledge, patents, etc.
  - d) Additional overhead costs incurred directly as a result of the research activity;
  - e) Other running costs (such as those of materials, supplies and the like), incurred
  - f) Directly as a result of the research activity.

2. Subsidies of which the total ad valorem subsidization of a product that is not exceeding 5 per cent
3. Assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms, provided that the assistance:
  - A) Is a one-time non-recurring measure.
  - B) Is limited to 20 per cent of the cost of adaptation.
  - C) Does not cover the cost of replacing and operating the assisted investment, which must be fully borne by firms.
  - D) Is directly linked to and proportionate to a firm's planned reduction of nuisances and pollution, and does not cover any manufacturing cost savings which may be achieved;
  - E) Is available to all firms which can adopt the new equipment and/or production processes.

Apart from the provisions in the actionable subsidies under SCM agreement, India can offer subsidies/assistance for exporters that covers marketing and transport costs for agriculture exports until 2023, as agreed under Nairobi Package.

WTO compatible subsidies can be broadly classified into following

1. Subsidies for covering marketing costs of exports (until 2023)
2. Subsidies for covering transport costs for agriculture exports (until 2023)
3. Subsidies for R&D (Research and Development)
4. Subsidies for Modernising and Up-gradation
5. Actionable Subsidies which does not exceed 5 percent of total ad volerum

### **3.9 Conclusion**

This chapter provided a comprehensive overview of the dairy related schemes offered by the central and state governments, and strives to assess their impact on the dairy sector. Chapter also identified the shortcomings and endeavoured to suggest policy level interventions to make the schemes and their implementation more effective. The chapter also analysed major schemes that benefited Indian dairy industry and assessed their

WTO compatibility and suggested what governments can do to overcome non-compatibility with WTO requirements.

Among the centrally sponsored schemes the following dairy related schemes were found to be questionable or challengeable in WTO's dispute settlement system for non-conformity. They are:

1. Merchandise Exports from India Scheme
2. The Export Promotion Capital Goods Scheme

Notably most of the state sector side of the schemes are compatible with WTO's norms on export competition and subsidies. The Milk Incentives to Milk Producers Scheme launched by Karnataka government shows a greater probability of getting challenged by other WTO member nations under the category of actionable subsidies.

The dispute raised by United States against India in the WTO infers that the schemes under FTP (2015-20) became a target of violating the provisions under the Agreement for SCM as Indian exporter can only avail financial assistance under the schemes on fulfilling a minimum export obligation. Besides, since India has reached the threshold of GNP per capita per annum of \$1000, it will no longer be able to devise export promotion schemes that contravene the provisions of WTO. Additionally, eradication of subsidies has even become the Sustainable Development Goal (SDG) of the international trade watch dog. Outcomes of 2015 Nairobi ministerial level conference also questions the provision of export subsidies by developing countries. Hence, it would be important for India to devise schemes that fall under the Non-Actionable category which are non-specific, neutral and horizontal across sectors. After analysing the impact of export promotion schemes and its WTO compatibility on Indian dairy sector it is imperative to get insights from free trade agreements (FTA) and impact of those FTA on Indian Dairy Industry.



## **CHAPTER 4: FREE TRADE AGREEMENTS: IMPACT ON INDIAN DAIRY INDUSTRY**

### **4.1 Background**

This chapter intends to present a comprehensive understanding about the international trade agreements which are applicable for the Indian dairy industry. Factors influencing India's international trade in dairy products such as Free Trade Agreements (FTA) and Preferential Trade Agreements (PTA) are discussed in this chapter. The broader aim is to understand the potential benefits arising out of these agreements in order to evaluate the extent to which benefits are availed by Indian dairy sector. The impact of free trade agreements on Indian dairy export is analyzed and presented. The major objectives of this chapter is to comprehend the benefits the trade agreements imparted to the Indian Dairy Export and to evaluate the level of materialization of the tariff benefits under such agreements.

### **4.2 Introduction**

Trade Agreements are tools in international business which is used to reduce the trade and investment barriers between partner countries. In other words, countries signing trade agreements will have easy and prioritized access to partnering country's markets which will ultimately benefit the exporters of both countries. Free Trade Agreements (FTAs) and Preferential Trade Agreements (PTAs) are two of the widely used types of trade agreements among countries. Formulating a trade agreement is a complex journey where economists and policy makers of the partnering countries negotiate for a deal, keeping in mind the strategic and economic interests of their countries. Under trade agreements, agreeing countries usually extends tariff concession to each other making exporters from agreeing countries more competitive than non-agreeing countries. Apart from tariff concessions, trade agreements deal with variety of aspects such as investments, technology transfer, movement of citizens and professionals etc.

### **4.3 India's International Trade Agreements**

India's trade agreements are characterized by the responsiveness to domestic policy made by politicians rather than international market forces (Wouters, et al, 2014). Over the past few decades India has signed numerous trade agreements with various countries and trade blocs. Out of the sixteen trade agreements signed between 1972 and 2011 (Table 4. 1), ten are FTAs (Free Trade Agreement) while six are PTAs (Preferential Trade Agreements). During the period 2003-2011, eleven trade agreements came into force within a span of eight years, indicating the recent influx of trade agreements in India.

Most of the FTAs focus on free flow of goods and services along with investment liberalization, and intellectual property rights protection between the agreeing countries. India’s current foreign trade policy puts more emphasis on diversifying its economic and strategic interest to countries in South East Asia, Africa and Latin America rather than relying heavily on traditional trade partners such as the US and the EU. Even though, negotiations have begun for entering into trade agreements with traditional export markets such as European Union, U K, Canada, Australia etc, the pace of progress has been slow. There are some FTAs for which negotiations have been happening for over a decade and still there has been no conclusion on agreement, such as the India-European Union Free Trade Agreement. The India –EU FTA launched talks in 2007, India – EU trade agreement was suspended<sup>9</sup> in 2013 due to a gap in the level of ambition between the EU and India. Out of the 16 trade agreements already in effect, majority of them are with countries from Asia mostly India’s neighboring countries.

Other than India-MERCOSUR Preferential Trade Agreement and India - Chile Preferential Trade Agreement, India doesn’t have a solid trade facilitation agreement with regions outside of Asia. India’s current Foreign Trade Policy is ambitious in establishing a strong trade relation with in nontraditional markets such as Africa, Latin America. Even though schemes such as Focus Market Scheme are prompting exporters to reach out to unconventional markets, merely relying on short term schemes are not enough until India signs trade agreements with more countries and regions.

*Table 4. 1 List of Trade Agreements in Force (2019)*

| S. No | Name of the Agreement   | FTA/PTA | Year Signed | Year Implemented | No. of Countries | Participating Countries |
|-------|---|---------|-------------|------------------|------------------|-------------------------|
| 1     | India - Japan Comprehensive Economic Partnership Agreement              | FTA     | 2011        | 2011             | 2                | India, Japan            |
| 2     | India - Malaysia Comprehensive Economic Cooperation Agreement           | FTA     | 2011        | 2011             | 2                | India, Malaysia         |
| 3     | India - South Korea Comprehensive Economic Partnership Agreement (CEPA) | FTA     | 2009        | 2010             | 2                | India, South Korea      |

<sup>9</sup> “EU-India trade negotiations” European Commission (2019)

| S. No | Name of the Agreement   | FTA/PTA | Year Signed | Year Implemented | No. of Countries | Participating Countries  |
|-------|---|---------|-------------|------------------|------------------|--|
| 4     | India – ASEAN Trade in Goods Agreement                                | FTA     | 2009        | 2010 -11         | 11               | India, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam |
| 5     | India - Chile Preferential Trade Agreement                            | PTA     | 2006        | 2007             | 4                | India, Chile   |
| 6     | India - Singapore Comprehensive Economic Cooperation Agreement (CECA) | FTA     | 2005        | 2005             | 2                | India, Singapore   |
| 7     | Agreement on South Asian Free Trade Area (SAFTA)                      | FTA     | 2004        | 2006             | 8                | India, Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan Maldives, Afghanistan                            |
| 8     | India-MERCOSUR  | PTA     | 2004        | 2009             | 4                | India, Argentina, Brazil, Paraguay, and Uruguay  |
| 9     | India-Afghanistan Preferential Trade Agreement                        | PTA     | 2003        | 2003             | 2                | India, Afghanistan   |
| 10    | India - Thailand FTA - Early Harvest Scheme (EHS)                     | FTA     | 2003        | 2004             | 2                | India, Thailand  |
| 11    | India- Sri Lanka FTA (ISLFTA)   | FTA     | 1998        | 2000             | 2                | India, Sri-Lanka   |
| 12    | SAARC Preferential Trading Arrangement (SAPTA)                        | PTA     | 1993        | 1995             | 7                | India, Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka and Maldives                                     |
| 13    | Revised Indo-Nepal Treaty of Trade                                    | FTA     | 1991        | 2009             | 2                | India, Nepal   |

| S. No | Name of the Agreement                                   | FTA/PTA | Year Signed           | Year Implemented | No. of Countries | Participating Countries   |
|-------|---|---------|-----------------------|------------------|------------------|---|
| 14    | Global System of Trade Preferences (G S T P)            | PTA     | 1988                  | 1989             | 44               | Algeria, Argentina, Bangladesh, Benin, Bolivia, Brazil, Cameroon, Chile, Colombia, Cuba, S. Korea, Ecuador, Egypt, Ghana, Guinea, Guyana, India, Indonesia, Iran, Iraq, Libya, Malaysia, Mexico, Morocco, Mozambique, Myanmar, Nicaragua, Nigeria, Pakistan, Peru, Philippines, N. Korea, Romania, Singapore, Sri Lanka, Sudan, Thailand, Trinidad and Tobago, Tunisia, Tanzania, Venezuela, Viet Nam, Yugoslavia, Zimbabwe |
| 15    | Asia Pacific Trade Agreement (APTA)                     | PTA     | 1975 , 2005 (revised) | 1976             | 6                | Bangladesh, China, India, Lao PDR, Republic of Korea, and Sri Lanka   |
| 16    | India - Bhutan Agreement on Trade, Commerce and Transit | FTA     | 1972                  | 2006             | 2                | India, Bhutan   |

Source: ADB Asia Regional Integration Center, <https://aric.adb.org/fta-country>, as of November 2019

### 4.3.1 Impact of FTAs on India's Dairy Exports

Free Trade Agreements are said to be the gate way for exports to reach its potential overseas market. FTAs make domestic products competitive in international markets because of the concessions granted by agreeing countries in the form of tariffs, taxes, and duties. Out of the sixteen trade agreements signed by India only seven of them contain provisions related to concession for dairy products. The list of the seven agreements is as shown in the Table 4. 2

*Table 4. 2 List of Trade Agreements Granting Concession for Indian Dairy Exports (2019)*

| S.No | Trade Agreements                                      | Partner Countries  | Partner Countries granting concession to Indian dairy exports |
|------|---|--|---|
| 1    | Asia Pacific Trade Agreement (1976)                   | Bangladesh, China, Laos PDR, south Korea, and Sri Lanka  | China, Lao Republic   |
| 2    | SAARC Preferential Trading Arrangement- SAPTA (1993)  | Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, Maldives   | Pakistan  |
| 3    | Agreement on South Asian Free Trade Area-SAFTA (2004) | Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, Maldives, Afghanistan                                      | Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, Afghanistan   |
| 4    | India -MERCOSUR Preferential Trade Agreement          | Argentina, Brazil, Paraguay, and Uruguay   | Argentina, Brazil, Paraguay, and Uruguay                      |
| 5    | India-Korea CEPA                                      | South Korea  | South Korea   |
| 6    | Revised Treaty of Trade India-Nepal                   | Nepal  | Nepal   |
| 7    | India ASEAN CECA                                      | Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam | Indonesia, Philippines, Myanmar, Thailand, Vietnam            |

*Source: Author's Compilation based on numerous Trade Agreement documents (2019)*

From trade agreements incorporating concessions for dairy industry it can be noticed that neighboring countries such as Bangladesh, Afghanistan, Nepal, Bhutan, Pakistan, Sri Lanka, Myanmar and China grant tariff concession for selected dairy exports from India. Other countries in the Asia Pacific region including Indonesia, Philippines, Laos, Vietnam, South Korea and Thailand also grants special consideration for some Indian dairy products. Even though countries such as China offers FTA consideration to milk products, dairy trade is hindered especially due to the ban of dairy products from India .Apart from Asian countries, MERCOSUR (Argentina, Brazil, Paraguay, and Uruguay) is the only trade bloc which grants concession to India when it comes to dairy exports. Table 4. 3 provides a comprehensive detail about the concessions granted by each of the above-mentioned countries.

**Table 4. 3 List of Indian Dairy Products eligible for Concessional Treatment under various Trade Agreements (2019)**

| S.No | Countries granting concession to Indian dairy exports | Concession Granted   |  |
|------|---|--|--|
|      |   | Products eligible (HS Codes)   | Nature of concession   |
| 1    | Laos  | 040390, 040510, 040520, 040590, 040620, 040640, 040690   | These products are listed in Lao Republic's Concession list under APTA and are offered a Tariff reduction between 20 % to 35%, Under India ASEAN agreement Lao PDR give concession               |
| 2    | Afghanistan   | 040140, 040150, 040210, 040291, 040299,  | These products are eligible for Tariff Concessions as they are excluded from SAFTA Sensitive list maintained by Afghanistan  |
| 3    | Argentina   | 40210  | Indian dairy exporters are eligible to get concessional tariff on export of 040210 to Argentina as they are a member of MERCOUR and this Product comes under MERCOSUR's offer list to India      |
| 4    | Bangladesh  | 040310, 040390, 040490, 040610, 040620, 040630, 040640, 040690   | These products are eligible for Tariff Concessions as they are excluded from SAFTA Sensitive list maintained by Bangladesh   |
| 5    | Bhutan  | 040110, 040120, 040140, 040150, 040210, 040221, 040229, 040310, 040390, 040410, 040490, 040520, 040590, 040610, 040620, 040640, 040690, 210500 | These products are eligible for Tariff Concessions as they are excluded from SAFTA Sensitive list maintained by Bhutan   |
| 6    | Brazil  | 40210  | Indian dairy exporters are eligible to get concessional tariff on export of 040210 to Brazil as they are a member of MERCOUR and this Product comes under MERCOSUR's offer list to India         |
| 7    | China   | 040210 ,040221 ,040520   | These products are listed in China's Concession list under APTA and are offered a Tariff reduction between 19 % to 30%   |
| 8    | Indonesia   | 040640   | These products from India are eligible for concessional tariff treatment of 3.75%- 4% from Indonesia as they are listed in Concession list maintained by the country under India-ASEAN Agreement |

| S.No | Countries granting concession to Indian dairy exports | Concession Granted   |   |
|------|---|--|---|
|      |   | Products eligible (HS Codes)   | Nature of concession  |
| 9    | Myanmar   | 40299  | This dairy product from India are eligible for concessional tariff treatment of 3 % from Myanmar as they are listed in Concession list maintained by the country under India-ASEAN Agreement                            |
| 10   | Nepal   | 040110, 040120, 040140, 040150, 040310, 040390, 040410, 040490, 040610, 040620, 040630, 040640, 040690, 210500 | Nepal grants Tariff Concession for these products as they are not listed under sensitive list of SAFTAs, Additionally Nepal extends concession to Milk, and homemade products of milk under India-Nepal Treaty of Trade |
| 11   | Pakistan  | 040210, 040110, 040120, 040140, 040150, 040291, 040310, 040390, 040520, 040620, 040640, 040690, 210500         | 20% Concession is granted for 040210 under SAPTA while rest of the products are eligible for Concession as they are excluded from SAFTA Sensitive list maintained by Pakistan   |
| 12   | Paraguay  | 40210  | Indian dairy exporters are eligible to get concessional tariff on export of 040210 to Paraguay as they are a member of MERCOUR and this Product comes under MERCOSUR's offer list to India                              |
| 13   | Philippines   | 040310, 040630   | These products from India are eligible for concessional tariff treatment of 5% from Philippines as they are listed in Concession list maintained by the country under India-ASEAN Agreement                             |
| 14   | South Korea   | 40520  | South Korea extends 10% concessional tariff of to 040520 exports from India under India-Korea CEPA  |
| 15   | Sri-Lanka   | 040620, 040630, 040640   | These products are eligible for Tariff Concessions as they are excluded from SAFTA Sensitive list maintained by Sri-Lanka   |
| 16   | Thailand  | 040299, 040640   | These dairy products from India are eligible for concessional tariff treatment of 5% from Thailand as they are listed in Concession list maintained by the country under India-ASEAN Agreement                          |

| S.No | Countries granting concession to Indian dairy exports | Concession Granted   |  |
|------|---|--|--|
|      |   | Products eligible (HS Codes)   | Nature of concession   |
| 17   | Uruguay   | 40210  | Indian dairy exporters are eligible to get concessional tariff on export of 040210 to Uruguay as they are a member of MERCOUR and this Product comes under MERCOSUR's offer list to India            |
| 18   | Vietnam   | 040110, 040120, 040130, 040210, 040221, 040229, 040299, 040510, 040520, 040590 | These dairy products from India are eligible for concessional tariff treatment of 7.5% - 9% from Vietnam as they are listed in Concession list maintained by the country under India-ASEAN Agreement |

*Source: Information compiled from various trade agreement documents, As of August 2019*

### **4.3.2 FTAs and India's Potential for Dairy Products**

When we analyse the growth in imports of dairy products across the dairy concession granting members under FTAs, five countries namely China, South Korea, Philippines, Indonesia, and Malaysia has witnessed a positive shift in imports of certain dairy products in the last decade. Given the fact that all these countries have ongoing FTAs with India there is a potential for Indian dairy sector to leverage the growing demand for dairy in these markets.

China and South Korea has the highest potential among these countries as they are granting tariff concession for Indian dairy products and at the same time has a high positive shift in import of certain dairy products. As an example, under APTA China grants tariff concession for certain Milk Powder and Dairy Spreads originating from India. Out of these two categories of dairy products, China grants tariff concession to Milk powder (040221). Similarly, South Korea grants tariff reduction to India for Dairy Spreads (040520) while this product comes under positive shift in import by the country. Even though, the scope for Indian dairy exporters to capture markets for these products is immense, India is yet to leverage the advantage of a positive SSA and an FTA for exports of dairy products to these potential countries.

New Zealand is the largest exporter of Milk Powder to China followed by Australia and Germany while Indian exports are virtually zero. In the same way, India doesn't export dairy spreads to South Korea while New Zealand is the largest exporter of Dairy Spreads to South Korea. Even though there is no positive shift share for FTA covered dairy products by Indonesia and Philippines, they showed a positive shift for



products such as Milk Powder, Yoghurt and Dairy Spreads. This implies the need for negotiating for these potential products under future FTA meeting rounds. A detailed analysis of potential benefits under FTA coupled with dairy products that has been increasingly imported by the FTA/PTA signed countries are given in Table 4. 4

*Table 4. 4 Countries and HS Codes with increased imports having FTA with India*

| S.No. | FTA signed countries with Major Growth in Imports | Dairy Products with increased imports   | Dairy Products eligible for Tariff concession Under FTA/PTA | FTA/PTA eligible Products with High Trade Potential |
|-------|---|---|---|---|
| 1     | China   | 40110 40120<br>40221 40229<br>40410 40510<br>40590 40610<br>40620 40630<br>40620 210500 | 040210, 040221,<br>040520                                   | 40221   |
| 2     | South Korea                                       | 40520, 40610  | 40520   | 40520   |
| 3     | Philippines                                       | 40210 40299<br>40390 40590  | 040310, 040630  | Nil   |
| 4     | Indonesia   | 40229   | 40640   | Nil   |
| 5     | Malaysia  | 40140   | No concession on Dairy                                      | No concession on Dairy                              |

*Source: Author's Compilation*

The tariff reduction applicable for Indian dairy exports under numerous FTAs with partnering countries is provided comprehensively in Table 4. 5. From the table it is observed that these countries extend significant tariff reduction for dairy exports hailing from India.





| HS Codes | Afghanistan                          | China                                | Laos                                 | Pakistan                             | Nepal                | Sri-Lanka   | Bangladesh                           | Bhutan                               | Argentina                            | Brazil                               | Uruguay                              | Paraguay                             | South Korea                          | Indonesia                            | Philippines                          | Thailand                             | Myanmar                              | Vietnam                              |
|----------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|----------------------|---|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| 40620    | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | MFN 5%<br>FTA: 2%                    | No preferential Tariff under FTA/PTA | MFN 15%<br>FTA: 14%  | No preferential Tariff under FTA/PTA                    | MFN 25%<br>FTA: 5%                   | MFN 50%<br>FTA: 8.10%                | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA |
| 40630    | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | MFN 15%<br>FTA: 14%  | MFN: 30% or Rs. 264/=per kg<br>FTA:5% or Rs. 44/=per kg | MFN 25%<br>FTA: 5%                   | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA |
| 40640    | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | MFN 5%<br>FTA: 2%                    | FTA: 5%                              | MFN 15%<br>FTA: 14%  | MFN: 30% or Rs. 264/=per kg<br>FTA:5% or Rs. 44/=per kg | MFN 25%<br>FTA: 5%                   | MFN 50%<br>FTA: 8.10%                | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | MFN 5%<br>FTA: 4%                    | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA |
| 40690    | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | MFN 5%<br>FTA: 2%                    | No preferential Tariff under FTA/PTA | MFN 15%<br>FTA: 14%  | No preferential Tariff under FTA/PTA                    | MFN 25%<br>FTA: 5%                   | MFN 50%<br>FTA: 8.10%                | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA |
| 21050    | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | FTA: 5%                              | MFN 15%<br>FTA: 9.5% | No preferential Tariff under FTA/PTA                    | No preferential Tariff under FTA/PTA | MFN 30%<br>FTA: 7.8%                 | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA | No preferential Tariff under FTA/PTA |

Source: Tariff Analysis Online, <https://tao.wto.org> ( As of August,2019, Tariff rates are subjected to variations )

### ***4.3.3 Materialisation of Tariff Benefits for Dairy Sector under FTAs***

Even though there are 18 countries which are granting tariff concession for Indian dairy products, Indian dairy sector miserably fails to materialise these benefits (see Table 4. 6). In most cases, India doesn't exploit the tariff advantage under FTAs when it comes to dairy exports except for few neighbouring countries such as Nepal, Bhutan and Bangladesh. In Nepal, India holds a major market share for products such Liquid Milk, Yoghurt, Ice-cream, certain Cheese and Whey products. In Bhutan, India is the largest supplier of almost every dairy product, except for the milk powder having fat content more than 1.5% for which New Zealand is the leading exporter. Apart from raw cheese with an import market share of 48%, India doesn't capitalise the market in Bangladesh by exporting any other dairy products which India has a tariff advantage under FTA. In Afghanistan, countries such as Iran, Pakistan and Spain are the leading exporters of products for which India enjoys a tariff concession. Out of the total number of dairy products falling under Afghanistan's FTA concession list, powdered milk is the only product which India is having a decent import market share with around 25 percent.

Even in neighbouring markets such as China, Sri-Lanka, Myanmar and Pakistan, India's exports of dairy products eligible for concession are either nil or dwarfed by the products exported by New Zealand, Australia, USA, Denmark, Austria, Netherlands and sometimes from dairy producers in UAE, Saudi Arabia, Iran and South Korea. Other regional FTA partners such as South Korea, Indonesia, Thailand, Philippines, Laos and Vietnam also grant tariff concession to a list of Indian dairy products, but India's exports to these countries are virtually zero whereas countries such as New Zealand, Australia, Denmark, Netherlands, USA, Italy, Spain, and Czech Republic are the major suppliers of these products. Finally, in case of India's dairy exports in FTA listed products to FTA partners such as Argentina, Brazil, Paraguay and Uruguay, the figures are again zero.

These facts suggest an urgent need for re-evaluating the focus of India's FTAs/PTAs, especially when it comes to dairy exports. When the FTAs are effectively utilised, Indian dairy exports can begin to grow by exploring markets with countries that partner with India.

Table 4. 6 India vs. Competitor's Share in Dairy Exports to FTA/PTA Partner Countries

| S.No. | Country     | Product Code under FTA/PTA | Total Imports (\$ Mn.) | Country with the Largest Export Share | Export Value by the Largest Exporter (\$ Mn) | Share of Largest Exporting Country in Total Imports | India's Export Value in (\$ Mn.) | India's Share in Country's Imports |
|-------|-------------|----------------------------|------------------------|---------------------------------------|--|---|----------------------------------|------------------------------------|
| 1     | Afghanistan | 40140                      | 0.29                   | Iran                                  | 0.147  | 50.69   | 0                                | 0.00                               |
|       |             | 40150                      | 55.952                 | Iran                                  | 55   | 98.66   | 0                                | 0.00                               |
|       |             | 40210                      | 85.686                 | India                                 | 21.215                                       | 24.76   | 21.215                           | 24.76                              |
|       |             | 40291                      | 44.239                 | Pakistan                              | 25.594                                       | 57.85   | 0                                | 0.00                               |
|       |             | 40299                      | 1.141                  | Spain                                 | 0.633  | 55.48   | 0                                | 0.00                               |
| 2     | China       | 40210                      | 609.118                | New Zealand                           | 272.877                                      | 44.80   | 0                                | 0.00                               |
|       |             | 40221                      | 1746.636               | New Zealand                           | 1,501  | 85.96   | 0                                | 0.00                               |
|       |             | 40520                      | 0.013                  | South Korea                           | 0.012  | 92.31   | 0                                | 0.00                               |
| 3     | Laos        | 40390                      | 2.02                   | Thailand                              | 2.02   | 100.00  | 0                                | 0.00                               |
|       |             | 40510                      | 0.259                  | Thailand                              | 0.257  | 99.23   | 0                                | 0.00                               |
|       |             | 40520                      | 0.39                   | Thailand                              | 0.39   | 100.00  | 0                                | 0.00                               |
|       |             | 40590                      | 0.063                  | Thailand                              | 0.063  | 100.00  | 0                                | 0.00                               |
|       |             | 40620                      | 0.01                   | Thailand                              | 0.01   | 100.00  | 0                                | 0.00                               |
|       |             | 40640                      | 0.005                  | Netherlands                           | 0.005  | 100.00  | 0                                | 0.00                               |
|       |             | 40690                      | 0.448                  | Thailand                              | 0.356  | 79.46   | 0                                | 0.00                               |
| 4     | Pakistan    | 40210                      | 104.926                | USA                                   | 39   | 37.18   | 4.756                            | 4.53                               |
|       |             | 40110                      | 0.113                  | UAE                                   | 0.056  | 49.56   | 0                                | 0.00                               |
|       |             | 40120                      | 0.895                  | Saudi Arabia                          | 0.523  | 58.44   | 0                                | 0.00                               |
|       |             | 40140                      | 0.037                  | Iran                                  | 0.021  | 56.76   | 0                                | 0.00                               |
|       |             | 40150                      | 0.044                  | Saudi Arabia                          | 0.018  | 40.91   | 0                                | 0.00                               |
|       |             | 40291                      | 0.436                  | Singapore                             | 0.25   | 57.34   | 0                                | 0.00                               |
|       |             | 40310                      | 0.21                   | Spain                                 | 0.131  | 62.38   | 0.005                            | 2.38                               |
|       |             | 40390                      | 0.033                  | New Zealand                           | 0.025  | 75.76   | 0                                | 0.00                               |
|       |             | 40520                      | 0.071                  | Denmark                               | 0.068  | 95.77   | 0                                | 0.00                               |
|       |             | 40620                      | 4.978                  | New Zealand                           | 2  | 49.24   | 0                                | 0.00                               |
|       |             | 40640                      | 0.002                  | Denmark                               | 0.002  | 100.00  | 0                                | 0.00                               |
|       |             | 40690                      | 0.315                  | Denmark                               | 0.118  | 37.46   | 0                                | 0.00                               |
|       |             | 210500                     | 1.533                  | USA                                   | 1  | 65.82   | 0                                | 0.00                               |
| 5     |             | 40110                      | 0.068                  | India                                 | 0.054  | 79.41   | 0.054                            | 79.41                              |
|       |             | 40120                      | 0.107                  | India                                 | 0.05   | 46.73   | 0.05                             | 46.73                              |
|       |             | 40140                      | 0                      |                                       | 0  |   | 0                                |                                    |
|       |             | 40150                      | 0.022                  | India                                 | 0.012  | 54.55   | 0.012                            | 54.55                              |
|       |             | 40310                      | 0.028                  | India                                 | 0.027  | 96.43   | 0.027                            | 96.43                              |
|       |             | 40390                      | 0.019                  | India                                 | 0.011  | 57.89   | 0.011                            | 57.89                              |

| S.No. | Country    | Product Code under FTA/PTA | Total Imports (\$ Mn.) | Country with the Largest Export Share | Export Value by the Largest Exporter (\$ Mn) | Share of Largest Exporting Country in Total Imports | India's Export Value in (\$ Mn.) | India's Share in Country's Imports |
|-------|------------|----------------------------|------------------------|---------------------------------------|--|---|----------------------------------|------------------------------------|
|       | Nepal      | 40410                      | 0.176                  | Turkey                                | 0.102  | 57.95   | 0.034                            | 19.32                              |
|       |            | 40490                      | 0.044                  | India                                 | 0.042  | 95.45   | 0.042                            | 95.45                              |
|       |            | 40610                      | 0.061                  | Denmark                               | 0.047  | 77.05   | 0.001                            | 1.64                               |
|       |            | 40620                      | 0.076                  | Singapore                             | 0.047  | 61.84   | 0.028                            | 36.84                              |
|       |            | 40630                      | 0.166                  | Denmark                               | 0.068  | 40.96   | 0.049                            | 29.52                              |
|       |            | 40640                      | 0.012                  | Denmark                               | 0.012  | 100.00  | 0                                | 0.00                               |
|       |            | 40690                      | 1.66                   | India                                 | 1  | 71.51   | 1                                | 71.51                              |
|       |            | 210500                     | 1.49                   | India                                 | 1.47   | 98.66   | 1.47                             | 98.66                              |
| 6     | Thailand   | 40299                      | 13.199                 | Malaysia                              | 10   | 79.40   | 0                                | 0.00                               |
| 7     | Sri Lanka  | 40620                      | 3.102                  | New Zealand                           | 2  | 65.25   | 0.004                            | 0.13                               |
|       |            | 40630                      | 8.731                  | Austria                               | 7  | 79.67   | 0.104                            | 1.19                               |
|       |            | 40640                      | 0.103                  | Netherlands                           | 0.07   | 67.96   | 0                                | 0.00                               |
| 8     | Bangladesh | 40310                      | 0.113                  | Thailand                              | 0.043  | 38.05   | 0.005                            | 4.42                               |
|       |            | 40390                      | 0.106                  | UAE                                   | 0.075  | 70.75   | 0                                | 0.00                               |
|       |            | 40490                      | 0.088                  | Czech Republic                        | 0.079  | 89.77   | 0                                | 0.00                               |
|       |            | 40610                      | 0.305                  | Australia                             | 0.198  | 64.92   | 0.001                            | 0.33                               |
|       |            | 40620                      | 0.163                  | Australia                             | 0.052  | 31.90   | 0                                | 0.00                               |
|       |            | 40630                      | 1.309                  | Australia                             | 0.778  | 59.43   | 0.085                            | 6.49                               |
|       |            | 40640                      | 0.006                  | Denmark                               | 0.004  | 66.67   | 0                                | 0.00                               |
|       |            | 40690                      | 1.27                   | India                                 | 0.618  | 48.66   | 0.618                            | 48.66                              |
| 9     | Bhutan     | 40110                      | 1.91                   | India                                 | 2  | 100.00  | 2                                | 100.00                             |
|       |            | 40120                      | 0.236                  | India                                 | 0.236  | 100.00  | 0.236                            | 100.00                             |
|       |            | 40140                      | 0                      |                                       | 0  |   | 0                                |                                    |
|       |            | 40150                      | 1.919                  | India                                 | 2  | 100.00  | 2                                | 100.00                             |
|       |            | 40210                      | 0.501                  | India                                 | 0.501  | 100.00  | 0.501                            | 100.00                             |
|       |            | 40221                      | 0.517                  | New Zealand                           | 0.517  | 100.00  | 0                                | 0.00                               |
|       |            | 40229                      | 7.202                  | India                                 | 7  | 100.00  | 7                                | 100.00                             |
|       |            | 40310                      | 0.008                  | India                                 | 0.008  | 100.00  | 0.008                            | 100.00                             |
|       |            | 40390                      | 0.152                  | India                                 | 0.152  | 100.00  | 0.152                            | 100.00                             |
|       |            | 40410                      | 0.009                  | India                                 | 0.009  | 100.00  | 0.009                            | 100.00                             |
|       |            | 40490                      | 0                      |                                       | 0  |   | 0                                |                                    |
|       |            | 40520                      | 0.025                  | India                                 | 0.025  | 100.00  | 0.025                            | 100.00                             |
|       |            | 40590                      | 0.741                  | India                                 | 0.741  | 100.00  | 0.741                            | 100.00                             |
|       |            | 40610                      | 0.127                  | India                                 | 0.126  | 99.21   | 0.126                            | 99.21                              |
|       |            | 40620                      | 0.291                  | India                                 | 0.289  | 99.31   | 0.289                            | 99.31                              |
|       |            | 40640                      | 0                      |                                       | 0  |   | 0                                |                                    |

| S.No. | Country     | Product Code under FTA/PTA | Total Imports (\$ Mn.) | Country with the Largest Export Share | Export Value by the Largest Exporter (\$ Mn) | Share of Largest Exporting Country in Total Imports | India's Export Value in (\$ Mn.) | India's Share in Country's Imports |
|-------|-------------|----------------------------|------------------------|---------------------------------------|--|---|----------------------------------|------------------------------------|
|       |             | 40690                      | 1.096                  | India                                 | 1  | 99.00   | 1                                | 99.00                              |
|       |             | 210500                     | 0.468                  | India                                 | 0.468  | 100.00  | 0.468                            | 100.00                             |
| 10    | Argentina   | 40210                      | 0.151                  | France                                | 0.092  | 60.93   | 0                                | 0.00                               |
| 11    | Brazil      | 40210                      | 67.324                 | Argentina                             | 40   | 58.84   | 0                                | 0.00                               |
| 12    | Uruguay     | 40210                      | 1.385                  | France                                | 0.555  | 40.07   | 0                                | 0.00                               |
| 13    | Paraguay    | 40210                      | 1.374                  | Argentina                             | 0.911  | 66.30   | 0                                | 0.00                               |
| 14    | South Korea | 40520                      | 21.42                  | New Zealand                           | 12   | 57.20   | 0                                | 0.00                               |
| 15    | Indonesia   | 40640                      | 0.183                  | Italy                                 | 0.107  | 58.47   | 0                                | 0.00                               |
| 16    | Myanmar     | 40299                      | 2.837                  | Australia                             | 2  | 87.87   | 0                                | 0.00                               |
| 17    | Philippines | 40310                      | 8.509                  | Spain                                 | 3  | 38.65   | 0                                | 0.00                               |
|       |             | 40630                      | 14.479                 | New Zealand                           | 7  | 50.50   | 0                                | 0.00                               |
| 18    | Vietnam     | 40110                      | 2.253                  | USA                                   | 0.783  | 34.75   | 0                                | 0.00                               |
|       |             | 40120                      | 19.271                 | Australia                             | 9  | 44.87   | 0                                | 0.00                               |
|       |             | 40130                      | 0                      |                                       | 0  |   | 0                                |                                    |
|       |             | 40210                      | 175.493                | USA                                   | 67   | 38.32   | 0                                | 0.00                               |
|       |             | 40221                      | 159.265                | New Zealand                           | 119  | 74.90   | 0                                | 0.00                               |
|       |             | 40229                      | 2.411                  | Japan                                 | 1  | 51.64   | 0                                | 0.00                               |
|       |             | 40299                      | 16.76                  | Malaysia                              | 10   | 61.52   | 0                                | 0.00                               |
|       |             | 40510                      | 24.243                 | New Zealand                           | 18   | 73.37   | 0.001                            | 0.00                               |
|       |             | 40520                      | 0.333                  | France                                | 0.201  | 60.36   | 0                                | 0.00                               |
|       |             | 40590                      | 73.683                 | New Zealand                           | 67   | 90.37   | 0.012                            | 0.02                               |

Source: Trade map, International Trade Centre (2019), Geneva, [www.trademap.org](http://www.trademap.org)

#### 4.3.4 India's Trade Agreements under Negotiation

India currently has 28 trade agreements that are under negotiation (Table 4. 7). Most of these trade agreements are with countries that have significant share and dominance in global trade especially with respect to dairy commodities. However, unlike the existing agreements where only 50% of the agreements have included the dairy industry under the list of products eligible for concessions, India needs to make sure that going forward any new agreement signed must incorporate the dairy industry as part of the list of industries with partnering countries.



*Table 4. 7 List of Trade Agreements under Negotiation*

| S.No | Name of Trade Agreement   | Status (As of November 2019)          | Participating Countries   |
|------|---|---------------------------------------|---|
| 1    | Bangladesh-India Free Trade Agreement                                 | Proposed/Under consultation and study | Bangladesh, India   |
| 2    | Comprehensive Economic Partnership for East Asia (CEPEA/ASEAN+6)      | Proposed/Under consultation and study | Australia, New Zealand, Japan, India, China, People's Republic of Korea, Republic of Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam |
| 3    | Georgia-India FTA   | Proposed/Under consultation and study | Georgia, India  |
| 4    | India-Colombia Preferential Trading Arrangement                       | Proposed/Under consultation and study | India, Colombia   |
| 5    | India-Ecuador FTA   | Proposed/Under consultation and study | India, Ecuador  |
| 6    | India-Iran Free Trade Agreement                                       | Proposed/Under consultation and study | India, Iran   |
| 7    | India-People's Republic of China Regional Trading Agreement           | Proposed/Under consultation and study | India, China  |
| 8    | India-Russian Federation Comprehensive Economic Cooperation Agreement | Proposed/Under consultation and study | India, Russia   |
| 9    | India-Taipei, China FTA   | Proposed/Under consultation and study | India, Chinese Taipei   |
| 10   | India-Turkey Free Trade Agreement                                     | Proposed/Under consultation and study | India, Turkey   |
| 11   | India-United Kingdom FTA  | Proposed/Under consultation and study | India, UK   |
| 12   | India-Uruguay Preferential Trading Arrangement                        | Proposed/Under consultation and study | India, Uruguay  |
| 13   | India-Venezuela Preferential Trading Arrangement                      | Proposed/Under consultation and study | India, Venezuela  |

| S.No | Name of Trade Agreement  | Status (As of November 2019) | Participating Countries   |
|------|--|------------------------------|---|
| 14   | India-Gulf Cooperation Council Free Trade Area   | Signed but not in effect     | India, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates   |
| 15   | Australia-India Free Trade Agreement   | Negotiations launched        | India, Australia  |
| 16   | Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Free Trade Area | Negotiations launched        | Bhutan, Myanmar, Sri Lanka, Bangladesh, India, Nepal, Thailand  |
| 17   | Eurasian Economic Union-India  | Negotiations launched        | India, Belarus, Kazakhstan, Russian Federation, Armenia, Kyrgyz Republic  |
| 18   | India-Canada Economic Partnership Agreement  | Negotiations launched        | India, Canada   |
| 19   | India-Egypt Preferential Trade Agreement   | Negotiations launched        | India, Egypt  |
| 20   | India-European Union Free Trade Agreement  | Negotiations launched        | India, Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom |
| 21   | India-Indonesia Comprehensive Economic Cooperation Arrangement   | Negotiations launched        | India, Indonesia  |
| 22   | India-Israel Free Trade Agreement  | Negotiations launched        | India, Israel   |
| 23   | India-Mauritius Comprehensive Economic Cooperation and Partnership Agreement                             | Negotiations launched        | India, Mauritius  |
| 24   | India-New Zealand Free Trade Agreement   | Negotiations launched        | India, New Zealand  |
| 25   | India-Peru Free Trade Agreement  | Negotiations launched        | India, Peru   |

| S.No | Name of Trade Agreement   | Status (As of November 2019) | Participating Countries                                    |
|------|---|------------------------------|--|
| 26   | India-Southern African Customs Union Preferential Trade Agreement | Negotiations launched        | India, South Africa, Botswana, Namibia, Swaziland, Lesotho |
| 27   | India-Thailand Free Trade Area                                    | Negotiations launched        | India, Thailand  |
| 28   | India-European Free Trade Association Free Trade Agreement        | Signed but not yet In Effect | India, Iceland, Liechtenstein, Norway, Switzerland         |

Source: ADB Asia Regional Integration Center, <https://aric.adb.org/fta-country>.

#### 4.4 Impact Analysis of Free Trade Agreements on India's Dairy Exports

It is important to comprehend the dynamics in bilateral trade with Partnering countries after signing FTAs. Impact analysis of important FTAs for dairy sector has been carried out and represented below.

##### 4.4.1 India ASEAN CECA

The dairy products under this free trade agreement are Yoghurt, Butter, Cheese and Condensed Milk. This agreement was implemented in 2010. To find out change in India's Export and Import of these dairy products after this agreement, a regime shift analysis is done. The results are presented below.

Table 4. 8 Chow Test Result wrt to Indian Dairy Export under Indian ASEAN CECA

| Test Results                |                |    |             |       |       |
|-----------------------------|----------------|----|-------------|-------|-------|
| Dependent Variable: Exports |                |    |             |       |       |
| Source                      | Sum of Squares | df | Mean Square | F     | Sig.  |
| Contrast                    | 444779441      | 2  | 222389721   | 3.381 | 0.063 |
| Error                       | 920787351      | 14 | 65770525    |       |       |

$R Squared = .329$  (Adjusted  $R Squared = .185$ )

Table 4. 9 Chow Test Result wrt to Indian Dairy Imports under Indian ASEAN CECA

| Test Results                |                |    |             |      |       |
|-----------------------------|----------------|----|-------------|------|-------|
| Dependent Variable: Imports |                |    |             |      |       |
| Source                      | Sum of Squares | df | Mean Square | F    | Sig.  |
| Contrast                    | 1411929.22     | 2  | 705964.61   | 1.87 | 0.191 |
| Error                       | 5285828.28     | 14 | 377559.16   |      |       |

$R Squared = .216$  (Adjusted  $R Squared = .049$ )

As depicted by the chow test results there has been no change in the trade of the dairy products under Indian-ASEAN Comprehensive Economic Cooperation Agreement (CECA).

#### 4.4.2 Agreement on South Asian Free Trade Area-SAFTA

Bulk and Pack Milk, Condensed Milk, Butter, Cheese, Yoghurt, SMP, WMP, Cream and Whey Powder are given rebates under this free trade agreement. This agreement was implemented in 2007. To find out the changes in export and import in Indian dairy export to the destination countries under this agreement is analyzed using chow test. The test results are given below.

Table 4. 10 Chow Test Result wrt to Indian Dairy Exports under SAFTA

| Test Results                |                |    |             |      |       |
|-----------------------------|----------------|----|-------------|------|-------|
| Dependent Variable: Exports |                |    |             |      |       |
| Source                      | Sum of Squares | df | Mean Square | F    | Sig.  |
| Contrast                    | 127150552.1    | 2  | 63575276.1  | 0.06 | 0.942 |
| Error                       | 14870389966    | 14 | 1062170712  |      |       |

*R Squared = .430 (Adjusted R Squared = .307)*

Table 4. 11 Chow Test Result wrt to Indian Dairy Imports under SAFTA

| Test Results                |                |    |             |        |          |
|-----------------------------|----------------|----|-------------|--------|----------|
| Dependent Variable: Imports |                |    |             |        |          |
| Source                      | Sum of Squares | df | Mean Square | F      | Sig.     |
| Contrast                    | 4154331.2      | 2  | 2077165.6   | 14.067 | <b>0</b> |
| Error                       | 2067273.58     | 14 | 147662.398  |        |          |

*R Squared = .708 (Adjusted R Squared = .646)*

As depicted by the chow test results, there has been a change in import of dairy products by India after the South Asian Free Trade Area (SAFTA). However, no change has been seen in case of exports by India to the respective countries.

#### 4.4.3 India -MERCOSUR Preferential Trade Agreement

Under India -MERCOSUR PTA, only one dairy product i.e. SMP has been given rebate. However, no exports and imports of SMP is observed after the MERCOSUR PTA implementation between India and Argentina, Brazil, Paraguay, and Uruguay. However, regime shift has been observed in other dairy product categories. The results of chow tests are as follows:

Table 4. 12 Chow Test Result wrt to Indian Dairy Exports under India-MERCOSUR

| Test Results               |                |    |             |       |       |
|----------------------------|----------------|----|-------------|-------|-------|
| Dependent Variable: Export |                |    |             |       |       |
| Source                     | Sum of Squares | df | Mean Square | F     | Sig.  |
| Contrast                   | 6494.968       | 2  | 3247.484    | 0.912 | 0.424 |
| Error                      | 49856.494      | 14 | 3561.178    |       |       |

*R Squared = .206 (Adjusted R Squared = .036)*

Table 4. 13 Chow Test Result wrt to Indian Dairy Imports under India-MERCOSUR

| Test Results               |                  |       |                  |      |      |
|----------------------------|------------------|-------|------------------|------|------|
| Dependent Variable: Export |                  |       |                  |      |      |
| Source                     | Sum of Squares   | df    | Mean Square      | F    | Sig. |
| Contrast                   | 4466224247419.66 | 2.00  | 2233112123709.83 | 4.15 | 0.04 |
| Error                      | 7525374993098.70 | 14.00 | 537526785221.34  |      |      |

*R Squared = .934 (Adjusted R Squared = .920)*

#### 4.4.4 India-Korea CEPA

Under India-Korea CEPA, 040520 i.e. Butter is given rebate for export and import. However, after the agreement no substantial change in export and import of butter between India and Korea has been observed. Though, there is some change in the overall export and import of dairy products. The chow test results depicting this overall change in trade of dairy products after the India-Korea CEPA is presented below.

Table 4. 14 Chow Test Result wrt to Indian Dairy Exports under India-Korea CEPA

| Test Results               |                |    |             |       |      |
|----------------------------|----------------|----|-------------|-------|------|
| Dependent Variable: Export |                |    |             |       |      |
| Source                     | Sum of Squares | df | Mean Square | F     | Sig. |
| Contrast                   | 1602872.443    | 2  | 801436.221  | 2.269 | 0.14 |
| Error                      | 4944972.719    | 14 | 353212.337  |       |      |

*R Squared = .305 (Adjusted R Squared = .157)*

Table 4. 15 Chow Test Result wrt to Indian Dairy Imports under India-Korea CEPA

| Test Results               |                   |       |                  |      |      |
|----------------------------|-------------------|-------|------------------|------|------|
| Dependent Variable: Export |                   |       |                  |      |      |
| Source                     | Sum of Squares    | df    | Mean Square      | F    | Sig. |
| Contrast                   | 10070830163142.80 | 2.00  | 5035415081571.43 | 5.53 | 0.02 |
| Error                      | 12759790432362.60 | 14.00 | 911413602311.62  |      |      |

*R Squared = .971 (Adjusted R Squared = .965)*

Under India-Korea and India-MERCOSUR Agreement, no change has been observed in the trade of the respective category of dairy products. However, overall change in dairy products imported by India has been observed after these agreements got enforced.

## 4.5 Conclusion

This chapter gives insights to comprehend the free trade agreements (FTA), the potential benefits arising out of these agreements and the extent to which benefits are availed by Indian dairy sector. The chapter concludes that the India's exports of dairy products to FTA countries have not outperformed overall export growth or export to rest of the world. Besides that, only a small number of the FTAs India has signed, offers tariff concession to dairy exports from India. Export to the FTA countries is also negligible as compared to the overall export of the dairy products. Bilateral trade growth under these FTAs is only observed in the case of imports. This is also due to the reason that India's production surplus is intermittent and not continuous. As a result of which India is unable to take advantage of the Free and Preferential Trade Agreements. Moreover, partnering countries are getting most out of these trade agreements especially when it comes to bilateral trade with major dairy exporting countries. A summary of changes in India's Import and Export due to Free Trade Agreements are given in the table below.

*Table 4. 16: FTA impact of Indian Dairy Export*

| FTA Name                            | Adjusted R Squared | Significance    | Analysis  |
|-------------------------------------|--------------------|-----------------|---|
| Indian-ASEAN CECA                   | 0.138              | Not Significant | No Change in Export after this FTA got implemented                      |
| India-Korea CEPA                    | 0.157              | Not Significant | No Change in Export after this FTA got implemented                      |
| SAFTA                               | 0.3                | Not Significant | No Change in Export after this FTA got implemented                      |
| Revised Treaty of Trade India-Nepal | 0.55               | Not significant | The export has increased but no visible change after FTA implementation |
| India- MERCOSUR                     | 0.36               | Not significant | No change in Export after this FTA got implemented                      |

*Source: Author's Analysis*

*Table 4. 17: FTA impact on Indian Dairy Import*

| FTA Name                            | Adjusted R Squared | Significance    | Analysis  |
|-------------------------------------|--------------------|-----------------|---|
| Indian-ASEAN CECA                   | 0.918              | Not Significant | No Change in Import after this FTA got implemented            |
| India-Korea CEPA                    | 0.965              | Significant     | Change in Indian Dairy Import after the Implementation of FTA |
| SAFTA                               | 0.88               | Not Significant | No Change in Export after this FTA got implemented            |
| Revised Treaty of Trade India-Nepal | 0.243              | Not Significant | The export has increased but the change is not due to the FTA |
| India- MERCOSUR                     | 0.92               | Significant     | Change in Indian Dairy Import after the Implementation of FTA |

*Source: Author's Analysis*

Next chapter analyses India's dairy export potential with important parameters such as trade potential score and Non-Tariff barriers to identify the important existing and potential markets for exports of dairy products from India. A detailed matrix consisting of suitable markets across dairy products are provided based on the Trade Score as well as the Non-Tariff Barriers.

## **CHAPTER 5: INDIA'S DAIRY EXPORT POTENTIAL: PRODUCT AND MARKET IDENTIFICATION**

### **5.1 Background**

The export promotion strategy for dairy product is dependent on the selection of right markets and right products. Net import, complementarity index, geographical proximity etc. are some of the vital information required to penetrate and pursue the selected markets. This chapter highlights the important existing and potential markets based on trade potential score and trade barriers for exports of dairy products from India. A detailed matrix consisting of suitable markets across dairy products are provided based on the Trade Score as well as the Non-Tariff Measures (NTMS). Details of NTMS is explained in Chapter 6.

### **5.2 Introduction**

Identification of new markets or important existing markets depends upon various factors. These factors may also differ from industry to industry. For the dairy industry markets have been identified bases on Self Sufficiency Ratio (SSR) and whether the country is a net importer of milk and milk products. Similarly, factors like trade between India and the selected market, the comparative advantage of the product categories, the applied tariff rates, and distance between the countries are used to filter the list of countries and generate the final destinations. Ultimately, with the help of trade score (high & low) and trade barriers (high & low) a matrix is developed for each of the product category.

The following steps describes the process used for identified new markets and important existing markets for Indian dairy products.

Step 1: Identify net importing countries and countries with low SSR at 6-digit level. Remove the countries with high SSR from the net importing list.

Step 2: Import (from India) trend of the identified countries are observed and divided into two groups; existing markets, and new potential markets for Indian dairy products.

Step 3: Trade Potential Score (TPS) has been calculated using factors like Bilateral Revealed Comparative Advantage (BRCA), Trade Complementary Index (TCI), Proximity to India and Tariff rates (MFN rates) to identify important existing markets.

Step 4: In addition, market size is used to further filter and identify the potential markets (details are given in Chapter 6).



- **Bilateral revealed comparative advantage (BRCA):** This indicator measures the bilateral trade flows between India and the destination markets across each product category.
- **Trade Complimentary Index (TCI):** This index shows the extent to which one country's exports overlap the other country's imports.
- **Most Favoured Nation Tariff Rates (MFN Tariff rates):** An MFN tariffs are what countries impose on the imports from other members of WTO (in case of preferential trade agreement FTA rates are applicable). For our analysis MFN score is based on MFN or FTA rates, lower of the two.
- **Proximity to India:** The distance between the India and the markets are ranked in ascending order. The less the distance the higher the score.

$$\text{Trade Potential Score}(TPS)_{Existing\ market} = BRCA + TCI + MFN\ score + Distance\ Score$$

$$\text{Trade Potential Score}(TPS)_{Potential\ market} = TCI + MFN\ score + Distance\ Score$$

### 5.3 Identification of Potential Products: Using Revealed Comparative Advantage

Revealed Comparative Advantage (RCA) is a tool which depicts the trade relative advantage a country possesses for some commodities in terms of various factors. The index is assumed to reveal the comparative advantage of the trading nations, since it reflects the country differences in relative costs as well as in non-price factors. There are several non-price factors that can contribute to movements in RCA. Some of those factors are structural change, improved world demand and trade specialisation. Using RCA, the dairy products can be classified into:

*Competitively positioned*, which improve consistently over time and have an RCA greater than 1 currently

*Threatened product*, which, although have an RCA greater than 1 currently, have exhibited inconsistent or decline in growth over time

*Emerging products Tier 1*, which currently have an RCA very near but less than 1, but have been improving consistently over time

*Emerging products Tier 2*, which currently have an RCA less than 1 (and less than Emerging products Tier 1 category), but have been improving consistently over time

*Weakly positioned products Tier 1*, which currently have an RCA less than 1 (and less than Weakly positioned products Tier 2 category) and have been declining consistently over time

Weakly positioned products Tier 2, which currently have an RCA less than 1 (but more than Weakly positioned products Tier 1 category) and have been declining consistently over time.

**Table 5. 1: Basis of Product Category Classification**

| S. No | Category                          | Current RCA (2018)  | Past RCA (2009-2017)  | Category Code |
|-------|-----------------------------------|---|-----------------------|---------------|
| 1.    | Competitively positioned          | >1  | Consistently >1       | CP            |
| 2.    | Threatened product                | >1  | Declined consistently | TP            |
| 3.    | Emerging products Tier 1          | near but less than 1                                      | Improved consistently | EP1           |
| 4.    | Emerging products Tier 2          | <1 (less than Emerging products Tier 1 category)          | Improved consistently | EP2           |
| 5.    | Weakly positioned products Tier 1 | <1 (less than Weakly positioned products Tier 2 category) | Declined consistently | WPP1          |
| 6.    | Weakly positioned products Tier 2 | <1 (more than Weakly positioned products Tier 1 category) | Declined consistently | WPP2          |

Source: Author's Analysis

**Table 5. 2 Product positioning as per RCA analysis**

| Product Details             |       |   | CP | TP | EP1 | EP2 | WPP1 | WPP2 |
|-----------------------------|-------|---|----|----|-----|-----|------|------|
| <b>Bulk &amp; Pack Milk</b> | 40110 | Milk and cream of a fat content by weight of <= 1%, not concentrated nor containing added sugar ...   |    |    |     | ✓   |      |      |
|                             | 40120 | Milk and cream of a fat content by weight of > 1% but <= 6%, not concentrated nor containing ...      |    |    |     | ✓   |      |      |
| <b>Cream</b>                | 40130 | Milk and cream of a fat content by weight of > 6%, not concentrated nor containing added sugar ...    |    |    |     |     | ✓    |      |
|                             | 40140 | Milk and cream of a fat content by weight of > 6% but <= 10%, not concentrated nor containing ...     |    |    |     | ✓   |      |      |
|                             | 40150 | Milk and cream of a fat content by weight of > 10%, not concentrated nor containing added sugar ...   |    |    |     | ✓   |      |      |
| <b>SMP</b>                  | 40210 | Milk and cream in solid forms, of a fat content by weight of <= 1,5%                                  |    |    |     |     | ✓    |      |
| <b>WMP</b>                  | 40221 | Milk and cream in solid forms, of a fat content by weight of > 1,5%, unsweetened                      |    |    |     | ✓   |      |      |
|                             | 40229 | Milk and cream in solid forms, of a fat content by weight of > 1,5%, sweetened                        | ✓  |    |     |     |      |      |
| <b>Condensed Milk</b>       | 40291 | Milk and cream, concentrated but unsweetened (excluding in solid forms)                               |    |    |     |     | ✓    |      |
|                             | 40299 | Milk and cream, concentrated and sweetened (excluding in solid forms)                                 |    |    |     |     |      | ✓    |
| <b>Whey Powder</b>          | 40410 | Whey and modified whey, whether or not concentrated or containing added sugar or other sweetening ... |    |    |     | ✓   |      |      |

| Product Details            |        |   | CP | TP | EP1 | EP2 | WPP1 | WPP2 |
|----------------------------|--------|---|----|----|-----|-----|------|------|
|                            | 40490  | Products consisting of natural milk constituents, whether or not sweetened, n.e.s.                  |    |    |     | ✓   |      |      |
| <b>Cheese</b>              | 40610  | Fresh cheese "unripened or uncured cheese", incl. whey cheese, and curd                             |    |    |     |     | ✓    |      |
|                            | 40620  | Grated or powdered cheese, of all kinds   |    |    |     | ✓   |      |      |
|                            | 40630  | Processed cheese, not grated or powdered  |    |    |     | ✓   |      |      |
|                            | 40640  | Blue-veined cheese and other cheese containing veins produced by "Penicillium roqueforti"           |    |    |     |     | ✓    |      |
|                            | 40690  | Cheese (excluding fresh cheese, incl. whey cheese, curd, processed cheese, blue-veined cheese ...)  |    |    |     |     | ✓    |      |
| <b>Butter</b>              | 40510  | Butter (excluding dehydrated butter and ghee)   |    |    |     | ✓   |      |      |
|                            | 40520  | Dairy spreads of a fat content, by weight, of $\geq 39\%$ but $< 80\%$                              |    |    |     | ✓   |      |      |
|                            | 40590  | Fats and oils derived from milk, and dehydrated butter and ghee (excluding natural butter, ...)     | ✓  |    |     |     |      |      |
| <b>Casein</b>              | 350110 | Casein  |    |    |     |     |      | ✓    |
| <b>Caseinates</b>          | 350190 | Caseinates and other casein derivatives; casein glues (excluding those put up for retail sale ...)  |    |    |     |     | ✓    |      |
| <b>Lactose</b>             | 170211 | Lactose in solid form and lactose syrup, not containing added flavouring or colouring matter, ...   |    |    |     | ✓   |      |      |
| <b>Infant Milk Formula</b> | 190110 | Food preparations for infant use, put up for retail sale, of flour, groats, meal, starch or ...     |    |    |     |     | ✓    |      |
| <b>Yoghurt</b>             | 40310  | Yoghurt, whether or not flavoured or containing added sugar or other sweetening matter, fruits, ... |    |    |     | ✓   |      |      |
|                            | 40390  | Buttermilk, curdled milk and cream, kephir and other fermented or acidified milk and cream, ...     |    |    |     | ✓   |      |      |

*Source: Author's Compilation*

## 5.4 Shortlisting Important Existing and Potential Market

The image below depicts the step by step process used while forming a decision matrix using the example of bulk and pack milk (040110).

**Step 1: Identifying the Net importing Countries**

*Few Net Importing Countries for 040110 (Bulk and Pack Milk) is provided below*

|            |
|------------|
| China      |
| Hong Kong  |
| Myanmar    |
| Georgia    |
| Maldives   |
| Cabo Verde |
| Malaysia   |
| Armenia    |

**Step 2: Identifying the Net Importing Countries which are Exporting from India and which are not**

*Few countries out of Net Importing Countries Import 040110 from India*

|             |
|-------------|
| Hong Kong   |
| Philippines |
| UAE         |
| Nepal       |

*Few countries out of Net Importing Countries which do not Import 040110 from India*

|           |
|-----------|
| Macao     |
| Malaysia  |
| Mongolia  |
| Argentina |

**Step 3: Trade Potential Score is calculated for Importing and Non-Importing Markets for India Based on BRCA, TCI,MFN Score and Proximity**

*Few markets out of "Net Importing Countries" which import 040110 from India*

|             |      |
|-------------|------|
| Hong Kong   | 52.4 |
| Philippines | 47.6 |
| UAE         | 87.8 |
| Nepal..     | 29.2 |

*Trade Potential Score*

*Few markets out of "Net Importing Countries" which do not import 040110 from India*

|             |        |
|-------------|--------|
| Macao       | 220.43 |
| Malaysia    | 149    |
| Mongolia    | 138.89 |
| Argentina.. | 82.13  |

*Trade Potential Score*

**Step 4: Identifying appropriate Countries based on Decision Matrix classifying markets on the basis of Trade Score and Non-Tariff Measures**

**Decision Matrix based on Trade Score & Non - Tariff Measures**

| 040110 : Highlighting important existing markets |      |                       |   |
|--|------|-----------------------|---|
|  |      | Non - Tariff Measures |   |
|  |      | High                  | Low                                       |
| Trade Score                                      | High | UAE,Singapore,Qatar,  | Hong Kong,                                |
|  | Low  | Nepal,                | Philippines,Bhutan,Seychelles,Madagascar, |

*Figure 5. 1 Diagrammatic representation to identification of potential markets*

## 5.5 Decision Matrix Quadrants

The decision matrix is divided into four quadrants each having its own significance. This section includes a detailed description of these quadrants

Table 5. 3: Decision Matrix Description

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| Highlighting important existing & potential markets          |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | <p><i>Quadrant 1(Q1)</i><br/> <i>Countries with high trade potential with India and high trade barriers for milk and milk products</i><br/> <b>Favourable existing/potential markets</b></p>  | <p><i>Quadrant 2(Q2)</i><br/> <i>Countries with high trade potential with India and low trade barriers for milk and milk products</i><br/> <b>Most Favourable existing/potential markets</b></p> |
|  | Low  | <p><i>Quadrant 3(Q3)</i><br/> <i>Countries with low trade potential with India and high trade barriers for milk and milk products</i><br/> <b>Unfavourable existing/potential markets</b></p> | <p><i>Quadrant 4(Q4)</i><br/> <i>Countries with low trade potential with India and low trade barriers for milk and milk products</i><br/> <b>Least Favourable existing/potential markets</b></p> |

The analysis to identify the potential markets will focus on the countries in the first and second quadrant. The next section gives product-wise details of the decision matrices. For simplicity, we have enlisted the region wise coverage of each product. All the countries featuring in the potential and existing markets are classified into: Asia, Middle East, North Africa, North America, Central America, and South America, Europe, Africa, Australia, and Oceania

### 5.5.1. Butter and Ghee

Butter has three codes: 040510, 040520 and 040590. 040510 is butter (excluding dehydrated butter and ghee), 040520 is dairy spreads of fat content, by weight, of  $\geq 39\%$  but  $<80\%$  and 040590 is fats and oils derived from milk, and dehydrated butter and ghee (excluding natural butter, recombined butter and whey butter).

#### *Butter (040510)*

For butter, Asian, African and European regions feature in the existing markets for HS code 040510, however the potential markets for the same code has countries from the Asian and African regions only. China is an important potential market and should be capitalized accordingly.

Table 5. 4: Butter (040510) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040510 : Highlighting important existing markets             |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | UAE, Singapore, Qatar, Oman, Egypt, Hong Kong, China, Saudi Arabia, Australia, Philippines, Bahrain, Sri Lanka, USA, Viet Nam, | Malaysia, Iran, Myanmar, Germany, Thailand, Seychelles,   |
|  | Low  | Peru, Kuwait, Pakistan, Morocco, Turkey, Nigeria,  | South Africa, Mauritius, Nepal, Mozambique, Zambia, Tanzania, Bhutan, Bangladesh, Burundi, Suriname, Georgia, Kenya, Congo, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 040510 : Highlighting important Potential markets            |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | Lao People's Democratic Republic, Jordan, Israel, China, Brunei Darussalam, Cyprus, Russian Federation, Croatia, Slovenia, Latvia, Hungary, Japan, | Maldives, Tajikistan, Cambodia, Armenia, Yemen, Mongolia, Kazakhstan, Djibouti, Macao, China, Moldova, Republic of, Albania, Madagascar, Korea, Republic of, |
|  | Low  | Czech Republic, Indonesia, Bulgaria, Estonia, Algeria, Tunisia, Benin, Malta, Cameroon, Togo, Mali,  | Malawi, Central African Republic, Zimbabwe, Chad, Botswana, Burkina Faso, Lesotho, Rwanda, Gabon, Norway, Angola, Niger, Sierra Leone, Namibia,              |

Butter (040520)

For 040520, Asian and African countries feature in the potential market and China is an important market for this category as well.

Table 5. 5 Butter (040520) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |                       |                    |
|--|------|-----------------------|--------------------|
| 040520: Highlighting important existing markets              |      |                       |                    |
|  |      | Non - Tariff Measures |                    |
|  |      | High                  | Low                |
| Trade Score  | High | UAE,                  |                    |
|  | Low  |                       | Singapore, Bhutan, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040520 : Highlighting important Potential markets            |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | Qatar, Oman, Hong Kong, China, Egypt, Indonesia, Lao People's Democratic Republic, Brunei Darussalam, Kazakhstan, Malta, Viet Nam, China, United States of America, Tajikistan, | Macao, China, Myanmar, Seychelles, Maldives, Russian Federation, Armenia, Mongolia, Mauritius, Georgia, Albania, Yemen, Samoa,  |
|  | Low  | Pakistan, Jordan, Estonia, Sri Lanka, Latvia, Peru, Mexico, Cyprus, Czech Republic, Bolivia, Plurinational State of, Israel,  | Cambodia, Cabo Verde, Moldova, Republic of, Djibouti, Bulgaria, Korea, Republic of, Angola, Gabon, Namibia, Botswana, Papua New Guinea, Mozambique, Lesotho, Solomon Islands, |

## Ghee (040590)

Ghee also has a lot of Asian and African countries in the existing markets however for the potential markets certain European countries also feature in the potential market list. India can establish Africa as an important market for butter as a lot of African countries have low NTMs and high trade potential score.

Table 5. 6 Butter (040590) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040590 : Highlighting important existing markets             |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | <i>Pakistan, United Arab Emirates, Hong Kong, China, Nepal, Oman, Australia, Bahrain, Singapore, Malaysia, China, Saudi Arabia, Sri Lanka, United States of America, Viet Nam, Cyprus, Algeria, Kuwait, Kazakhstan, Grenada, Russian Federation, Liberia, Qatar, Indonesia, Cameroon,</i> | <i>Mauritius, Macao, China, Myanmar, Yemen, Korea, Republic of, Iraq, Maldives, Papua New Guinea, Cambodia, Nigeria, Taipei, Chinese, Syrian Arab Republic, Egypt, Benin, Tanzania, United Republic of, Trinidad and Tobago, Mozambique, Seychelles, Kenya,</i>   |
|  | Low  | <i>Malawi, Sweden, Philippines, Lebanon, Austria, Greece, Japan, Peru, Jordan, Canada, Guyana, Bangladesh, Finland, Denmark, France, Israel,</i>  | <i>Suriname, Zambia, Sierra Leone, Somalia, Togo, Côte d'Ivoire, South Africa, Senegal, Ghana, Cayman Islands, Botswana, Turkey, Bhutan, Sudan, Congo, Jamaica, Panama, Madagascar, Brunei Darussalam, Norway, Congo, Democratic Republic of the, Guinea, Burkina Faso, Angola, Gambia, Libya, State of, Gabon, Thailand,</i> |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 040590 : Highlighting important Potential markets            |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | <i>Lao People's Democratic Republic, Bulgaria, Estonia, Latvia, Malta, Tajikistan, Tunisia, Poland, Mauritania, Mexico, Bolivia, Plurinational State of, Namibia, Antigua and Barbuda,</i> | <i>Belarus, Mongolia, Ukraine, Armenia, Albania, Moldova, Republic of, Cabo Verde, Central African Republic, Georgia, Czech Republic, Hungary, Chad,</i>   |
|  | Low  | <i>Switzerland, Brazil, Lithuania, Colombia, Croatia, Barbados, Ethiopia, Honduras, Ecuador,</i>   | <i>Lesotho, Burundi, Solomon Islands, Mali, Belize, Fiji, Tonga, Saint Vincent and the Grenadines, Zimbabwe, Guatemala, Haiti, Uzbekistan, Turkmenistan, Azerbaijan, Vanuatu, Guinea-Bissau,</i> |

### 5.5.2. Skimmed Milk Powder

Neighbouring countries like Myanmar, China, Afghanistan, Bhutan etc. comprise of important existing market for skimmed milk powder (040210). Certain African markets also feature as existing markets. It lays emphasis to the fact that India is meeting the NTMs in these markets and hence has the potential to meet the NTMs in other African markets as well. Africa and Asia are among the most important potential regions for export of SMP from India. SMP is a product with longer shelf life and hence can easily be sent to farther regions of Africa.

Table 5. 7 SMP (040210) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040210 : Highlighting important existing markets             |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | UAE, Malaysia, Qatar, Oman, Singapore, Bahrain, Saudi Arabia, Lebanon, Kuwait, Egypt, Indonesia, Philippines, Russian Federation, Jordan, Iraq, Pakistan, Algeria, Sri Lanka, Spain, | Myanmar, Hong Kong, China, Afghanistan, Seychelles, Maldives, Bhutan, Thailand, Mauritania, Azerbaijan, Mauritius, Nepal, Syrian Arab Republic,   |
|  | Low  | Nigeria, Cameroon, Tunisia, Togo, Burkina Faso, Mali, Colombia, Ethiopia, Israel, Guinea, Japan,   | Yemen, Sudan, Georgia, Korea, Republic of, Cambodia, Bangladesh, Rwanda, Ghana, Mozambique, Côte d'Ivoire, Djibouti, Gabon, Tanzania, United Republic of, Madagascar, Malawi, Morocco, Liberia, Gambia, Zambia, Kenya, Congo, Democratic Republic of the, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040210 : Highlighting important potential markets            |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | Brunei Darussalam, Lao People's Democratic Republic, Greece, Antigua and Barbuda, Italy, China, Cyprus, | Macao, China, Namibia, Palau, Botswana, Samoa, Cabo Verde, Saint Lucia, Kazakhstan, Central African Republic, Sao Tome and Principe, Lesotho, Comoros, Albania, Bermuda, Uzbekistan, Mongolia, Armenia, Angola, |
|  | Low  | Brunei Darussalam, Lao People's Democratic Republic, Greece, Antigua and Barbuda, Italy, China, Cyprus, | Papua New Guinea, Aruba, Chad, Tonga, Belize, Equatorial Guinea, Taipei, Chinese, Solomon Islands, Saint Vincent and the Grenadines, Suriname, Bosnia and Herzegovina, Saint Kitts and Nevis, Cayman Islands,   |

### 5.5.3. Cheese

Cheese has five codes: 040610, 040620, 040630, 040640 and 040690. 040610 is fresh cheese “unripened or uncured cheese”, incl. whey cheese and curd. 040620 is grated or powdered cheese, of all kinds. 040630 is processed cheese, not grated or powdered. 040640 is blue-veined cheese and other cheese containing viens produced by “*Penicillium roqueforti*” and 040690 is cheese (excluding fresh cheese, incl. whey cheese, curd, processed cheese, blue-veined cheese and other cheese containing veins produced by “*Penicillium roqueforti*”, and grated or powdered cheese.

#### *Cheese (040610)*

For 040610 code of Cheese, the existing markets lie in Middle East and Asia in countries such as UAE, Oman and Thailand. However, the potential markets lie only in Africa and Asia region.



Table 5. 8 Cheese (040610) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040610 : Highlighting important existing markets             |      |   |   |
|  |      | Non - Tariff Measures                             |   |
|  |      | High  | Low   |
| Trade Score  | High | Singapore, Qatar, Philippines, Kuwait, Sri Lanka, | United Arab Emirates, Oman, Hong Kong, China, Thailand,               |
|  | Low  | Nigeria, Bahrain, Saudi Arabia, Japan,            | Nepal, Maldives, Bangladesh, Bhutan, Taipei, Chinese, United Kingdom, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040610 : Highlighting important potential markets            |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | Indonesia, Brunei Darussalam, Lebanon, China, Tajikistan, Pakistan, Greece, | Macao, China, Philippines, Lao People's Democratic Republic, Kazakhstan, Armenia, Azerbaijan, Mongolia, Viet Nam, Ukraine, Palau, Georgia, Albania, Comoros, Yemen, Moldova, Republic of, Cambodia, Central African Republic, Jordan, |
|  | Low  | Bulgaria, Finland, Sweden, Latvia, Iraq, Malta, Czech Republic,             | Djibouti, Samoa, Estonia, Korea, Republic of, Cabo Verde, Bosnia and Herzegovina, Chad, Sao Tome and Principe, Botswana, Gabon, Saint Lucia, Sudan, Mozambique, United Kingdom, Italy, Namibia, Papua New Guinea, Lesotho,            |

*Cheese (040620)*

For 040620, a similar trend is observed. UAE features as one of the important existing markets whereas other Middle Eastern countries like Qatar and Oman are in the list of potential market with high quality barriers.

Table 5. 9 Cheese (040620) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |                       |                                 |
|--|------|-----------------------|---------------------------------|
| 040620 : Highlighting important existing markets             |      |                       |                                 |
|  |      | Non - Tariff Measures |                                 |
|  |      | High                  | Low                             |
| Trade Score  | High | Singapore, Sri Lanka, | United Arab Emirates, Thailand, |
|  | Low  | Nepal,                | Madagascar, Bangladesh, Angola, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 040620 : Highlighting important potential markets            |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | Qatar, Oman, Bahrain, Egypt, Brunei Darussalam, Philippines, Kuwait, Lebanon, Indonesia, Malaysia, China, | Macao, China, Myanmar, Hong Kong, China, Seychelles, Maldives, Kazakhstan, Lao People's Democratic Republic, Kyrgyzstan, Russian Federation, Mongolia, Azerbaijan, Viet Nam, Belarus, Mauritius,                   |
|  | Low  | Tajikistan, Australia, Pakistan, Jordan, Greece, Germany, Finland, Bulgaria,                              | Palau, Ukraine, Georgia, Bosnia and Herzegovina, Yemen, Albania, Cambodia, Comoros, Moldova, Republic of, Djibouti, Central African Republic, Samoa, Namibia, Botswana, South Africa, Korea, Republic of, Lesotho, |

*Cheese (040630)*

040630 is exported to various African and South-East Asian Markets. However, there is potential in Chinese and other African Markets

*Table 5. 10 Cheese (040630) existing and potential markets decision matrix*

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 040630 : Highlighting important existing markets             |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | United Arab Emirates, Singapore, Qatar, Oman, Hong Kong, China, Saudi Arabia, | Malaysia, South Africa, Myanmar, Thailand, Seychelles,   |
|  | Low  | Kuwait, Sri Lanka, Bangladesh, Israel, Canada,                                | Mauritius, Maldives, Tanzania, United Republic of, Bhutan, Taipei, Chinese, Congo, Democratic Republic of the, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040630 : Highlighting important potential markets            |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Indonesia, Philippines, Brunei Darussalam, Lebanon, Lao People's Democratic Republic, Kazakhstan, China, Viet Nam, Tajikistan, Pakistan, Greece, Jordan, | Macao, China, Armenia, Azerbaijan, Mongolia, Ukraine, Palau, Georgia, Albania, Comoros, Yemen, Moldova, Republic of, Cambodia, Central African Republic,  |
|  | Low  | Bulgaria, Estonia, Finland, Sweden, Latvia, United Kingdom, Italy, Namibia, Malta,   | Djibouti, Samoa, Korea, Republic of, Cabo Verde, Bosnia and Herzegovina, Chad, Sao Tome and Principe, Botswana, Gabon, Saint Lucia, Sudan, Mozambique, Papua New Guinea, Iraq, Lesotho, Czech Republic, |

*Cheese (040640)*

040640 has potential to be exported to Middle East and South-East Asia Markets.

*Table 5. 11 Cheese (040640) potential markets decision matrix*

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040640 : Highlighting important potential markets            |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | United Arab Emirates, Kazakhstan, Malaysia, Russian Federation, Singapore, Qatar, Oman, Hong Kong, China, Sri Lanka, Jordan, Lao People's Democratic Republic, Brunei Darussalam, Indonesia, Malta, Viet Nam, China, Israel, | Macao, China, Myanmar, Seychelles, Maldives, Philippines, Norway, Mongolia, Mauritius,  |
|  | Low  | Czech Republic, Tajikistan, Pakistan, Slovenia, Bulgaria, Namibia, Bangladesh, Hungary,  | Ukraine, Georgia, Moldova, Republic of, Yemen, Thailand, South Africa, Cambodia, Albania, Djibouti, Botswana, Korea, Republic of, Barbados, Lesotho, Samoa, Cabo Verde, Papua New Guinea, Iraq, |

*Cheese (040690)*

040640 is currently exported to Middle East and South-East Asia Markets. However, potential markets is also observed in some of the African and South East Asian Markets.

Table 5. 12 Cheese (040690) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 040690 : Highlighting important existing markets             |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | United Arab Emirates, Singapore, Qatar, Bahrain, Germany, Saudi Arabia, Hong Kong, China, Philippines, United States of America, Kuwait, Lebanon, | Oman, Malaysia, Seychelles, Thailand, Korea, Republic of, Nepal,   |
|  | Low  | United Kingdom, Sri Lanka, Bangladesh, Nigeria, Belgium, Canada,  | Ghana, Maldives, Jordan, Bhutan, Mauritius, Uganda, Tanzania, United Republic of, Panama, Taipei, Chinese, Japan, Congo, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040690 : Highlighting important potential markets            |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Russian Federation, Malta, Brunei Darussalam, Lao People's Democratic Republic, Viet Nam, Israel, Namibia, Barbados, Tajikistan, | Macao, China, Myanmar, Norway, Egypt, Mongolia, Palau, Azerbaijan, Ukraine, Moldova, Republic of, Georgia, Albania, Yemen, Comoros, Bosnia and Herzegovina, Botswana, Cambodia, |
|  | Low  | Pakistan, Finland, Hungary, Tunisia, Antigua and Barbuda, Spain, Mauritania, Luxembourg, Cameroon, Algeria, Niger, Portugal,     | Djibouti, Lesotho, Sao Tome and Principe, Iraq, Sudan, Cabo Verde, Papua New Guinea, Saint Lucia, Rwanda, Bermuda, Aruba, Madagascar, Uzbekistan,                               |

#### 5.5.4. Whole Milk Powder

WMP has two codes: 040221 and 040229. 040221 is milk and cream in solid forms, of a fat content by weight of >1.5%, unsweetened. 040229 is milk and cream in solid forms, of a fat content by weight of >1.5%, sweetened.

For WMP, Myanmar, Seychelles and Mozambique are the important existing markets for WMP. They cover Asian and African regions. Similarly, Asian and African regions are among the most important potential regions for WMP. However, an interesting thing to note is, besides Asia and Africa, some European countries also feature in the list of important potential markets for WMP and owing to the longer shelf life of WMP, it will be profitable to expand to the European regions so that European region can be opened to other products as well.

Table 5. 13 WMP (040221) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |                                   |                                      |
|--|------|-----------------------------------|--------------------------------------|
| 040221 : Highlighting important Existing markets             |      |                                   |                                      |
|  |      | Non - Tariff Measures             |                                      |
|  |      | High                              | Low                                  |
| Trade Score  | High | Malaysia, Singapore, Qatar, Oman, | Myanmar,                             |
|  | Low  | Canada,                           | Cameroon, Madagascar, Nepal, Zambia, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 040221 : Highlighting important Potential markets            |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | Brunei Darussalam, Lebanon, Bahrain, Egypt, Saudi Arabia, Indonesia, Philippines, Lao PDR, Kuwait, Kyrgyzstan, Russian Federation, Kazakhstan, China, | Macao, China, Hong Kong, China, Seychelles, Bhutan, Mauritius, South Africa, Palau, Syrian Arab Republic, Namibia, Botswana, Uzbekistan, Comoros, Samoa,   |
|  | Low  | Cyprus, Viet Nam, Antigua and Barbuda, Malta,   | Lesotho, Mongolia, Armenia, Saint Lucia, Georgia, Central African Republic, Albania, Sao Tome and Principe, Azerbaijan, Cabo Verde, Bermuda, Angola, Yemen, Moldova, Republic of, Papua New Guinea, Bosnia and Herzegovina, Aruba, Cambodia, Gabon, Taipei, Chinese, Chad, Djibouti, |

Table 5. 14 WMP (040229) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040229 : Highlighting important Existing markets             |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | UAE, Qatar, Indonesia, Saudi Arabia, Brunei Darussalam, Senegal, Nepal, | Myanmar, Seychelles, Mozambique,  |
|  | Low  | Pakistan, Nigeria,  | Mauritius, Maldives, Panama, Bhutan, Cambodia, Madagascar, Bangladesh, Syrian Arab Republic, Yemen, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 040229 : Highlighting important potential markets            |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | Bahrain, Lebanon, Lao PDR, Kyrgyzstan, Russian Federation, Kazakhstan, China, Viet Nam, | Macao, China, Greece, Germany, Sweden, Netherlands, Malta, Austria, Denmark, Italy, Ukraine, Spain, Bosnia and Herzegovina, Portugal, Georgia, Palau, Albania, Bulgaria, Ireland, Estonia, Moldova, Republic of, Jordan, Central African Republic, Comoros, Sudan, Tajikistan, Djibouti, Latvia, Samoa, Belgium, Sao Tome and Principe, Iraq, Cabo Verde, France, Namibia, Hungary, Chad, Poland, Botswana, Saint Lucia, North Korea, Bermuda, Angola, |
|  | Low  | Ethiopia, Tunisia,  |  |

### 5.5.5. Bulk and Pack Milk

Bulk & Pack milk is represented by two codes: 040110 and 040120. 040110 is milk and cream of a fat content by weight of less than 1% not concentrated nor containing added sugar and 040120 is milk and cream of a fat content by weight of more than 1% and less than 6% not concentrated nor containing added sugar.

Important existing market for bulk and pack milk lies in the Asian region whereas the potential markets are in the Asian and African regions for example China and Namibia. Nepal, which is a neighbouring region, has low trade potential score and high NTMs for India and hence is not a potential market even after being in such a close proximity. It is also noticed that most of the European markets have low trade potential score and high NTMs for bulk and pack milk from India. India can focus on capitalizing markets like China where it will be comparatively easier to send products with lower shelf life and it also has a reasonably higher purchasing power. Africa is also one of the most important potential market for India because of its incapability of establishing a flourishing dairy industry because of factors like lack of water since dairy sector is a water intensive sector.

Table 5. 15 Bulk and pack milk (040110) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |                       |   |
|--|------|-----------------------|---|
| 040110 : Highlighting important existing markets             |      |                       |   |
|  |      | Non - Tariff Measures |   |
|  |      | High                  | Low                                       |
| Trade Score  | High | UAE,Singapore,Qatar,  | Hong Kong,                                |
|  | Low  | Nepal,                | Philippines,Bhutan,Seychelles,Madagascar, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040110 : Highlighting important potential markets            |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Oman,Cyprus,Russian Federation,Malta,China,Brunei Darussalam,Viet Nam,   | Macao, China,Myanmar,Lao People's Democratic Republic,Maldives,Malaysia,Mauritius,Armenia,Mongolia,Samoa,Albania,Namibia,Botswana,Cabo Verde,Saint Lucia,Central African Republic,Georgia,Moldova, Republic of,Lesotho, |
|  | Low  | Antigua and Barbuda,Bolivia, Plurinational State of,Bulgaria,Jordan,Mauritania,Cameroon,Senegal,Argentina,Niger,Sri Lanka,Chile,Tunisia,Guatemala,Uruguay,Nicaragua, | Cambodia,Mozambique,Belize,Ghana,Suriname,Solomon Islands,Nigeria,Haiti,Rwanda,Fiji,  |

Table 5. 16 Bulk and pack milk (040120) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 040120 : Highlighting important existing markets             |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | Malaysia,Qatar,Singapore,Sri Lanka,Hong Kong, China,Philippines,Togo, | Ghana,Myanmar,   |
|  | Low  | Nepal,  | Bangladesh,Seychelles,Mauritius,Maldives,Djibouti,Somalia,Libya, State of,Congo, Democratic Republic of the, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040120 : Highlighting important potential markets            |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Oman,Saudi Arabia,Russian Federation,Cyprus,Laos,Malta,China,Viet Nam,Germany,Bulgaria,Greece,Brunei Darussalam,Jordan,Finland,                  | Macao, China,Azerbaijan,Mongolia,Armenia,Albania,Moldova,Palau,Georgia,Cambodia,Central African Republic,Samoa,                             |
|  | Low  | Lebanon,Sweden,Italy,Korea, Democratic People's Republic of,Tunisia,Cameroon,Mexico,Bolivia, Plurinational State of,Mauritania,Colombia,Senegal, | Iraq,Cabo Verde,Namibia,Botswana,Sudan,Sao Tome and Principe,Mozambique,Saint Lucia,Lesotho,Bermuda,Rwanda,Antigua and Barbuda,Aruba,Niger, |

### 5.5.6. Whey Powder

Whey powder has two codes: 040410 and 040490. 040410 is whey and modified whey, whether or not concentrated or containing added sugar or other sweetening matter. 040490 is products consisting of natural milk constituent's added sugar or other sweetening matter. Whey powder is the most imported dairy product in India. The existing markets of whey are in Asia and Middle East. Oman and Singapore are identified existing markets for whey powder. In the potential market Asian and African countries are dominant, however certain European markets like Armenia and Ukraine are also among the potential markets

Table 5. 17 Whey powder (040410) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040410 : Highlighting important existing markets             |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | United Arab Emirates, Qatar, Australia, Bahrain, Viet Nam, Sri Lanka, New Zealand, Ethiopia, |   |
|  | Low  | United Arab Emirates, Qatar, Australia, Bahrain, Viet Nam, Sri Lanka, New Zealand, Ethiopia, | Malaysia, Singapore, Oman, Hong Kong, China, Nepal, Bhutan, Trinidad and Tobago, Kenya, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 040410 : Highlighting important Potential markets            |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | Brunei Darussalam, Cyprus, Malta, Egypt, United Kingdom, Indonesia, Saudi Arabia, Russian Federation, Kazakhstan, Slovenia, China, | Macao, China, Myanmar, Mauritius, Macedonia, North, Palau, Lao People's Democratic Republic, Comoros, Samoa, Afghanistan, Uzbekistan, Central African Republic, Armenia, Albania, Cabo Verde,  |
|  | Low  | Viet Nam, Liberia, Peru, Antigua and Barbuda, Bolivia, Plurinational State of, Jordan,   | Angola, Georgia, Botswana, Papua New Guinea, Azerbaijan, Aruba, Gabon, Sao Tome and Principe, Yemen, Saint Lucia, Moldova, Republic of, Chad, Venezuela, Bolivarian Republic of, Belize, Djibouti, Bermuda, St. Pierre and Miquelon, Gambia, Mozambique, |

Table 5. 18 Whey powder (040490) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 040490 : Highlighting important existing markets             |      |  |  |
|  |      | Non - Tariff Measures                                  |  |
|  |      | High   | Low  |
| Trade Score  | High | United Arab Emirates, Qatar, United States of America, | Singapore, Oman,                                 |
|  | Low  | Bahrain, Kuwait,                                       | Hong Kong, China, Mozambique, Nepal, Madagascar, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040490: Highlighting important potential markets             |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Saudi Arabia, Egypt, Lebanon, Indonesia, Brunei Darussalam, Kazakhstan, Russian Federation, Viet Nam, China, | Macao, China, Myanmar, Seychelles, Lao People's Democratic Republic, Maldives, Kyrgyzstan, Philippines, Afghanistan, Uzbekistan, India, Azerbaijan, Armenia, Mongolia, Mauritius, Palau, Ukraine, |
|  | Low  | Australia, Greece, Tajikistan, Pakistan, Sweden, Austria, Cyprus, United Kingdom, Italy, Bulgaria,           | Bosnia and Herzegovina, Georgia, Albania, Yemen, Samoa, Cambodia, Cabo Verde, Moldova, Republic of, Thailand, Djibouti, Syrian Arab Republic, Namibia, Sao Tome and Principe, Chad, Saint Lucia,  |

### 5.5.7. Cream

Cream has three product codes: 040130, 040140 and 040150. 040130 is milk and cream of a fat content by weight of >6%, not concentrated nor containing added sugar, 040140 is milk and cream of a fat content by weight of >6% but <=10%, not concentrated nor containing and 040150 is milk and cream of a fat content by weight of >10%, not concentrated nor containing added sugar.

*Cream (040130)*

HS code 040130 features African and North American region as its potential markets.

Table 5. 19 Cream (040130) potential markets

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |                       |                                  |
|--|------|-----------------------|----------------------------------|
| 040130: Highlighting important Potential markets             |      |                       |                                  |
|  |      | Non - Tariff Measures |                                  |
|  |      | High                  | Low                              |
| Trade Score  | High | Barbados,             | Seychelles, Antigua and Barbuda, |
|  | Low  | Guyana, Suriname,     | Sao Tome and Principe,           |

*Cream (040140)*

040140 features countries in Africa and Asia and important potential markets. In this product also European region is in the 'avoid destination' zone and most favourable regions are Asia and Africa.

Table 5. 20 Cream (040140) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |                       |     |
|--|------|-----------------------|-----|
| 040140 : Highlighting important Existing markets             |      |                       |     |
|  |      | Non - Tariff Measures |     |
|  |      | High                  | Low |
| Trade Score  | High |                       |     |
|  | Low  | Singapore,            |     |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040140: Highlighting important Potential markets             |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | UAE, Qatar, Oman, Bahrain, Saudi Arabia, Hong Kong, Kazakhstan, Kyrgyzstan, Kuwait, Lao PDR, Philippines, Brunei Darussalam, Malaysia, Viet Nam, China, | Macao, China, Myanmar, Seychelles, Maldives, Azerbaijan, Armenia, Uzbekistan, Mongolia, India, Ukraine,   |
|  | Low  | Cyprus, Jordan, Greece, Bulgaria, Estonia, Sri Lanka, Lebanon, Malta, Sweden,   | Georgia, Mauritius, Tajikistan, Albania, Syrian Arab Republic, Palau, Cambodia, Moldova, Republic of, Bosnia and Herzegovina, Djibouti, Namibia, Comoros, Iraq, Botswana, Cabo Verde, Saint Lucia, Lesotho, |

*Cream (040150)*

For 040150, Myanmar is an important existing market with low NTMs and the potential markets with Low NTMs and high trade potential are majorly in the Asian and African region.

Table 5. 21 Cream (040150) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 040150 : Highlighting important Existing markets             |      |   |  |
|  |      | Non - Tariff Measures                           |  |
|  |      | High  | Low  |
| Trade Score  | High | UAE,Singapore,Qatar,USA,Saudi Arabia,Hong Kong, | Myanmar,                                     |
|  | Low  | Sri Lanka,                                      | Thailand,Nigeria,Panama,Nepal,Bhutan,Zambia, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040150 : Highlighting important Potetial markets             |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Oman,Bahrain,Indonesia,Kazakhstan,Lebanon,Philippines,Brunei Darussalam,Malaysia,China,Viet Nam,Malta, | Macao, China,Russian Federation,Seychelles,Maldives,Armenia,Mongolia,Azerbaijan,Uzbekistan,Mauritius,Palau,Albania,Georgia,Bosnia and Herzegovina,Moldova, Republic of,                 |
|  | Low  | Bulgaria,Jordan,Greece,Sweden,Slovenia,United Kingdom,   | Cambodia,Yemen,Samoa,Tajikistan,Namibia,Botswana,Djibouti,Pakistan,Saint Lucia,Korea, Republic of,Lesotho,Bermuda,Mozambique,Bangladesh,Chad,Sudan,Angola,Aruba,Gabon,Papua New Guinea, |

### 5.5.8. Buttermilk

Asian and African countries feature in both existing and potential markets for buttermilk (040390) exports from India. Some of the countries that share border with India like China, Myanmar and Afghanistan are also among important potential markets. The European countries that feature in the potential markets are Armenia, Georgia and Albania. Most of the European countries are in the third quadrant and thus have high NTMs and low trade potential score. These unfavourable conditions make these markets unsuitable for exports to these regions.

Table 5. 22 Buttermilk (040390) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040390 : Highlighting important existing markets             |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | United Arab Emirates,Qatar,Oman,Australia,Hong Kong, China,Philippines,Cameroon, | Malaysia,Singapore,Togo,Senegal,Seychelles,   |
|  | Low  | Sri Lanka,Bahrain,Kuwait,Netherlands,  | Maldives,Nepal,Cambodia,Panama,Zimbabwe,Bhutan,Guinea,Haiti,Tanzania, United Republic of, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 040390: Highlighting important Potential markets             |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Saudi Arabia,Indonesia,Brunei Darussalam,Kazakhstan,Russian Federation,Cyprus,China,Viet Nam,Malta,        | Macao, China,Myanmar,Egypt,Lao People's Democratic Republic,Afghanistan,Mauritius,Azerbaijan,Armenia,Palau,Georgia,Albania,Central African Republic,Comoros,Yemen,Moldova, Republic of,Samoa, |
|  | Low  | Jordan,Bulgaria,Sweden,Slovenia,Latvia,United Kingdom,Denmark,Italy,Czech Republic,Liberia,Israel,Hungary, | Cabo Verde,Tajikistan,Djibouti,Sao Tome and Principe,Chad,Korea, Republic of,Gabon,Iraq,Mozambique,Papua New Guinea,Bermuda,Ghana,Uzbekistan,   |



### 5.5.9 Condensed Milk

Condensed milk has two codes: 040291 and 040299. 040291 is milk and cream, concentrated but unsweetened (excluding in solid forms) and 040299 is milk and cream, concentrated and sweetened (excluding in solid forms). Condensed milk is currently being sent to Middle Eastern region of Oman, Hong Kong, China and Ghana. Therefore, markets for condensed milk exist in Asia, Middle East and Africa. Existing market in any region implies that trade barriers in those regions have already been overcome for some countries and same can be achieved for other countries as well. All the important potential markets for condensed milk are concentrated in Asian and African region however some potential markets are also in Ukraine, Albania and Georgia which belong to the European region.

Table 5. 23 Condensed milk (040291) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |                       |                                       |
|--|------|-----------------------|---------------------------------------|
| 040291 : Highlighting important existing markets             |      |                       |                                       |
|  |      | Non - Tariff Measures |                                       |
|  |      | High                  | Low                                   |
| Trade Score  | High | UAE, Qatar, Bahrain,  |                                       |
|  | Low  |                       | New Zealand, Nepal, Pakistan, Bhutan, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 040291 : Highlighting important potential markets            |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | Hong Kong, China, Oman, Brunei Darussalam, Indonesia, Philippines, Lebanon, Kuwait, Russian Federation, Kazakhstan, China, Viet Nam, | Macao, China, Myanmar, Seychelles, Maldives, Mauritius, Afghanistan, Palau, Kyrgyzstan, Ukraine, Georgia, Mongolia, Central African Republic, Samoa, Albania,  |
|  | Low  | Antigua and Barbuda, Malta, Liberia, Tajikistan, Dominica, Bolivia, Plurinational State of, Jordan,                                  | Sao Tome and Principe, Azerbaijan, Cabo Verde, Saint Lucia, Yemen, Angola, Macedonia, North, Moldova, Republic of, Bermuda, Papua New Guinea, Gabon, Cambodia, Djibouti, Aruba, Equatorial Guinea, Belize, Montserrat, Mozambique, |

Table 5. 24 Condensed Milk (040299) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040299 : Highlighting important existing markets             |      |   |   |
|  |      | Non - Tariff Measures                                 |   |
|  |      | High  | Low   |
| Trade Score  | High | UAE, Qatar, Bahrain, Singapore, USA, Lebanon, Kuwait, | Oman, Hong Kong, China, Ghana,  |
|  | Low  | Viet Nam, Poland, Brunei Darussalam,                  | Philippines, Seychelles, Nepal, Panama, Maldives, Bhutan, Taipei, Chinese, Kenya, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 040299 : Highlighting important potential markets            |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | Egypt, Indonesia, Greece, Kyrgyzstan, Kazakhstan, Russian Federation, Finland, Sweden, Austria, China, United Kingdom, Denmark, Italy, | Macao, China, Myanmar, Lao People's Democratic Republic, Uzbekistan, Mauritius, Armenia, Azerbaijan, Mongolia, Palau, Bosnia and Herzegovina, Georgia, Albania, Comoros, Central African Republic, Moldova, Republic of, Cambodia, Samoa, Thailand, Sao Tome and Principe, Iraq, Djibouti, Cabo Verde, Saint Lucia, Bermuda, Angola, Sudan, Gabon, |
|  | Low  | Portugal, Tajikistan, Pakistan, Jordan, Bulgaria, Estonia, Ireland, Sri Lanka, Malta, Latvia,  |  |

### 5.5.10. Yoghurt

Italy, Singapore and Hong Kong are the important existing markets for Yoghurt (040130) but the potential markets comprise of only Asia and Africa. Bangladesh, Tajikistan and certain other African and Asian countries are in the ‘avoid destination’ zone because of their low trade potential score and high NTMs, Some European markets like Latvia and Hungary are in quadrant 3 which means these markets cannot be penetrated because of low trade potential score and high NTMs

Table 5. 25 Yoghurt (040310) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |                                     |
|--|------|--|-------------------------------------|
| 040310: Highlighting important existing markets              |      |  |                                     |
|  |      | Non - Tariff Measures                              |                                     |
|  |      | High   | Low                                 |
| Trade Score  | High | United Arab Emirates, Singapore, Hong Kong, China, | Italy,                              |
|  | Low  | Bangladesh,  | Pakistan, Nepal, Bhutan, Lithuania, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 040310: Highlighting important Potential markets             |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | Qatar, Oman, Kazakhstan, Indonesia, Cyprus, Philippines, Brunei Darussalam, Russian Federation, Malta, China, Malaysia, Viet Nam, | Macao, China, Myanmar, Seychelles, Lao People's Democratic Republic, Maldives, Armenia, Mauritius, Mongolia, Ukraine, Georgia, Albania, Central African Republic,                 |
|  | Low  | Tajikistan, Namibia, Jordan, Sri Lanka, Latvia, Hungary, Israel, Cameroon, Bolivia, Plurinational State of,                       | Yemen, Cambodia, Botswana, Samoa, Moldova, Republic of, Cabo Verde, Djibouti, Lesotho, Chad, Gabon, Papua New Guinea, Mozambique, Angola, Solomon Islands, Norway, Rwanda, Ghana, |

### 5.5.11. Infant Milk

Infant milk is currently sold to countries in Asia and Africa with Oman being an exception. The potential markets for infant milk are also majorly from Asian and African regions. However, some African markets also have high NTMs and low trade potential and hence it is difficult to send products to these regions.

### 5.5.12. Casein & Caseinates

For 350110 (casein) the existing markets are majorly Asian and African markets. However, for the other category i.e. 350190 (caseinate) some European countries are also featuring in the list of existing markets like UK, Italy and Spain. Similarly, there is an opportunity to expand to the European markets as they feature in the list of potential markets for 350190. This means that caseinates can be sent to Europe and the entry barriers could be met. It is also interesting to note that countries like China and Hong Kong which feature as potential markets for most of the products have low trade potential score and high NTMs for casein and caseinates and hence cannot be penetrated for these products. In addition to this a lot of other Asian countries are also in the 3<sup>rd</sup> quadrant and hence lay in the ‘avoid destination’ zone.

Table 5. 26 Infant milk (19011) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 190110 : Highlighting important existing markets             |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | United Arab Emirates, Malaysia, Thailand, Viet Nam, Indonesia, Qatar, Bahrain, Greece, Russian Federation, Saudi Arabia, Philippines, Finland, Brunei Darussalam, Sweden, Kuwait, United Kingdom, Lebanon, | Myanmar, Oman, Seychelles, Jordan, Maldives, Norway, Bhutan, Egypt,  |
|  | Low  | Italy, Nepal, China, Israel, Sri Lanka, Bangladesh, Bulgaria, Guyana,  | Pakistan, Barbados, Mauritius, Fiji, Syrian Arab Republic, Cambodia, Ukraine, Saint Lucia, Namibia, Sudan, Turkey, Botswana, Mauritania, Jamaica, Yemen, Mozambique, Suriname, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 190110 : Highlighting important potential markets            |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | Kazakhstan, Luxembourg, Tunisia, Tajikistan, Côte d'Ivoire, Algeria,  | Bosnia and Herzegovina, Kyrgyzstan, Mongolia, Armenia, Azerbaijan, Rwanda, Palau, Macao, China, Samoa, Senegal, Moldova, Republic of, Iraq, Burundi, Cabo Verde, Iceland, Lesotho, Burkina Faso, Bermuda, Uzbekistan,      |
|  | Low  | Cyprus, Malta, Latvia, Honduras, Ecuador, Colombia, Antigua and Barbuda, El Salvador, Peru, Mali, Costa Rica, Brazil, | Korea, Democratic People's Republic of, Zimbabwe, Albania, Papua New Guinea, Panama, Central African Republic, Lao People's Democratic Republic, Macedonia, North, Sao Tome and Principe, Djibouti, Aruba, Gabon, Comoros, |

Table 5. 27 Casein (350110) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 350110 : Highlighting important existing markets             |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | United Arab Emirates, Viet Nam, Germany, Greece, Netherlands, Qatar, Australia, Bahrain, United Kingdom, Saudi Arabia, United States of America, Italy, Spain, Portugal, China, | Thailand, Singapore, Malaysia, Indonesia, Philippines, Jordan, South Africa, Egypt, Mauritius,  |
|  | Low  | Cyprus, Brazil, Japan, Poland, Algeria, Belgium, Slovenia, Croatia,   | Korea, Republic of, Israel, Tunisia, Pakistan, Turkey, Nepal, Nigeria, Morocco, Iran, Islamic Republic of, Congo, Democratic Republic of the, Sri Lanka, Dominican Republic, Bangladesh, Zambia, Canada, Taipei, Chinese, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 350110: Highlighting important Potential markets             |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | Russian Federation, Finland, Kazakhstan, Sweden, Lebanon, Kyrgyzstan, Denmark, Luxembourg, Switzerland, Bulgaria, Estonia,   | Norway, Bosnia and Herzegovina, Mongolia, Kuwait, Armenia, Azerbaijan, Sudan, Ghana, Namibia, Syrian Arab Republic, Senegal, Botswana, Cabo Verde, Honduras, |
|  | Low  | Guatemala, Cameroon, Malta, Colombia, Peru, Hungary, El Salvador, Côte d'Ivoire, Mexico, Ethiopia, Czech Republic, Trinidad and Tobago, Paraguay, Bolivia, Plurinational State of, | Panama, Mozambique, Iceland, Moldova, Republic of, Lesotho, Costa Rica, Macedonia, North, Zimbabwe, Uzbekistan, Georgia, Kenya,                              |

Table 5. 28 Caseinate (350190) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |  |
|--|------|---|--|
| 350190 : Highlighting important Existing markets             |      |   |  |
|  |      | Non - Tariff Measures   |  |
|  |      | High  | Low  |
| Trade Score  | High | UAE, Viet Nam, Singapore, Oman, Indonesia, Russian Federation, Saudi Arabia, Philippines, Australia, China, | Paraguay, Malaysia, Thailand, Greece, Egypt, Netherlands, Seychelles, Jordan, United Kingdom, Iran, Islamic Republic of, South Africa, Italy, Spain, Nepal,        |
|  | Low  | Hong Kong, China, USA, Switzerland, Turkey, Sri Lanka, Colombia, Nigeria, Morocco, Ethiopia,                | Bhutan, South Korea, Ghana, Bulgaria, Mauritius, Israel, Botswana, Czech Republic, Mozambique, Uganda, Bangladesh, Yemen, Belgium, Taipei, Chinese, Kenya, Zambia, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |  |
|--|------|--|--|
| 350190 : Highlighting important Potential markets            |      |  |  |
|  |      | Non - Tariff Measures  |  |
|  |      | High   | Low  |
| Trade Score  | High | Finland, Bahrain, Brunei Darussalam, Sweden, Kazakhstan, Austria, Kyrgyzstan, Denmark, Lebanon, Luxembourg, Cyprus, Estonia, | Myanmar, Bosnia and Herzegovina, Norway, India, Mongolia, Iraq, Armenia, Pakistan, Belarus, Palau, Syrian Arab Republic, Ukraine, Azerbaijan,                              |
|  | Low  | Tajikistan, Lao PDR, Japan, Malta, Tunisia, Ecuador, Peru, Cameroon, El Salvador, Côte d'Ivoire, Togo,                       | Namibia, Cambodia, Rwanda, Iceland, Mauritania, Macedonia, North, Lesotho, Honduras, Cabo Verde, Burundi, Uzbekistan, Costa Rica, Georgia, Papua New Guinea, Turkmenistan, |

### 5.5.13. Lactose Pharmaceuticals

Lactose pharmaceuticals (170211) have an existing market for Indian exports in Asian and African regions and Oman from the Middle East. In the potential market category, African markets dominate but the presence of Norway, Armenia and Bosnia and Herzegovina is also observed. However certain African and European countries which have high NTMs and low trade potential score are featured in the 3<sup>rd</sup> quadrant and hence such markets need to be avoided.

Table 5. 29 Lactose Pharmaceuticals (170211) existing and potential markets decision matrix

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |   |   |
|--|------|---|---|
| 170211 : Highlighting important Existing markets             |      |   |   |
|  |      | Non - Tariff Measures   |   |
|  |      | High  | Low   |
| Trade Score  | High | Guyana, Bahrain, UAE, Malaysia, Singapore, Viet Nam, Indonesia, Qatar, Greece, Saudi Arabia, Jordan, Russian Federation, Philippines, Kuwait, Finland, Netherlands, | Jamaica, Mozambique, Myanmar, Thailand, Uzbekistan, Cambodia, Oman, Bhutan, Maldives, Egypt,  |
|  | Low  | Lebanon, United Kingdom, Italy, Denmark, Australia, China, Sri Lanka, Ethiopia, Bolivia, Switzerland,   | Pakistan, Zambia, Nepal, South Africa, Syrian Arab Republic, Iraq, Mauritius, Ukraine, South Korea, Uganda, Belarus, Iran, Sudan, Tanzania, Ghana, Yemen, Turkey, |

| Decision Matrix based on Trade Score & Non - Tariff Measures |      |  |   |
|--|------|--|---|
| 170211 : Highlighting important Potential markets            |      |  |   |
|  |      | Non - Tariff Measures  |   |
|  |      | High   | Low   |
| Trade Score  | High | Sweden, Kazakhstan, Kyrgyzstan, Spain, Portugal, Mauritania, Luxembourg, Cyprus, Namibia, Malta, Poland, Barbados, | Norway, Bosnia and Herzegovina, Mongolia, Azerbaijan, Armenia, Senegal, Moldova, Botswana,  |
|  | Low  | Honduras, Lao PDR, Peru, Guatemala, Bahamas, Uruguay, Croatia, Slovenia,   | Macedonia, Panama, Iceland, Fiji, Lesotho, Andorra, Madagascar, Trinidad and Tobago, Solomon Islands, Cuba, Saint Helena, New Caledonia, Tokelau, |

## **5.6 Further Classification of Markets**

It has been observed further that the 2<sup>nd</sup> quadrant markets (Low NTM measures and High Trade Score) are markets with Low Market Share. Therefore, the 1<sup>st</sup> quadrant Markets (High NTM and High Trade Score) are also taken into consideration for further analysis of potential markets. These identified markets are discussed in Chapter number six.

## **5.7 Conclusion**

This chapter analysed India's dairy export potential with important parameters such as trade potential score and Non-Tariff barriers to identify the important existing and potential markets for exports of dairy products from India. A detailed matrix consisting of suitable markets across dairy products has also been constructed based on the Trade Score as well as the Non-Tariff Measures.

It is observed that 46% of the potential markets are in African region. This is partly because most African countries are untapped where as rest of the regions like Asia, Middle East and Oceania are currently being served by Indian dairy exporters. Following Africa, Asia is the second largest potential markets for exports of dairy products from India. 36% of the potential market is found in the Asian region. This could be on account of Asia's close proximity with India. Though Asian markets are being tapped, there is still unexplored potential. Europe is the 3<sup>rd</sup> most potential market for export of dairy products from India. Despite high quality measures, European region consists of 21% of the potential market. Middle East and America cover only about 1% of the potential markets. No potential markets are identified in the Oceania region.

After finding important existing and potential markets for exports of dairy products from India it is imperative to go through an in-depth analysis of Non-Tariff Measures faced by Indian Exporters with potential and existing markets. The next chapter will provide a deep insight to dairy exporters in context of Non-Tariff Measures.

## **CHAPTER-6: NON-TARIFF MEASURES ANALYSIS**

### **6.1 Background**

In India, dairy industry amongst agricultural sector is acknowledged as one of the largest contributors to the GDP. It grew at a rate of 6.4% annually in the last four years against the global growth rate of 1.7%. India is the largest producer of milk but the exports of dairy products are not significant. Two major factors contributing to the inefficiency in export are price competitiveness and international quality standards. To increase the dairy exports of India a detailed analysis of Non-Tariff Measures (quality measures) is vital. This chapter will provide insights with respect to Non-Tariff Measures faced by Indian dairy products in the overseas market.

The objectives of this chapter are as follows:

- To get an overview of Non-Tariff Measures in the dairy industry,
- To analyse the Non-Tariff Measures by applying descriptive statistics such as Frequency Ratio and Coverage Ratio for dairy products at 6-digit level.
- To map Non-Tariff Measures with Codex Food Safety Standards and Food Safety Standards Authority of India (FSSAI).
- To find out major Non-Tariff Measures implied by India's potential export markets.

### **6.2 Introduction**

The Non-Tariff Measures are those measures that restrict the export and import of goods and services, protect domestic industries and significantly distort trade. These measures are other than the ordinary tariff measures pertaining to health, environment and safety. According to UNCTAD (2017) the NTMs are generally defined as policy measures, other than customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both.

The above definition covers a broad range traditional trade policy tools, such as policy instruments including quotas or prices control, as well as regulatory and technical measures that stem from significant non-trade objectives related to health and environmental protection (sanitary and phytosanitary (SPS)) measures and Technical Barriers to Trade (TBT).

The concept of NTMs does not imply a negative impact on trade nor any legal judgment. Some NTMs might even have a positive impact on trade, though many NTMs are thought to have important restrictive or distortionary effects on international trade regardless of whether they are applied with protectionist intent or to address legitimate objectives, such as protecting health or safety, or the environment. This is the core reason of using the term measure instead of barrier.

### ***6.2.1 Classification of Non-Tariff Measures***

The classification of Non-Tariff Measures is majorly under two headings: Technical measures and Non-technical measures. The technical measures (such as sanitary or environmental protection measures) are further classified into A to C (quotas, price control, exports restrictions, or contingent trade protective measures and Non-Technical measures (quotas, price control, exports restrictions, or contingent trade protective measures, competition, trade-related investment measures, government procurement or distribution restriction) are classified into D to O. Export-related measures are classified into P Category. The details are presented in Table 6. 1.

The import related measures are applied by importing country on imported products to restrict the imports of the country while export related measures are applied by exporting country to restrict the export of the products and to serve domestic population first. The technical measures are technical one and includes Sanitary and Phytosanitary measures (A1-A9), Technical Barriers to Trade (B1-B9) and Pre-shipment Inspection and other formalities (C1-C9). The Non-technical measures are from D to O. Table 6. 2 displays the brief explanation of main NTMs related to import and export is given in and information on government bodies potentially responsible for NTMs is given in Table 6. 3.

### ***6.2.2 Non-Tariff Measures relevant to Dairy Industry***

According to UNCTAD, 2019 the total (All categories) NTM reported for world trade were 73656, out of which maximum are related with SPS (29750) followed by TBT (25772), and 1784 measures associated with Pre-shipment. In case of dairy products HS code 04 there are 5581 total NTMs measures out of which 2955 are classified under SPS (A), 1283 as TBT (B) and 113 as Pre-shipments. The details of these is given in Annexure II.

Table 6.1 Classification of Non-Tariff Measures

| Import or Export related measures | Technical or Non-technical measures | Name of NTMs |   |
|-----------------------------------|-------------------------------------|--------------|---|
| Import related measures           | Technical Measures                  | A            | Sanitary and Phytosanitary Measures   |
|                                   |                                     | B            | Technical Barriers to Trade   |
|                                   |                                     | C            | Pre-Shipment Inspection and Other Formalities                               |
|                                   | Non Technical Measures              | D            | Contingent Trade-Protective Measures  |
|                                   |                                     | E            | Non-Automatic Licensing, Quotas, Prohibitions and Quantity-Control Measures |
|                                   |                                     | F            | Price-Control Measures, Including Additional Taxes and Charges              |
|                                   |                                     | G            | Finance Measures  |
|                                   |                                     | H            | Measures Affecting Competition  |
|                                   |                                     | I            | Trade-Related Investment Measures   |
|                                   |                                     | J            | Distribution Restrictions   |
|                                   |                                     | K            | Restrictions on Post-Sales Services   |
|                                   |                                     | L            | Subsidies (Excluding Export Subsidies Under P7)                             |
|                                   |                                     | M            | Government Procurement Restrictions   |
|                                   |                                     | N            | Intellectual Property   |
| O                                 | Rules of Origin                     |              |   |
| Exports related measures          |                                     | P            | Export-Related Measures   |

Source: UNCTAD, 2019



Table 6. 2 Brief Explanation of Non-Tariff Measures related to Import and Export

|                        | NTM Measures | Brief Explanation   |   |
|------------------------|--------------|---|---|
| Technical Measures     | A            | Sanitary and Phytosanitary  | Plant and animal health regulations   |
|                        | B            | Technical Barriers to Trade   | Regulations on the contents of products, the process by which they were manufactured, their labelling etc.  |
|                        | C            | Pre-shipment inspection and other formalities   | Requirements that goods be checked, or licenses secured before they can be imported.  |
| Non-Technical Measures | D            | Contingent trade-protective measures  | Policies that protect the economy from the impact of certain imports, such as anti-dumping measures, safeguard for agriculture etc.   |
|                        | E            | Non-automatic licensing, quotas, prohibitions and quantity control, measures other than for SPS or TBT reasons. | Policies that limit the total number of imports of a certain good, such as quotas, rules stating that imported goods can only be used in certain industries or temporary bans on certain products.                        |
|                        | F            | Price-control measures, including additional taxes and charges  | Charges or taxes (other than tariffs) that change the price of imports, for example, by ensuring that imports do not undercut the price of domestically-produced goods.   |
|                        | G            | Finance measures  | Policies that regulate access to foreign exchange for imports, for example, by requiring deposits to be paid in advance, or that customs duties must be paid ahead of time.   |
|                        | H            | Measures affecting competition  | For example, compulsory requirements to use national services, or use of a single state-owned importer for some goods.  |
|                        | I            | Trade-related investment measures   | Requirements that goods should contain a certain proportion of locally-produced content, or policies that limit imports based on the performance of the exports.  |
|                        | J            | Distribution restrictions   | Measures which make it harder to sell imported goods in all parts of a market, for example, by stating that goods can only be sold in areas that meet certain conditions.   |
|                        | K            | Restrictions on post-sale services  | Policies stating that post-sales services (customer services, repair services, etc.) must be provided by a local company.   |
|                        | L            | Subsidies   | Money from government for domestic producers, making it harder for importers to compete.  |
|                        | M            | Government procurement restrictions   | Ensuring that governments buy goods from domestic producers.  |
|                        | N            | Intellectual property   | Ensuring that imports comply with patents, trademarks, industrial designs, copyright, geographical indications.   |
|                        | O            | Rules of origin   | Rules requiring products to be able to demonstrate in which countries they were produced, often so that it can be determined whether the good can benefit from preferential access under a bilateral free trade agreement |
|                        | P            | Export-related measures   | Policies undertaken by the exporter's government, for example, to limit exports to a certain country through trade embargos, or to reduce exports to keep domestic prices low   |

Source: UNCTAD, 2019.

*Table 6.3 Government Bodies Potentially responsible for Non-Tariff Measures in Country*

| Non-Tariff Measures |   | Government bodies potentially responsible   |
|---------------------|---|---|
| A                   | SPS measures Sanitary and phytosanitary measures                                  | Ministry of Agriculture; Standardization Agency; Ministry of Health                   |
| B                   | TBT measures  | Standardization Agency; Ministry of Health; Ministry of Ecology; Ministry of Industry |
| C                   | Pre-shipment inspection and other formalities                                     | Customs Agency; Standardization Agency  |
| D                   | Contingent trade protective measures  | Ministry of Finance; Ministry of Economy or Trade                                     |
| E                   | Non-automatic licensing, quotas, prohibitions and other quantity control measures | Ministry of the Economy (or Trade, Foreign Relations)                                 |
| F                   | Price control measures including additional taxes and charges                     | Ministry of Economy (or Trade, Foreign Relations); Customs Agency                     |
| G                   | Finance measures  | Ministry of Finance; National Bank  |
| H                   | Measures affecting competition  | Ministry of Economy (or Trade, Foreign Relations)                                     |
| I                   | Trade-related investment measures   | Ministry of Economy (or Trade, Foreign Relations)                                     |
| P                   | Export-related measures   | Ministry of Economy (or Trade, Foreign Relations); Customs Agency                     |

*Source: UNCTAD, 2019.*

### **6.3 Incidence Analysis of Non-Tariff Measures for Dairy Products.**

The frequency ratio and coverage ratio are two main descriptive statistics to analyse the incidence of Non-Tariff Measures. The frequency ratio calculates the proportion of products covered by one or more NTMs and the coverage ratio calculate the proportion of trade value covered by one or more NTMs. The frequency index simply captures the percentage of products that are subject to one or more NTMs and the coverage ratio captures the percentage of imports that are subject to one or more NTMs.

The high frequency and coverage ratio denote the high level of Non-Tariff Measures and low frequency and coverage ratio denotes the low level of Non-Tariff Measures. The zero-incidence value represents the non-existence of the barriers.

In some cases, the coverage ratio can be relatively higher than frequency ratio, mainly because of two reasons: first, country import larger volume of those products where NTMs are more extensively used. Second, larger use of NTMs on products that are most traded. The frequency ratio can also be higher than coverage ratio. This is possibly due to the endogeneity issue (NTMs may restrict trade and this will downwardly bias the coverage ratio). The endogeneity issue means that quantitative restrictions are still significant.

The analysis is conducted on HS code 6-digit level for each product category. Formula to calculate frequency ratio and coverage ratio is given below.

|   |   |
|---|---|
| <p>Formula to calculate Frequency Ratio:</p> $Fi = \frac{\sum Ds Ms}{\sum Ms} . 100$ <p>Where</p> <p>Ds- Presence or absence of NTM</p> <p>Ms- Total existing number of products.</p> | <p>Formula to calculate Coverage Ratio:</p> $Ci = \frac{\sum Ds Vs}{\sum Vs} . 100$ <p>Where</p> <p>Ds- Presence or absence of NTM</p> <p>Vs- Total import value of the products.</p> |
|---|---|

### 6.3.1 Countries considered for Incidence Analysis

Table 6. 4 represents the list of countries in each region considered to calculate frequency and coverage ratio. This list of countries has been compiled after calculating the trade score and NTM measures for every product using the decision matrix given in section Chapter 5.

Table 6. 4 Countries considered for Incidence Analysis

| S.No. | Africa                   | Asia and Pacific  | Europe                 | MENA       | South Latin America |
|-------|--------------------------|-------------------|------------------------|------------|---------------------|
| 1     | Angola                   | Afghanistan       | Albania                | Algeria    | Antigua and Barbuda |
| 2     | Benin                    | Azerbaijan        | Andorra                | Bahrain    | Argentina           |
| 3     | Botswana                 | Bhutan            | Armenia                | Comoros    | Aruba               |
| 4     | Burkina Faso             | Brunei Darussalam | Austria                | Djibouti   | Bahamas             |
| 5     | Burundi                  | Cambodia          | Belarus                | Egypt      | Barbados            |
| 6     | Cabo Verde               | China             | Bosnia and Herzegovina | Iraq       | Belize              |
| 7     | Cameroon                 | Hong Kong, China  | Bulgaria               | Jordan     | Bolivia             |
| 8     | Central African Republic | India             | Croatia                | Kuwait     | Brazil              |
| 9     | Chad                     | Indonesia         | Cyprus                 | Lebanon    | Cayman Islands      |
| 10    | Côte d'Ivoire            | Japan             | Czech Republic         | Mauritania | Chile               |

| S.No. | Africa                | Asia and Pacific     | Europe               | MENA         | South Latin America              |
|-------|-----------------------|----------------------|----------------------|--------------|----------------------------------|
| 11    | Equatorial Guinea     | Kazakhstan           | Denmark              | Oman         | Colombia                         |
| 12    | Gabon                 | North Korea          | Estonia              | Qatar        | Costa Rica                       |
| 13    | Gambia                | Korea, Republic of   | Finland              | Saudi Arabia | Cuba                             |
| 14    | Ghana                 | Kyrgyzstan           | Georgia              | Sudan        | Dominica                         |
| 15    | Lesotho               | Lao PDR              | Germany              | Tunisia      | Ecuador                          |
| 16    | Liberia               | Laos                 | Greece               | Yemen        | El Salvador                      |
| 17    | Madagascar            | Macao, China         | Hungary              |              | Grenada                          |
| 18    | Malawi                | Malaysia             | Iceland              |              | Guatemala                        |
| 19    | Mali                  | Maldives             | Israel               |              | Haiti                            |
| 20    | Mauritius             | Mongolia             | Italy                |              | Honduras                         |
| 21    | Mozambique            | Myanmar              | Latvia               |              | Mexico                           |
| 22    | Namibia               | New Caledonia        | Luxembourg           |              | Montserrat                       |
| 23    | Niger                 | Pakistan             | Macedonia, North     |              | Nicaragua                        |
| 24    | Nigeria               | Papua New Guinea     | Malta                |              | Panama                           |
| 25    | Rwanda                | Philippines          | Moldova, Republic of |              | Paraguay                         |
| 26    | Saint Helena          | Sri Lanka            | Norway               |              | Peru                             |
| 27    | Sao Tome and Principe | Syrian Arab Republic | Poland               |              | Saint Kitts and Nevis            |
| 28    | Senegal               | Taipei, Chinese      | Portugal             |              | Saint Lucia                      |
| 29    | Seychelles            | Tajikistan           | Russian Federation   |              | Saint Vincent and the Grenadines |
| 30    | South Africa          | Tokelau              | Slovenia             |              | Suriname                         |
| 31    | Togo                  | Turkmenistan         | Spain                |              | Trinidad and Tobago              |
| 32    | Zimbabwe              | Uzbekistan           | Sweden               |              | Uruguay                          |
| 33    |                       | Viet Nam             | Ukraine              |              | Venezuela                        |

*Source: Author's Compilation*

### ***6.3.2 Incidence analysis for Butter and Ghee***

Butter and Ghee is included in HS codes 040510, 040520 and 040590. The Figure 6. 1 shows that the Africa have low incidence value which makes African countries suitable to export butter, if substantial market is found. The incidence value is high in South/Latin America. This means the exporter have to meet all NTMs that applied by countries of this region to restrict the import of dairy products. The detailed list of unique NTMs applied by countries considered for the analysis is given in Table 6. 9, Table 6. 10 and Table 6. 11. The incidence value for SPS is high in Europe and Middle East North Africa.

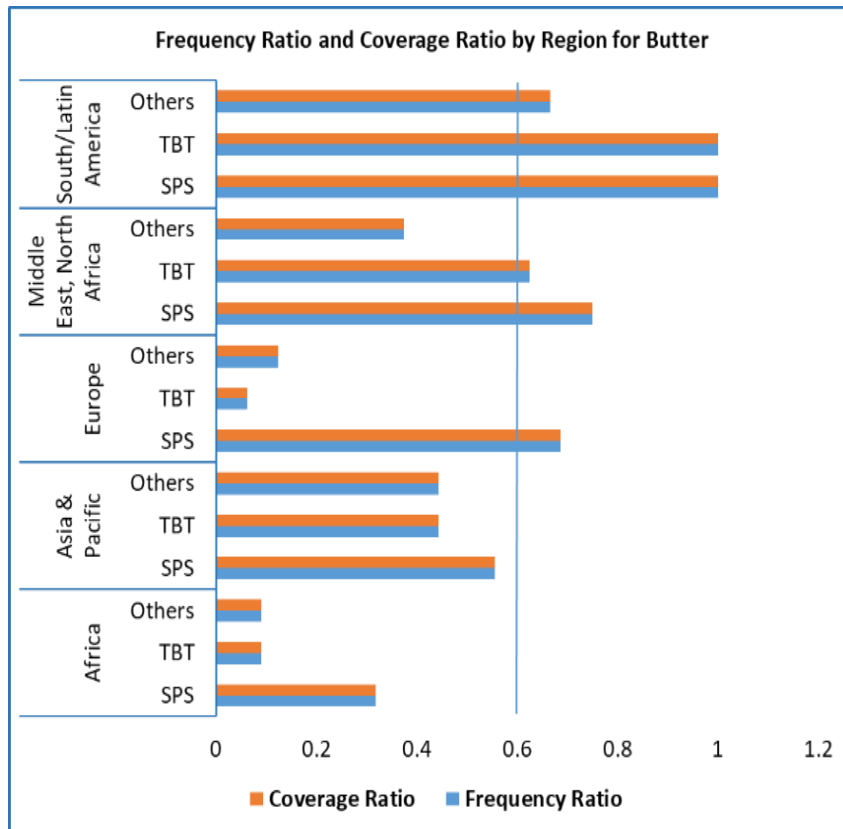


Figure 6. 1 Frequency Ratio and Coverage Ratio by Region for Butter  
Source: Author's Compilation

### 6.3.3 Incidence analysis for SMP

SMP is defined by HS code 040210. The Figure 6. 2 portrays that the incidence value in Asia & Pacific is high in all NTMs categories. African countries have lowest Non-Tariff Measures which makes these countries suitable to export SMP, if substantial market is found. In South America SPS and TBT are significant. SPS is the major NTM that applied by European countries to restrict trade.

The figure below depicts that in some region incidence value is zero signifies that non-existence of the barriers. The detailed list of unique NTMs applied by countries considered for analysis is given in Table 6. 12.

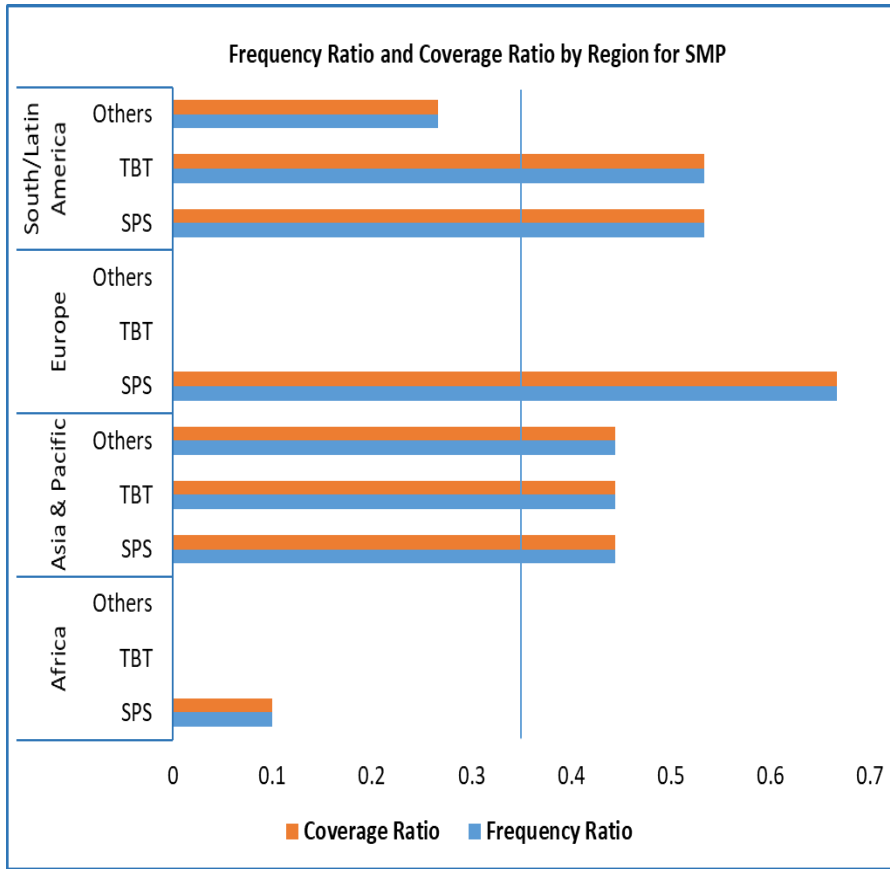


Figure 6. 2 Frequency Ratio and Coverage Ratio by Region for SMP  
 Source: Author's Compilation

### 6.3.4 Incidence analysis for Cheese

Cheese comprises 040610, 040620, 040630 and 040690. The Figure 6. 3 depicts that Africa have low incidence value. This signifies African counties as a most preferential potential countries to export cheese, if substantial market is found. The incidence value in case of SPS is high in Asia & Pacific and Europe. The incidence value for TBT is also in Asia & Pacific.

The detailed list of unique NTMs applied by countries considered for the analysis is given in Table 6. 13, Table 6. 14, Table 6. 15 and Table 6. 16.

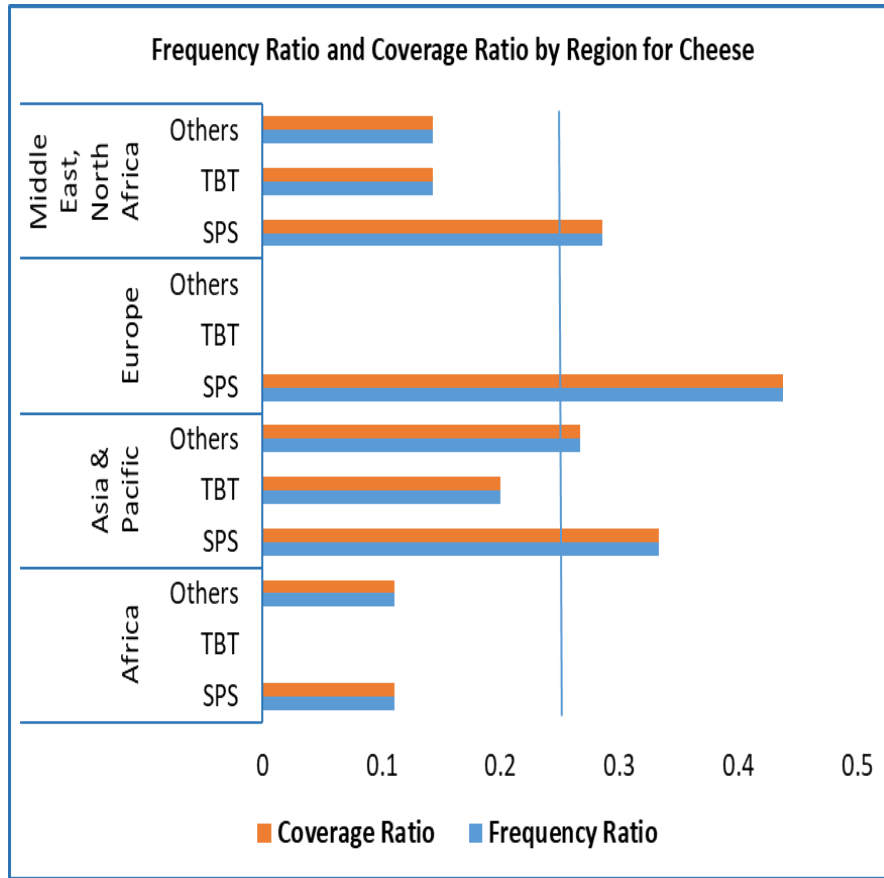


Figure 6. 3 Frequency Ratio and Coverage Ratio by Region for Cheese  
Source: Author's Compilation

### 6.3.5 Incidence analysis for WMP

WMP combines HS code 040221, 040229. The results of the incidence analysis (See Figure 6. 4) Shows that the NTMs are high in Asia & Pacific and Middle East North Africa (MENA). The region Europe and South/Latin America have low NTMs which entails countries of these regions suitable to export WMP, if substantial market is found. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.

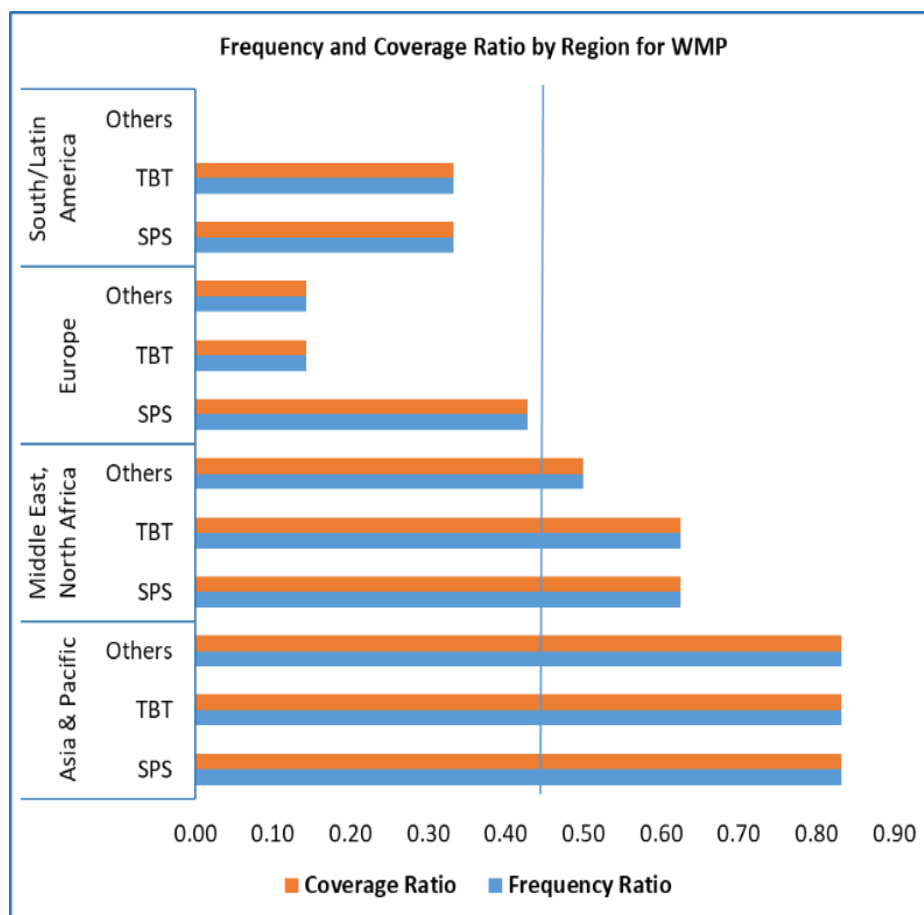


Figure 6. 4 Frequency and Coverage Ratio by Region for WMP  
Source: Author's Compilation

### 6.3.6 Incidence analysis for Bulk and Pack Milk

Bulk and Pack milk defined as HS code 040110, 040120. Figure 6. 5 displays that African countries have lowest Non-Tariff Measures which makes these countries suitable to export bulk and pack milk, if substantial market is found. The figure depicts that the SPS is high in Europe, Middle East North Africa (MENA) and South/Latin America.

It is clear from the figure that SPS and TBT are the major barriers applied by potential countries to restrict the import of bulk and pack milk. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.



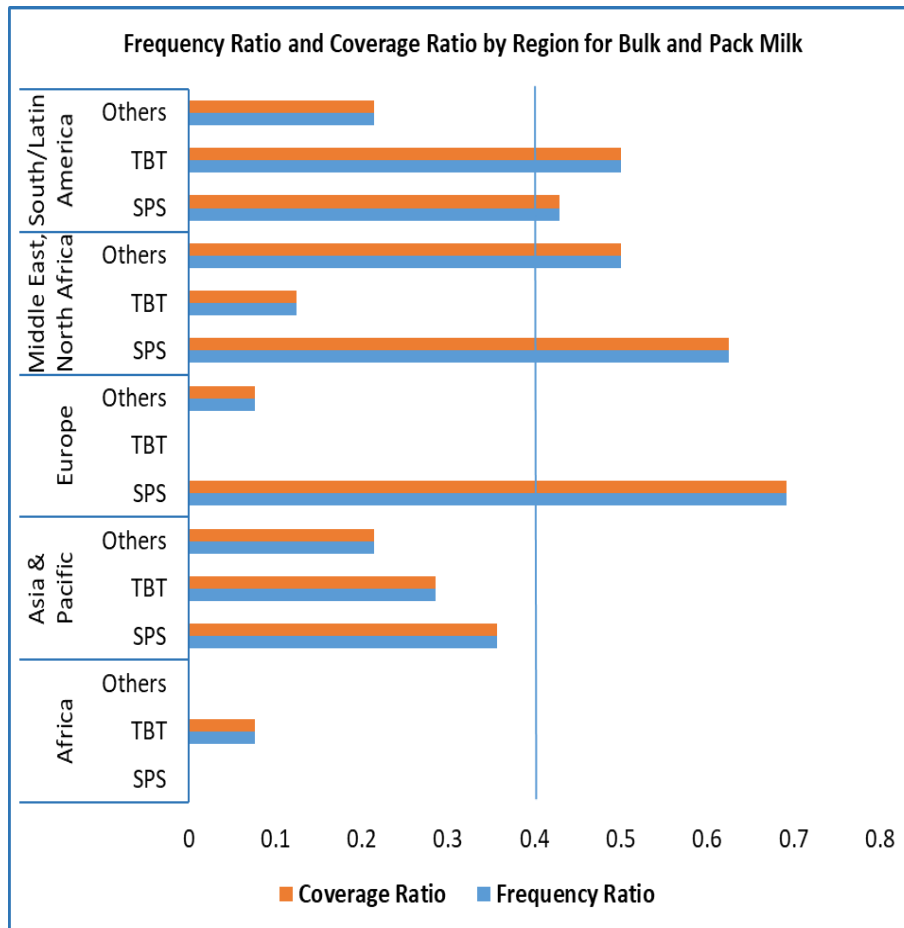


Figure 6. 5 Frequency Ratio and Coverage Ratio by Region for Bulk and Pack Milk  
Source: Author's Compilation

### 6.3.7 Incidence analysis for Whey Powder

Whey powder includes HS codes 040410 and 040490. Figure 6. 6 shows that Africa have lowest NTMs that makes African countries appropriate to export whey powder. The incidence value for SPS is high in Asia & Pacific, Europe and Middle East North Africa. In Middle East North Africa, the incidence value is high for TBT also. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III. The figure clearly shows that in this product category also SPS and TBT are extensively used.

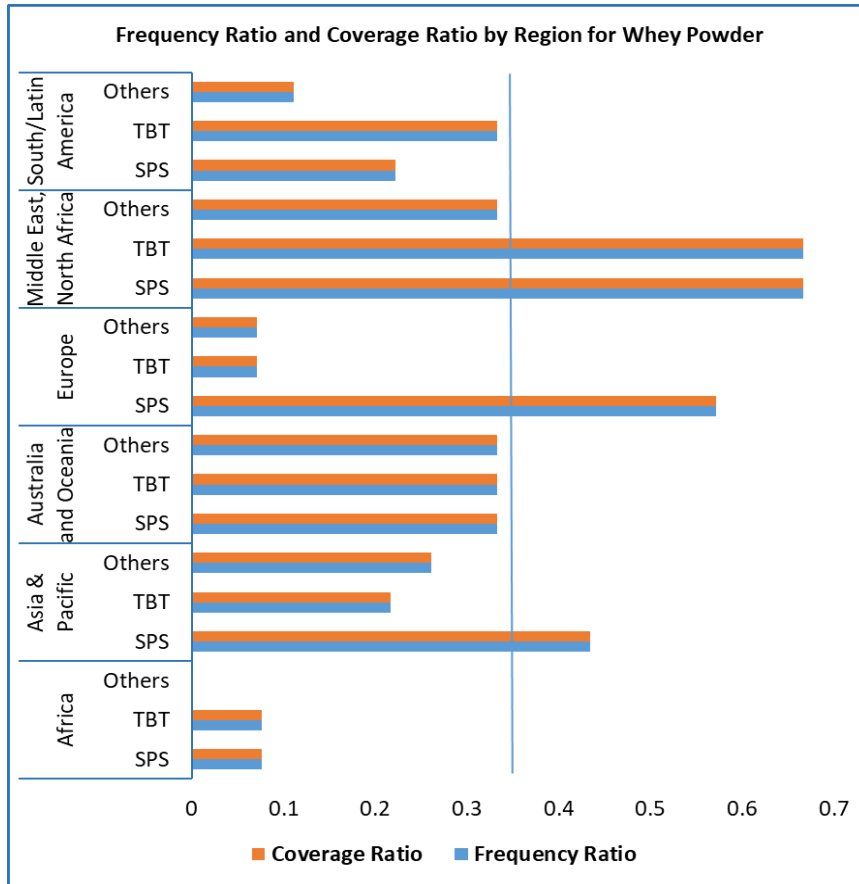


Figure 6. 6 Frequency Ratio and Coverage Ratio by Region for Whey Powder  
Source: Author's Compilation

### 6.3.8 Incidence analysis for Cream

Cream includes HS codes 040130, 040140 and 040150. The Figure 6. 7 demonstrates that NTMs are high in all regions. Only in Asia & Pacific the NTMs other than SPS and TBT are low. The detailed list of unique NTMs applied by countries considered for the analysis is given Annexure III.

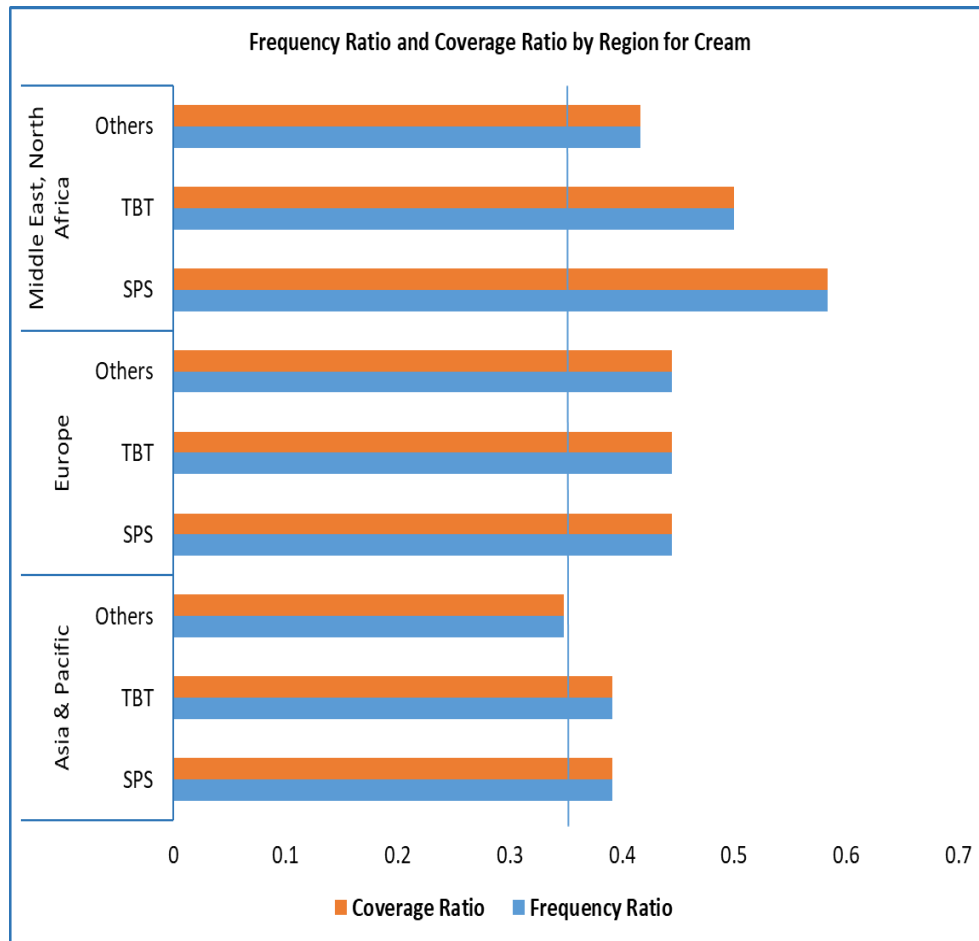
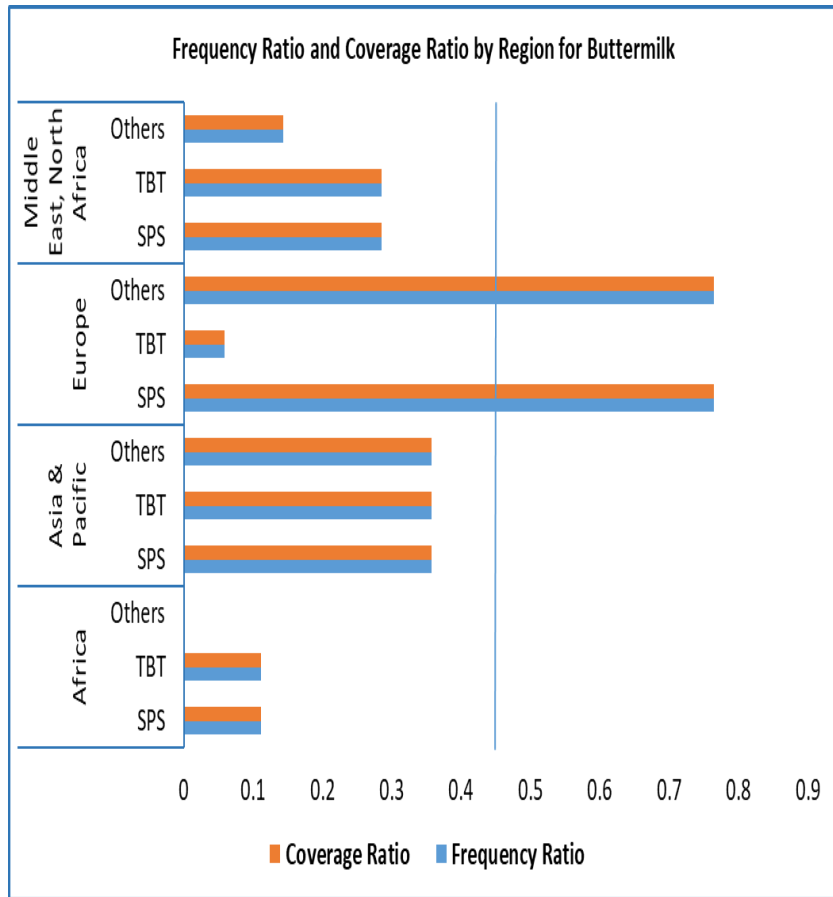


Figure 6. 7 Frequency Ratio and Coverage Ratio by Region for Cream  
Source: Author's Compilation

### 6.3.9 Incidence analysis for Buttermilk

Buttermilk defined by HS code 040390. The Figure 6. 8 depicts that Africa have lowest NTMs which makes African counties suitable to export buttermilk, if suitable countries are found. The NTMs are low in Asia & Pacific and Middle East North Africa also which makes countries of these regions preferable to export buttermilk, if substantial countries are found. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.



*Figure 6. 8 Frequency Ratio and Coverage Ratio by Region for Buttermilk*  
*Source: Author's Compilation*

### **6.3.10 Incidence analysis for Condensed Milk**

Condensed milk combines HS code 040291 and 040299. Figure 6. 9 displays all regions have high incidence value means that Non-Tariff Measures are extensively applied by all regions in this product category. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.

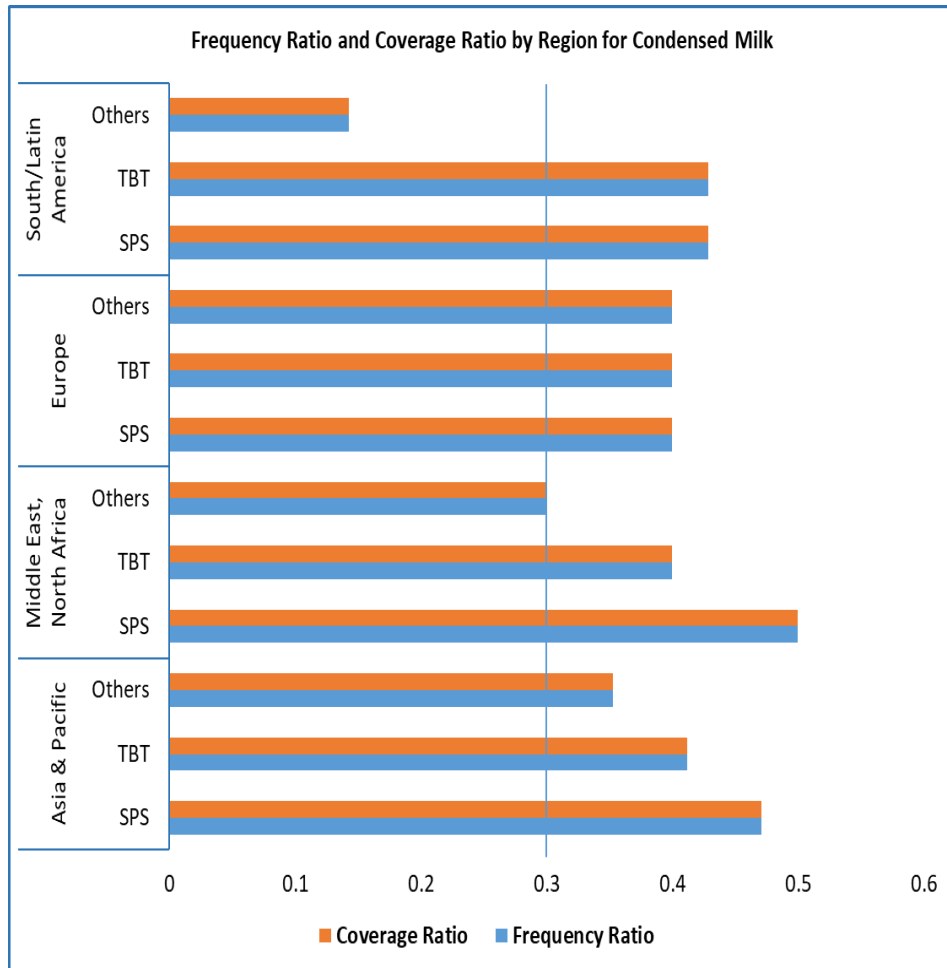


Figure 6. 9 Frequency and Coverage Ration by Region for Condensed Milk  
Source: Author's Compilation

### 6.3.11 Incidence analysis for Yoghurt

Yoghurt include HS code 040310. The Figure 6. 10 displays that Africa have lowest NTMs which makes African countries are most preferential to export yoghurt, if significant countries are found. Asia & Pacific have highest incidence value that signifies high number of NTMs applied by this region to restrict trade. In this product category also the major NTMs are SPS and TBT. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.

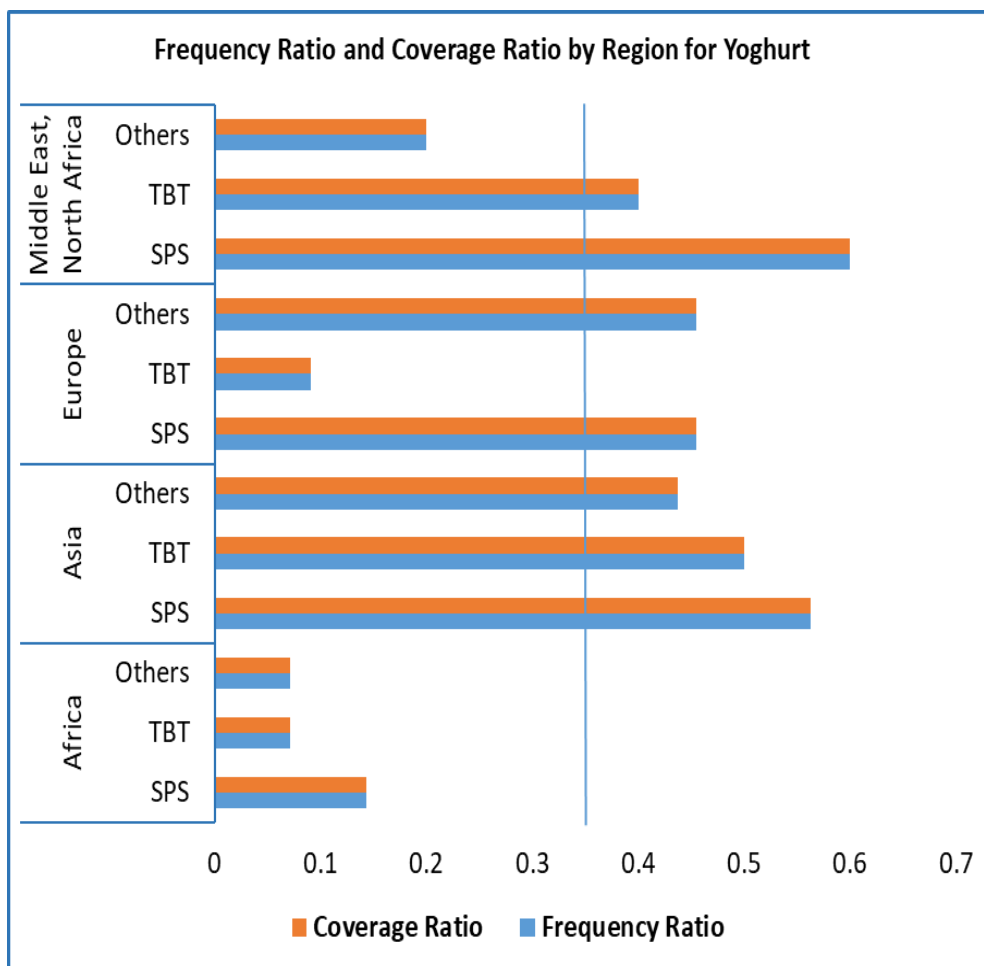


Figure 6. 10 Frequency Ratio and Coverage Ratio by Region for Yoghurt  
Source: Author's Compilation

### 6.3.12 Incidence analysis for Infant Milk Products

Infant Milk combines HS code 190110. The Figure 6. 11 that Africa have lowest incidence value that signifies very few NTMs are applied by these countries to restrict trade. Therefore, African countries are most preferable countries to export infant milk. South/Latin America have highest incidence value in case of SPS and TBT. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.

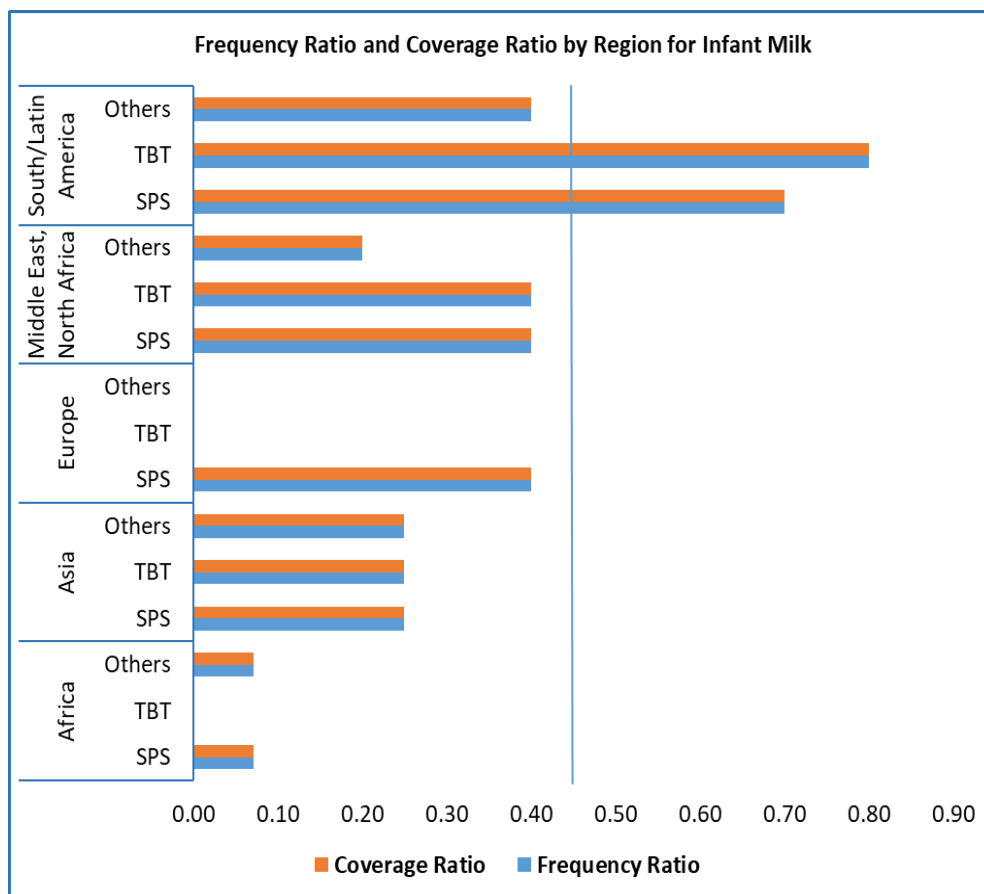


Figure 6. 11 Frequency Ratio and Coverage Ratio by Region for Infant Milk  
Source: Author's Compilation

### 6.3.13 Incidence analysis for Casein

Casein combines HS codes 350110, 350190. The Figure 6. 12 portrays African countries have lowest Non-Tariff Measures which makes these countries suitable to export casein, if substantial market is found. The SPS and TBT is high in Europe and South/Latin America. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.

It can be analysed from the figure that in this product category also the SPS and TBT are the major barriers applied by potential countries.

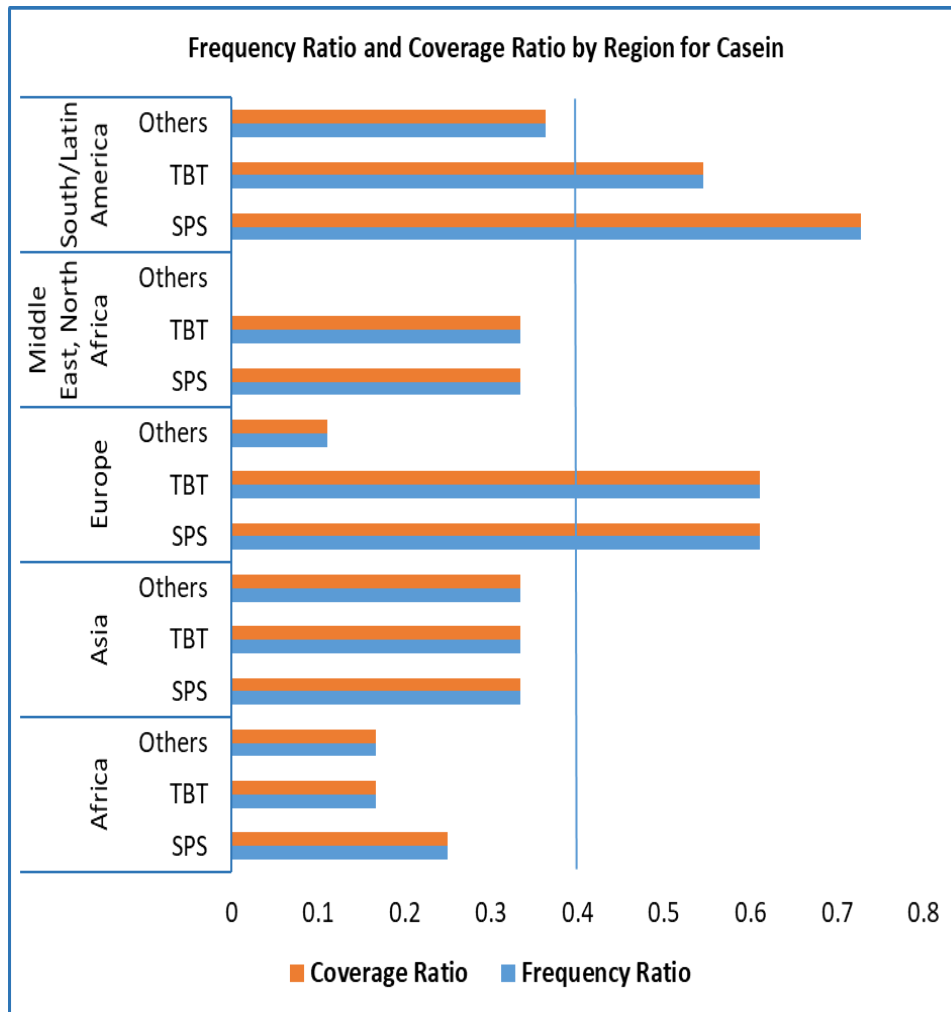


Figure 6. 12 Frequency Ratio and Coverage Ratio by Region for Casein  
Source: Author's Compilation

### 6.3.14 Incidence analysis for Caseinates

This product category combines HS code 350190. The Figure 6. 13 portrays African countries have lowest Non-Tariff Measures which makes these countries suitable to export caseinates. The incidence value is high for SPS and TBT in Middle East North Africa and South/Latin America. The value of SPS is high in Europe also. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.



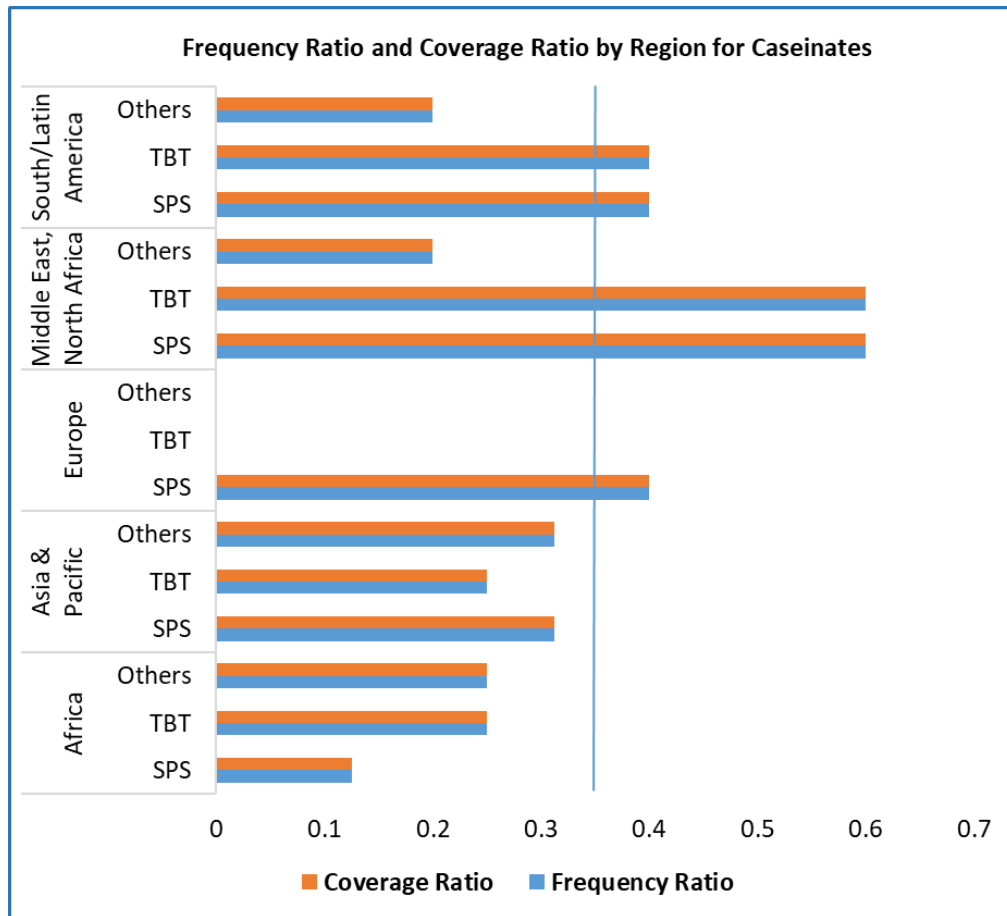


Figure 6. 13 Frequency Ratio and Coverage Ratio by Region for Caseinates  
 Source: Author's Compilation

### 6.3.15 Incidence analysis for Lactose Pharma

The Figure 6. 14 displays Asia and Pacific applies high number of NTMs to restrict import of lactose pharma. SPS is very high in Middle East North America. The detailed list of unique NTMs applied by countries considered for the analysis is given in Annexure III.

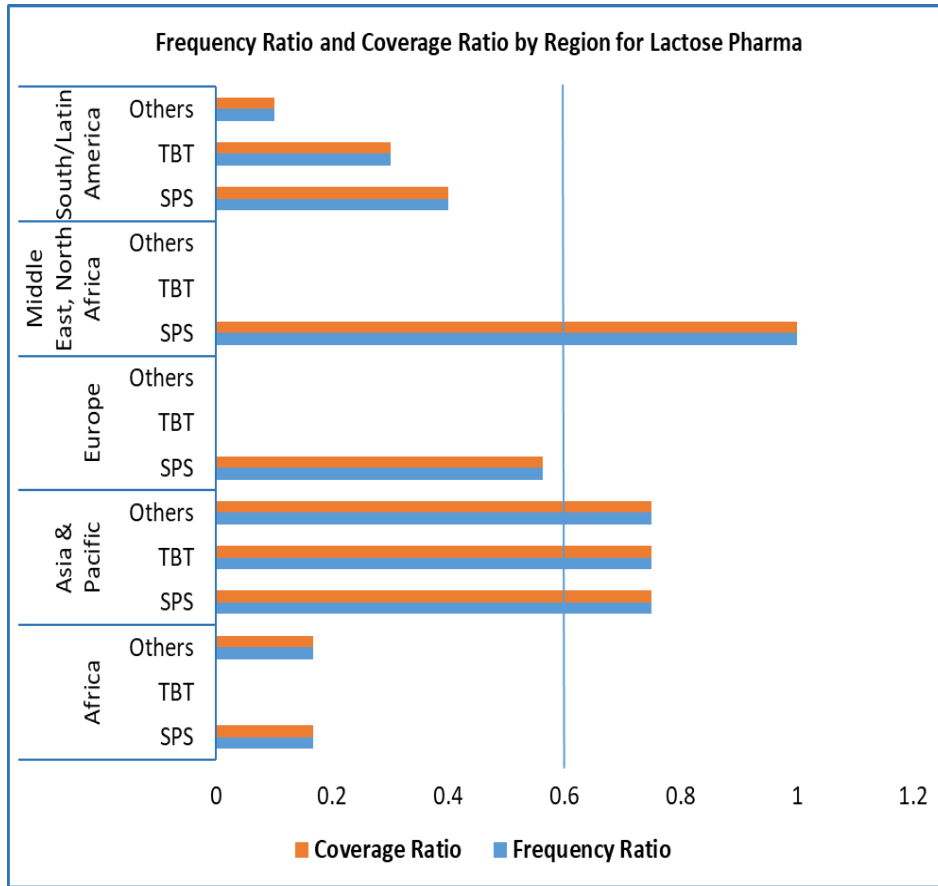


Figure 6. 14 Frequency Ratio and Coverage Ratio by Region for Lactose Pharma  
 Source: Author's Compilation

The findings of incidence analysis portray that major NTMs are SPS and TBT that are applied by potential countries to restrict import of specific product. Region wise degree of Non-Tariff Measures is given in Table 6. 5.

*Table 6. 5 Region wise degree of Non-Tariff Measures*

| Products           | NTMs   | Africa | Asia & Pacific | Europe | Middle East, North Africa | South/Latin America |
|--------------------|--------|--------|----------------|--------|---------------------------|---------------------|
| Butter             | SPS    | Low    | Low            | High   | High                      | High                |
|                    | TBT    | Low    | Low            | Low    | High                      | High                |
|                    | Others | Low    | Low            | Low    | Low                       | High                |
| SMP                | SPS    | Low    | High           | High   | Nil                       | High                |
|                    | TBT    | Zero   | High           | Zero   | Nil                       | High                |
|                    | Others | Zero   | High           | Zero   | Nil                       | Low                 |
| Cheese             | SPS    | Low    | High           | High   | High                      | Nil                 |
|                    | TBT    | Zero   | Low            | Zero   | Low                       | Nil                 |
|                    | Others | Low    | High           | Zero   | Low                       | Nil                 |
| WMP                | SPS    | Zero   | High           | Low    | High                      | Low                 |
|                    | TBT    | Zero   | High           | Low    | High                      | Low                 |
|                    | Others | Zero   | High           | Low    | High                      | Low                 |
| Bulk and Pack Milk | SPS    | Zero   | Low            | High   | High                      | High                |
|                    | TBT    | Low    | Low            | Low    | Low                       | High                |
|                    | Others | Zero   | Low            | Low    | High                      | Low                 |
| Whey Powder        | SPS    | Low    | High           | High   | High                      | Low                 |
|                    | TBT    | Low    | Low            | Low    | High                      | Low                 |
|                    | Others | Low    | Low            | Low    | Low                       | Low                 |
| Cream              | SPS    | Zero   | High           | High   | High                      | Nil                 |
|                    | TBT    | Zero   | High           | High   | High                      | Nil                 |
|                    | Others | Zero   | Low            | High   | High                      | Nil                 |
| Buttermilk         | SPS    | Low    | Low            | High   | Low                       | Nil                 |
|                    | TBT    | Low    | Low            | Low    | Low                       | Nil                 |
|                    | Others | Zero   | Low            | High   | Low                       | Nil                 |
| Condensed Milk     | SPS    | Low    | High           | High   | High                      | High                |
|                    | TBT    | Low    | High           | High   | High                      | High                |
|                    | Others | Low    | High           | High   | Moderate                  | Low                 |
| Yoghurt            | SPS    | Low    | High           | High   | High                      | Nil                 |
|                    | TBT    | Low    | High           | Low    | High                      | Nil                 |
|                    | Others | Low    | High           | High   | Low                       | Nil                 |
| Infant Milk        | SPS    | Low    | Low            | Low    | Low                       | High                |
|                    | TBT    | Zero   | Low            | Zero   | Low                       | High                |
|                    | Others | Low    | Low            | Zero   | Low                       | Low                 |
| Casein             | SPS    | Low    | Low            | High   | Low                       | High                |
|                    | TBT    | Low    | Low            | High   | Low                       | High                |
|                    | Others | Low    | Low            | Low    | Low                       | Low                 |
| Caseinates         | SPS    | Low    | Low            | High   | High                      | High                |
|                    | TBT    | Low    | Low            | Zero   | High                      | High                |
|                    | Others | Low    | Low            | Zero   | Low                       | Low                 |
| Lactose Pharma     | SPS    | Low    | High           | High   | High                      | Low                 |
|                    | TBT    | Zero   | High           | Zero   | Zero                      | Low                 |
|                    | Others | Low    | High           | Zero   | Zero                      | Low                 |

*Source: Author's Compilation*

## 6.4 Major Non-Tariff Measures implied by potential countries to the import of dairy products

In spite of number one position in milk production the Indian Exporters are not competitive in the international market. This is mainly because of Non- tariff Measures implied by many countries to the imports of dairy products. This section of this research gives the list and better understanding of major NTMs faced by Indian Dairy exporters to export dairy products in the potential markets. The Annexure III provides the list of major NTMs that could be faced by Indian dairy exporters to export a specific dairy product to a specific potential country.

The present research analysed eight major NTMs in the potential countries that could be faced by Indian dairy exporters. Therefore, it is advisable to Indian dairy exporters to first meet these NTMs to export dairy products in the international market. The Table 6. 6 gives the list major NTMs that could be faced by Indian dairy exporters in exporting all categories of dairy products to potential countries and Table 6. 7 provides the list of major NTMs that could be faced by Indian dairy exporters in exporting specific dairy product.

*Table 6. 6 Major Non-Tariff Measures implied by potential countries to the import of Dairy Products*

| S. No. | Major Non-Tariff Measures implied by potential countries to the import of dairy Products |  |
|--------|--|--|
| 1      | A11  | Temporary geographic prohibitions for SPS reasons  |
| 2      | A21  | Tolerance limits for residues of or contamination by certain (non -microbiological) substances |
| 3      | A31  | Labelling requirements   |
| 4      | A82  | Testing requirements   |
| 5      | A83  | Certification requirements   |
| 6      | A84  | Inspection requirements  |
| 7      | A85  | Traceability requirements  |
| 8      | A89  | Conformity assessment related to sanitary and Phytosanitary conditions not elsewhere specified |
| 9      | B82  | Testing requirements   |
| 10     | E1   | Non-automatic import licensing procedures other than authorization for SPS or TBT reasons.     |

*Source: Author's Compilation*

Table 6. 7 Major Non-Tariff Measures Product Specific

| Products              | Major Non-Tariff Measures Product Specific |     |     |     |     |     |      |      |     |     |      |      |     |     |    |
|-----------------------|--|-----|-----|-----|-----|-----|------|------|-----|-----|------|------|-----|-----|----|
| <b>Butter</b>         | 040510                                     | A7  | A8  | B11 | B22 | B32 | B851 | B853 | C1  | E22 | E311 | E312 | F71 | H11 | I1 |
|                       | 040520                                     | A85 | B83 | B84 | E1  |     |      |      |     |     |      |      |     |     |    |
|                       | 040590                                     | B11 |     |     |     |     |      |      |     |     |      |      |     |     |    |
| <b>SMP</b>            | 040210                                     | A31 | A81 | A82 | A83 | A84 | A85  |      |     |     |      |      |     |     |    |
| <b>Cheese</b>         | 040610                                     | A89 | B82 |     |     |     |      |      |     |     |      |      |     |     |    |
|                       | 040620                                     | A19 | A31 | A85 | E1  |     |      |      |     |     |      |      |     |     |    |
|                       | 040630                                     | A89 | E1  |     |     |     |      |      |     |     |      |      |     |     |    |
|                       | 040640                                     | A14 | A21 | A22 | A31 | A33 | A82  | A83  | A84 | B31 |      |      |     |     |    |
|                       | 040690                                     | A89 | B81 | E1  | F71 |     |      |      |     |     |      |      |     |     |    |
| <b>WMP</b>            | 040221                                     | A14 | A21 | A33 | A82 | A83 | A84  |      |     |     |      |      |     |     |    |
|                       | 040229                                     | A83 | A85 |     |     |     |      |      |     |     |      |      |     |     |    |
| <b>Cream</b>          | 040130                                     | Nil |     |     |     |     |      |      |     |     |      |      |     |     |    |
|                       | 040140                                     | A21 | A33 | A82 | A83 | E1  |      |      |     |     |      |      |     |     |    |
|                       | 040150                                     | A14 | A21 | A31 | A83 | B31 | E1   |      |     |     |      |      |     |     |    |
| <b>Butter Milk</b>    | 040390                                     | A89 | B33 | B82 |     |     |      |      |     |     |      |      |     |     |    |
| <b>Condensed Milk</b> | 040291                                     | A11 | A85 | A89 | B33 |     |      |      |     |     |      |      |     |     |    |
|                       | 040299                                     | B15 | F71 |     |     |     |      |      |     |     |      |      |     |     |    |
| <b>Yoghurt</b>        | 040310                                     | A89 | B84 |     |     |     |      |      |     |     |      |      |     |     |    |
| <b>Infant Milk</b>    | 190110                                     | A11 | A8  | B32 | B8  | C1  | E111 |      |     |     |      |      |     |     |    |
| <b>Casein</b>         | 350110                                     | A81 | C1  |     |     |     |      |      |     |     |      |      |     |     |    |
| <b>Caseinates</b>     | 350190                                     | A31 | A83 | A84 | B31 |     |      |      |     |     |      |      |     |     |    |
| <b>Lactose Pharma</b> | 170211                                     | A52 | A7  | D42 | D52 | D6  | E25  |      |     |     |      |      |     |     |    |

Source: Author's Compilation

#### ***6.4.1 A 11 Temporary geographic prohibitions for SPS reasons***

The NTM A11 includes the prohibition of imports of specified products from countries or regions due to infectious/contagious diseases. Measures included in this category are typically more of an ad hoc and time-bound nature. For example, Import of all foodstuff and beverages used by human being and animals from Japan is prohibited by many countries due to tsunami and explosion of the nuclear reactive contamination (includes products in HS 04).

Generally, people are compassionate towards cow in India & also due to religious belief even worships them. Cow slaughter is taboo in India. Those animals, which are productive and gives milk are looked after well by their owners. Many unproductive and old animals are generally sent to “Gaushala”, where they are housed till they die.

Some constraints are observed due to rearing of milch animals by landless & marginal farmers in India, which can become NTBs for export of milk and milk products from India. These are related with: allocated space per animal, associated to their restricted movement, feed & fodder requirements, water quality, hygienic environment, veterinary treatment & care, vaccination, animal husbandry practices etc., which may not be in accordance with laid down “international standards”.

#### ***6.4.2 A 21- Tolerance limits for residues of or contamination by certain (non - microbiological) substances***

This NTM A210 (Tolerance limits for residues of or contamination by certain (non-microbiological) substances) is a measure that establishes a maximum residue limit (MRL) or tolerance limit of substances such as fertilizers, pesticides, and certain chemicals and metals in food and feed, which are used during their production process but are not their intended ingredients.

Mr. Pawan Agarwal (CEO, FSSAI) stated that the food authority has considered four quality parameters, 12 adulterants and four contaminants and these are antibiotics residues, pesticides residues, Aflatoxin M1 and Ammonium Sulphate. Additionally, the World Health Organization specified that, Aflatoxin M1 (AFM1), a product of Aflatoxin B1 (AFB1) metabolism, can be found in milk in areas of high aflatoxin exposure. Subsequently humans may be exposed to this aflatoxin through milk and milk products,

including breast milk, especially in areas where the poorest quality grain is used for animal feed is very hazardous.

In 2011 a nationwide survey on milk adulteration by Food Safety and Standards Authority of India (FSSAI), 68.4 per cent of the 1,791 total samples lifted from 33 states did not conform to the prescribed standards.

In India due to menace of milk adulteration as well as synthetic milk, detergents as well as urea are used also found to be used inappropriately in dairy business in India, it can cause serious health problems to consumers. The detergent in milk can cause food poisoning and other gastrointestinal complications. Its high alkaline level can also damage body tissue and destroy proteins. A simple test of measuring pH of milk (which is below 7.0; normally around 6.7-6.8) above seven shows adulteration with detergents.

Therefore, this standard is very important to keep the quality of dairy products in international market and play a significant role in exports of dairy products to world. The major potential countries of Middle East North Africa and Southeast Asia region follows the Codex standards (Mapped with FSSAI). The standards to meet with this NTM is given in Annexure II. An exporter can easily meet with this major NTM if he follows quality standards properly.

### ***6.4.3 A31- Labelling requirements***

This NTM A 31 define the information directly related to food safety, which should be provided to the consumer: Labelling is any written, electronic or graphic communication on the consumer packaging or on a separate but associated label.

All dairy products such as milk, cheese, Yoghurt, sour cream, frozen desserts, butter, etc are rich in nutrients. The value of dairy products is in their vitamin and mineral contents like vitamin A, vitamin D, potassium, calcium, magnesium, zinc, and many more. However, to be able to make health claims and inform people about all the benefits of consuming their products, dairy food manufacturers need to follow extremely rigorous food labelling requirements issued and regulated by food safety agencies. The dairy products should be properly manufactured, processed, treated, preserved, graded, packaged and labelled if an exporter wishes to export the dairy products to the potential countries.

The Table 6. 8 depicts the standards of labelling requirements for dairy products and these are:

Table 6. 8 Standards of Labelling Requirements

| S. No. | Standards of Labelling Requirements   |
|--------|---|
| 1      | Name of the food  |
| 2      | List of ingredients   |
|        | 1   Ingredients solely from milk: Class 'Milk solid                                       |
|        | 2   Ingredient of compound ingredient   |
|        | 3   Added water   |
|        | 4   % of ingredient emphasized  |
| 3      | Nutritional information   |
|        | 1   Energy  |
|        | 2   Protein, carbohydrate (sugar), fat  |
|        | 3   Nutrient for which claim is made  |
|        | 4   Trans fat   |
|        | 5   Saturated fat   |
|        | 6   Food claimed to be enriched with nutrients shall give quantity of added nutrients     |
| 4      | Vegetarian and non-vegetarian symbol  |
| 5      | Food additives  |
|        | 1   Specified name or number with functional class title                                  |
|        | 2   Colour and / or flavor  |
| 6      | Name and complete address of manufacturer and manufacturing unit (importer if applicable) |
| 7      | License number  |
| 8      | Net quantity  |
| 9      | Lot/code/batch identification   |
| 10     | Date of manufacture or packing  |
| 11     | Best before and use by date (with storage instructions)                                   |
| 12     | Country of origin of importer food  |
| 13     | Instructions for use  |

Source: Author's Compilation

Under codex food standards the standards for labelling and packaging are given in General standards for the labelling of pre-packaged foods (CX 1-1985) and under FSSAI standards are given under Food Safety and Standards (Packaging and Labelling) Regulation, 2011.

#### 6.4.4 A 82 Testing requirements

This NTMs focuses on the requirement for products to be tested against a given regulation, such as Maximum Residual Limit (MRL): This measure includes the cases where there is sampling requirement. The quality of milk and products tested by taking samples of milk and milk products. The good quality raw milk drives qualitative dairy products. Therefore, milk should be free from debris and sediment, free of off flavours, abnormal colour and odour, low in bacterial count, free from chemicals and has to be normal composition and acidity.



Milk testing and quality control should be carried out at all stages of the dairy chain. Milk can be tested for:

- Quantity – measured in volume or weight;
- Organoleptic characteristics – appearance, taste and smell;
- Compositional characteristics – especially fat, solid and protein contents;
- Physical and chemical characteristics;
- Hygienic characteristics – hygienic conditions, cleanliness and quality;
- Adulteration – with water, preservatives, added solids, etc.
- Drug residues.

Please refer the Milk Testing and Quality Control (volume 2) and FSSAI manual of methods of analysis of milk and milk products 2016 to compete with this NTM.

#### ***6.4.5 A83 Certification requirements***

The certification of conformity with a given regulation that is required by the importing country but may be issued in the exporting or the importing country. These measures is very important because the certification of good quality, proper packaging and labelling, adulteration free, contamination free is vital. The bureau of Indian Standards (the National Standards Body of India) has a certification system for milk products namely Integrated Milk Certification System that helps to identify and control food safety hazards, helps to generate food safety culture and reduce the risks of food safety incidents. This certificate is required by importing countries for the imports of dairy products. Therefore, the NTM certification requirement is very much important for the Indian dairy exporters to export dairy products.

#### ***6.4.6 A84 Inspection requirements***

This NTM is a disclosure requirement of information that allows inspection of the products through the stages of production, processing and distribution. This Requirement for product inspection in the importing country. It may be performed by public or private entities. It is like testing, but it does not include laboratory testing.

The Export Inspection Council (EIC) is the official export –certification body of India which ensures quality and safety of products exported from India. EIC was set up by the Government of India under Section 3 of the Export (Quality Control and Inspection) Act, 1963 to ensure sound development of export trade of India through quality control and inspection and matters connected therewith. The role of EIC is

to ensure that products notified under the Export (Quality Control and Inspection) Act 1963 are meeting the requirements of the importing countries in respect of their quality and safety. This act was enacted in the year 1963 to strengthening the export trade through quality control and pre-shipment inspection. The Act prohibits the export of substandard goods as well as the products which do not fulfil the requirements as laid down under the Act.

#### ***6.4.7 A85 Traceability requirements***

This NTM Disclosure requirement of information that allows following a product through the stages of production, processing and distribution. This requirement gives an insight about the traceability of country of origin, labelling and packaging of dairy products, processing history, handling etc.

This is one big challenge for exporting milk and milk products as traceability issues are cited as NTB for export of milk and dairy products from India as data related to animal - breed, genetics, lineage, milk production, diseases, vaccination, movements etc. may not be properly recorded and available.

Efforts are being made for addressing the traceability issues in India by NDDB as well as cooperatives. The NDDB has developed several programmes for traceability and improving productivity. One such programme is the Information Network for Animal Productivity & Health (INAPH) that facilitates traceability in the dairy sector. Here are some benefits of good traceability system. Determine the origin of a product, ingredient or component.

- Simplify problem-solving in event of defective or contaminated product, ingredient or component.
- Identify issues quickly, contain them, and resolve them.
- Limit losses and lower costs.
- Protect public health and safety.
- Build trust and confidence in products and businesses.
- Verify that the produce is locally grown.
- Improve operating efficiencies of growers, packers, and shippers.

#### ***6.4.8. A89 Conformity assessment related to sanitary and Phytosanitary conditions not elsewhere specified***

This NTM describe about all other conformity assessment related Sanitary and Phytosanitary related NTMs that are not elsewhere specified. An exporter should meet quality and packaging standards properly to meet all SPS measures (including this NTM).

#### ***6.4.9 B82 Testing Requirement***

A requirement for products to be tested against a given regulation, such as performance level includes sampling requirement. For eg. Quality requirements, testing, inspection and certification according to the national specification's standards.

Please refer the Milk Testing and Quality Control (volume 2) and FSSAI manual of methods of analysis of milk and milk products 2016 to compete with this NTM.

#### ***6.4.10 E1 Non-automatic import licensing procedures other than authorization for SPS or TBT reasons***

This NTM E1 is an import-licensing procedure introduced, for reasons other than SPS or TBT reasons, where approval is not granted in all cases. The approval may either be granted on a discretionary basis or may require specific criteria to be met before it is granted.

##### **E11 Licensing for economic reasons**

**E111 Licensing procedure with no specific ex ante criteria-** Licensing procedure where approval is granted at the discretion of the issuing authority: may also be referred to as a discretionary license.

**E112 Licensing for specified use-** Licensing procedure where approval is granted only for imports of products to be used for pre-specified purpose: normally granted for use in operations generating anticipated benefit in important domains of the economy.

**E113 Licensing linked with local production-** Licensing only for imports of products with linkage to local production, including the local production level of the same product, except for such licensing classified as trade- related investment measures.

##### **E119 Licensing for economic reasons, not elsewhere specified.**

##### **E12 Licensing for non-economic reasons**

**E121 Licensing for religious, moral or cultural reasons-** Control of imports by license for religious, moral or cultural reasons.

**E122 Licensing for political reasons-** Control of imports by license for political reasons.

**E129 Licensing for non-economic reasons, not elsewhere specified.**

**E2 Quotas-** Restriction of importation of specified products through the setting of a maximum quantity or value that is authorized for import: No imports are allowed beyond those maximums.

**E21 Permanent-** Quotas of a permanent nature (i.e. they are applied throughout the year, without a known date of termination of the measure) where the importation can take place any time of the year.

**E211 Global allocation-** Permanent quotas where no condition is attached to the country of origin of the product.

**E212 Country allocation-** Permanent quotas where a fixed volume or value of the product must originate in one or more countries.

**E22 Seasonal quotas-** Quotas of a permanent nature (i.e. they are applied every year, without a known date of termination of the measure), where the importation must take place during a given period of the year.

**E221 Global allocation-** Seasonal quotas where no condition is attached to the country of origin of the product.

**E222 Country allocation-** Seasonal quotas where a fixed volume or value of the product must originate in one or more countries.

**E23 Temporary-** Quotas that are applied for on a temporary basis (e.g. they are only applied for one or two years), whether or not they are also seasonal in nature.

**E231 Global allocation-** Temporary quotas where no condition is attached to the country of origin of the product.

**E232 Country allocation-** Temporary quotas where a fixed volume or value of the product must originate in one or more countries.

**E3 Prohibitions other than for SPS and TBT reasons-** Prohibition on the importation of specific products for reasons other than SPS (A1) or TBT (B1) reasons.

**E31 Prohibition for economic reasons**

**E311 Full prohibition (import ban)-** Prohibition without any additional condition or qualification

**E312 Seasonal prohibition-** Prohibition of imports during a given period of the year: This is usually applied to certain agricultural products while the domestic harvest is in abundance.

**E313 Temporary prohibition, including suspension of issuance of licenses-** Prohibition set for a given fixed period of time unrelated to a specific season: usually for urgent matters not covered under the safeguard measures above.

**E314 Prohibition of importation in bulk-** Prohibition of importation in a large-volume container: Importation is only authorized if the product is packed in a small retail container, which increases per unit cost of imports.

**E315 Prohibition of products infringing patents or other intellectual property rights-** Prohibition of copies or imitations of patented or trademarked products.

**E316 Prohibition of used, repaired or remanufactured goods-** Prohibition to import goods that are not new.

**E319 Prohibition for economic reasons, n.e.s.**

**E32 Prohibition for non-economic reasons**

**E321 Prohibition for religious, moral or cultural reasons-** Prohibition of imports for religious, moral or cultural reasons not established in technical regulations.

**E322 Prohibition for political reasons (embargo)-** Prohibition of imports from a country or group of countries, applied for political reasons.

**E329 Prohibition for non-economic reasons, n.e.s.**

**E5 Export-restraint arrangement-** An arrangement by which an exporter agrees to limit exports in order to avoid imposition of restrictions by the importing country, such as quotas, raised tariffs or any other import controls.

**E51 Voluntary export-restraint arrangements (VERs)-** Arrangements made by government or industry of an exporting country to voluntarily limit exports in order to avoid imposition of mandatory restrictions by the importing country.

**E511 Quota agreement-** A VER agreement that establishes export quotas.

**E512 Consultation agreement-** A VER agreement that provides for consultation with a view to introducing restrictions (quotas) under certain circumstances.

**E513 Administrative cooperation agreement-** A VER agreement that provides for administrative cooperation with a view to avoiding disruptions in bilateral trade.

**E59 Export-restraint arrangements, n.e.s.**

**E6 Tariff-rate quotas (TRQ)-** A system of multiple tariff rates applicable to a same product: The lower rates apply up to a certain value or volume of imports, and the higher rates are charged on imports which exceed this amount.

**E61 WTO-bound TRQs, included in WTO schedules (concessions and commitments under WTO negotiations)**

**E611 Global allocation-** WTO-bound TRQs where no condition is attached to the country of origin of the product.

**E612 Country allocation-** WTO-bound TRQs where a fixed volume or value of the product must originate in one or more countries.

**E62 Other TRQs included in other trade agreements.**

**E621 Global allocation-** Non-WTO TRQs where no condition is attached to the country of origin of the product.

**E622 Country allocation-** Non-WTO bound TRQs where a fixed volume or value of the product must originate in one or more countries.

**E9 Quantity control measures, n.e.s.**

## 6.5 Major Non-Tariff Measures implied by potential countries to the import of dairy Products (Country Specific)

In this analysis the major Non-Tariff Measures are investigated for each potential country. This exercise is beneficial for dairy exporters to identify unique or major NTMs those are imposed by potential countries on dairy products. This simply imply that the exporter has to deal with the specific major NTM to export a specific product to a specific country.

### 6.5.1 Major country specific Non-Tariff Measures implied by potential countries to the Import of for Butter

Table 6. 9, Table 6. 10, and Table 6. 11 depicts the NTMs that are imposed by potential countries to restrict the imports of butter. Therefore, Indian exporters should meet with NTMs to export specific product to a specific country.

*Table 6. 9 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040510*

| Countries                        | Major NTMs   |
|----------------------------------|--|
| Tajikistan                       | A83, A84   |
| Lao People's Democratic Republic | A14, A31, A81, A82, A83, A84, B31, B81, B82, B83, C3, F71  |
| Jordan                           | A83, A84, A86, B11, B7, E312   |
| Israel                           | A14, A22, A31, A33, A82, A84, A9, C3, E22  |
| China                            | A11, A12, A14, A19, A21, A31, A33, A63, A82, A83, A84, A851, A852, A86, A89, B21, B22, B31, B32, B33, B42, B49, B6, B82, B83, B84, B851, B853, B89, E1 |
| Brunei Darussalam                | A13, A14, A21, A22, A31, A41, A59, A81, A82, A83, A84, B31, B7, B83, B84, C3, E1   |
| Cyprus                           | A31, A85   |
| Russian Federation               | A13, A14, A21, A22, A31, A32, A33, A41, A42, A49, A62, A63, A64, A81, A82, A83, A85, A89, B31, B7, C3  |

| Countries      | Major NTMs  |
|----------------|---|
| Croatia        | A31, A85  |
| Slovenia       | A31, A85  |
| Latvia         | A31, A85  |
| Hungary        | A31, A85  |
| Japan          | A21, A22, A31, A41, A42, A69, A85, A859, B21, B31, B33, B7, H11   |
| Malawi         | A7  |
| Czech Republic | A31, A85  |
| Indonesia      | A14, A15, A21, A31, A33, A42, A59, A63, A69, A82, A83, A84, A859, A89, B31, B33, B6, B7, B82, B83, C3, E1 |
| Bulgaria       | A31, A85  |
| Estonia        | A31, A85  |
| Algeria        | A13, A19, A21, A22, A31, A32, A33, A41, A42, A63, A64, A8, A82, A83, A84, B31, B33, B6, C4, E311          |
| Tunisia        | A31, A33, A82, A83, A84, A851, A852, A853, A89, B31, B6, C1   |
| Benin          | A14, A21, A81, A82, A83, A84, A852, A853, A89, C4, I1   |
| Malta          | A31, A85  |
| Burkina Faso   | A13, A83  |
| Cameroon       | A14, A19, A31, A83, A84, A31, B83, B84  |
| Togo           | B31, B33, B84, E1   |
| Niger          | A82, A83, A84   |
| Sierra Leone   | A82, A83, A84   |
| Mali           | A14, A31, A33, A42, A64, A83, A84, A9   |

Source: Author's Compilation based on Market Access Map, [www.macmap.org](http://www.macmap.org)

Table 6. 10 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040520

| Countries                        | Major NTMs  |
|----------------------------------|---|
| Qatar                            | A13, A14, A15, A21, A31, A33, A41, A42, A63, A81, A82, A83, B31, B7                                       |
| Oman                             | A11, A14, A15, A81, A82, A83, A84, G32  |
| Hong Kong, China                 | A15, A21, A22, A31, A853, B31   |
| Egypt                            | A14, A15, A21, A22, A31, A83, A84, B31, B6, B7  |
| Indonesia                        | A14, A15, A21, A31, A33, A42, A59, A63, A69, A82, A83, A84, A859, A89, B31, B33, B6, B7, B82, B83, C3, E1 |
| Lao People's Democratic Republic | A14, A31, A81, A82, A83, A84, B31, B81, B82, B83, C3, F71   |
| Brunei Darussalam                | A13, A14, A21, A22, A31, A41, A59, A81, A82, A83, A84, B31, B83, B84, C3, E1                              |
| Kazakhstan                       | A13, A21, A22, A31, A32, A33, A41, A42, A49, A62, A63, A64, A81, A82, A83, A85, A89, B31, B7, F71         |
| Malta                            | A31, A85, E1, G11   |

| Countries                | Major NTMs  |
|--------------------------|---|
| Viet Nam                 | A21 , A22 , A31 , A33 , A41 , A63 , A81 , A82 , A83 , A84 , A851 , A89 , B31 , B42 , B49 , B81 , E1   |
| China                    | A11 , A12 , A14 , A19 , A21 , A31 , A33 , A63 , A82 , A83 , A84 , A851 , A852 , A86 , A89 , B21 , B22 , B31 , B32 , B33 , B42 , B49 , B6 , B82 , B83 , B84 , B851 , B853 , B89 , E1 |
| United States of America | A12 , A14 , A15 , A19 , A21 , A22 , A31 , A32 , A33 , A41 , A42 , A51 , A53 , A63 , A64 , A69 , A82 , A83 , A84 , A851 , B31 , B33 , B6 , B7 , B8 , B82 , B84 , C3 , C9 , E611      |
| Tajikistan               | A83 , A84   |
| Pakistan                 | A31 , A82 , A83 , A84 , A86 , C9  |
| Jordan                   | A83 , A84 , A86 , B7  |
| Estonia                  | A31 , A85 , E1 , G11  |
| Sri Lanka                | A14 , A15 , A22 , A31 , A4 , A49 , A83 , A84 , B14 , B15 , B31 , B4 , B83 , B84 , C9  |
| Latvia                   | A31 , A85 , E1 , G11  |
| Peru                     | A14 , A21 , A42 , A49 , A51 , A59 , A81 , A82 , A83 , A84 , A86 , A9 , B31 , B33 , B82 , B83 , B84  |
| Mexico                   | A14 , A21 , A22 , A31 , A33 , A51 , A82 , A83 , A84 , A89 , A9 , B31 , B81 , B83 , B84 , B9 , C3  |
| Cyprus                   | A31 , A85 , E1 , G11  |
| Czech Republic           | A31 , A85 , E1 , G11  |
| Bolivia,                 | A11 , A14 , A49 , A81 , A82 , A83 , B31 , B33 , B83 , E1  |
| Israel                   | A14 , A22 , A31 , A33 , A82 , A84 , A9 , C3 , E22   |

Source: Author's Compilation based on Market Access Map, www.macmap.org

Table 6. 11 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040590

| Countries           | Major NTMs         |
|---------------------|--------------------|
| Mauritania          | A52                |
| Namibia             | D42, D52, D6, E25- |
| Antigua and Barbuda | A32, B32           |
| Switzerland         | B85                |
| Barbados            | B11                |
| Ethiopia            | B11                |

Source: Author's Compilation based on Market Access Map, www.macmap.org

### 6.5.2 Major Non-Tariff Measures implied by potential countries to the import of for SMP

The Table 6. 12 depicts the NTMs that are imposed by potential countries to restrict the imports of SMP. Therefore, Indian exporters should meet with NTMs to export a specific product to a specific country.

Table 6. 12 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040210

| Country                          | Product Code 040210  |
|----------------------------------|--|
| Brunei Darussalam                | A13, A14, A21, A22, A31, A41, A59, A81, A82, A83, A84, B31, B7, B83, B84, C3, E1 |
| Lao People's Democratic Republic | A14, A31, A81, A82, A83, A84, B31, B81, B82, B83, C3, F71                        |
| Greece                           | A31 ,A85   |
| Antigua and Barbuda              | A32 ,B32   |



| Country                               | Product Code 040210   |
|---------------------------------------|---|
| Italy                                 | A31 ,A85  |
| China                                 | A11, A12, A14, A15, A19, A21, A31, A33, A49, A63, A81, A82, A83, A84, A851, A852, A86, A89, B21, B22, B31, B32, B33, B42, B49, B6, B81, B82, B83, B84, B851, B852, B853, B89, B9, C4, E1, O |
| Cyprus                                | A31 A85   |
| Viet Nam                              | A21, A22, A31, A33, A41, A63, A64, A81, A82, A83, A84, A851, A89, B31, B42, B49, B7, B81, E1  |
| Malta                                 | A31 ,A85  |
| Luxembourg                            | A31 ,A85  |
| Bolivia,<br>Plurinational State<br>of | A11, A14, A49, A81, A82, A83, B31, B33, B83, E1   |
| Bulgaria                              | A31 ,A85  |
| Peru                                  | A14, A21, A31, A33, A41, A49, A51, A59, A64, A82, A83, A84, A86, A9, B31, B33, B7, B82, B83, B84  |
| Mexico                                | A13, A14, A21, A22, A31, A33, A42, A51, A82, A83, A84, A89, A9, B31, B33, B41, B6, B7, B81, B82, B83, B84, B9, C3, E111, E6   |
| Dominica                              | A42, A49, B31, B7   |
| Brazil                                | A13, A14, A15, A22, A31, A33, A41, A82, A83, A84, A851, B31, B32, B33, B7, B82, B83, B84, E1  |
| Senegal                               | A14, A31, A82, A83, A84   |
| Grenada                               | A31, B31, B83, B84, B9  |
| Paraguay                              | A14, A81, B31, E1   |

Source: Author's Compilation based on Market Access Map, [www.macmap.org](http://www.macmap.org)

### 6.5.3 Major Non-Tariff Measures implied by potential countries to the import of for Cheese

The following tables depicts the NTMs that are imposed by potential countries to restrict the imports of cheese. Therefore, Indian exporters should meet with NTMs to export specific product to a specific country.

Table 6. 13 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040610

| Countries | Major NTMs                               |
|-----------|--|
| Indonesia | A89, B19, B82, H11                       |
| Lebanon   | C1                                       |
| China     | A12, A89, B22, B32, B49, B82, B851, B853 |

Source: Author's Compilation based on Market Access Map, [www.macmap.org](http://www.macmap.org)

*Table 6. 14 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040620*

| Countries         | Major NTMs   |
|-------------------|--|
| Oman              | A11, G32   |
| Bahrain           | A19  |
| Brunei Darussalam | E1   |
| Philippines       | B21, B42, B89, E1, E231, E32   |
| Kuwait            | E321   |
| Lebanon           | A19, C1  |
| Indonesia         | A859, A89, B33, B82, E1  |
| China             | A11, A12, A19, A89, B21, B22, B32, B33, B42, B49, B82, B851, B853, B89, E1 |
| Tajikistan        | A83 ,A84   |
| Australia         | A19, A85, A859, F73, F79   |
| Greece            | A31, A85   |
| Germany           | A31, A85   |
| Finland           | A31, A85   |
| Bulgaria          | A31, A85   |

*Source: Author's Compilation based on Market Access Map, www.macmap.org*

*Table 6. 15 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040630*

| Countries                        | Major NTMs  |
|----------------------------------|---|
| Indonesia                        | A859, A89, E1                                     |
| Philippines                      | B21, B42, E1, E231, E32                           |
| Brunei Darussalam                | E1  |
| Lebanon                          | C1  |
| Lao People's Democratic Republic | B81, F71  |
| Kazakhstan                       | A89, F71  |
| China                            | A12, A89, B21, B22, B32, B42, B49, B851, B853, E1 |
| Viet Nam                         | A89, B42, B49, B81, E1                            |
| Namibia                          | A7, D42, D52, D6, E25                             |

*Source: Author's Compilation based on Market Access Map, www.macmap.org*

*Table 6. 16 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code 040640*

| Countries                        | Major NTMs  |
|----------------------------------|---|
| United Arab Emirates             | A13, A14, A21, A22, A31, A32, A33, A41, A42, A49, A51, A59, A62, A63, A64, A69, A81, A82, A83, A84, A851, A852, A853, A86, B31, C3, C4, C9        |
| Kazakhstan                       | A13, A21, A22, A31, A32, A33, A41, A42, A49, A62, A63, A64, A81, A82, A83, A85, A89, B31, B7, F71   |
| Malaysia                         | A14, A22, A31, A33, A64, B31  |
| Russian Federation               | A13, A14, A21, A22, A31, A32, A33, A41, A42, A49, A62, A63, A64, A81, A82, A83, A85, A89, B31, B7, C3   |
| Singapore                        | A14, A15, A21, A22, A31, A32, A41, A63, A81, A83, A84, B31, B6, B7  |
| Qatar                            | A13, A14, A15, A21, A31, A33, A41, A42, A63, A81, A82, A83, B31, B7   |
| Oman                             | A11, A14, A15, A81, A82, A83, A84, G32  |
| Hong Kong, China                 | A15, A21, A22, A31, A853, B31, B6   |
| Sri Lanka                        | A14, A15, A22, A31, A4, A49, A83, A84, B14, B15, B31, B4, B83, B84, C9  |
| Jordan                           | A83, A84, A86, B7   |
| Lao People's Democratic Republic | A14, A31, A81, A82, A83, A84, B31, B81, B82, B83, C3, F71   |
| Brunei Darussalam                | A13, A14, A21, A22, A31, A41, A59, A81, A82, A83, A84, B31, B83, B84, C3, E1  |
| Indonesia                        | A14, A15, A31, A33, A42, A82, A83, A84, A859, B31, B33, B7, B83, C3, E1   |
| Malta                            | A31, A85  |
| Viet Nam                         | A21, A22, A31, A33, A41, A63, A81, A82, A83, A84, A851, A89, B31, B42, B49, B81, E1   |
| China                            | A11, A12, A14, A19, A21, A31, A33, A82, A83, A84, A851, A852, A86, A89, B21, B22, B31, B32, B33, B42, B49, B6, B82, B83, B84, B851, B853, B89, E1 |
| Israel                           | A14, A22, A31, A33, A82, A84, A9, C3  |
| Czech Republic                   | A31, A85  |
| Tajikistan                       | A83, A84  |
| Pakistan                         | A31, A82, A83, A84, A86, C9   |
| Slovenia                         | A31, A85  |
| Bulgaria                         | A31, A85  |
| Namibia                          | A7, D42, D52, D6, E25   |
| Bangladesh                       | A11, A13, A14, A15, A19, A21, A22, A31, A33, A41, A42, A49, A64, A69, A82, A83, A84, B15, B31, B7, B852, E315                                     |
| Barbados                         | B11, B84  |
| Hungary                          | A31, A85  |

*Source: Author's Compilation based on Market Access Map, [www.macmap.org](http://www.macmap.org)*

*Table 6. 17 Major Non-Tariff Measures implied by potential countries to the import of for the Product Code040690*

| Countries                        | Major NTMs             |
|----------------------------------|------------------------|
| Russian Federation               | A89                    |
| Brunei Darussalam                | E1                     |
| Lao People's Democratic Republic | B81, F71               |
| Viet Nam                         | A89, B42, B49, B81, E1 |
| Israel                           | A9                     |
| Namibia                          | A7, D42, D52, D6, E25  |
| Barbados                         | B11                    |
| Tunisia                          | A89, F71, G11          |
| Antigua and Barbuda              | B32                    |
| Mauritania                       | A52                    |
| Algeria                          | A8, E311               |

*Source: Author's Compilation based on Market Access Map, www.macmap.org*

Annexure III provides the list major NTMs that are imposed by potential countries to restrict the imports of other dairy product categories like WMP, Bulk and Pack Milk, Whey Powder, Cream, Buttermilk, Condensed Milk, Yoghurt, Infant Milk, Casein, Caseinates, Lactose Pharmaceuticals.

## **6.6 Classification of Markets based on Non-Tariff Measures**

As mentioned in chapter 5, it has been observed that countries with high trade score and low NTM barriers are the ideal countries to expand and export dairy products. However, it has to be noted that these set of countries also has low market share. Therefore, to identify potential markets we also considered the markets which has high trade score and high NTM barriers.

We analysed the market share of these countries for respective dairy products and checked the NTM barriers. NTM barriers are checked based on the assumptions that if India is meeting a certain kind of NTM barrier and already exporting to another country with similar NTM barrier then it has potential to meet those barriers in the potential/untouched markets across newer countries. On the basis of this assumption we have segregated the markets based on the number of unique barrier India has to go through while exporting other than which it is already meeting in the existing markets.

### 6.6.1 Butter & Ghee

Butter has three codes; 040510, 040520 and 040590. 040510 is Butter (excluding dehydrated butter and ghee), 040520 is dairy spreads of a fat content, by weight, of  $\geq 39\%$  but  $< 80\%$  and 040590 is Fats and oils derived from milk, and dehydrated butter and ghee (excluding natural butter, recombined butter and whey butter). Table 6.18, 6.19 and 6.20 shows countries having high trade score and high NTM score for butter (040510), butter (040520) and butter (040590) respectively. Table represents total import and NTM frequency. China has 48% market share and to export in this market India must meet 30 unique NTM barriers. Likewise, Russia has 34% market share and 21 unique NTM barriers, Japan has 8% market share and 13 unique NTM barriers, Qatar has 37% market share and 14 unique NTM barriers, USA has 19% market share and 30 unique NTM barriers, Oman has 15% market share and 8 unique NTM barriers.

Table 6. 18 Butter (040510) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Butter (040510)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China  | 525029                         | 48%   | 30                          |
| Russian Federation   | 374350                         | 34%   | 21                          |
| Japan  | 91596                          | 8%  | 13                          |
| Hungary  | 33099                          | 3%  | 2                           |
| Latvia   | 19352                          | 2%  | 2                           |
| Croatia  | 14430                          | 1%  | 2                           |
| Israel   | 13005                          | 1%  | 9                           |
| Slovenia   | 11830                          | 1%  | 2                           |
| Jordan   | 11005                          | 1%  | 6                           |
| Cyprus   | 8434                           | 1%  | 2                           |
| Brunei Darussalam  | 2289                           | 0%  | 17                          |
| Laos   | 309                            | 0%  | 12                          |
| Total  | 1104728                        | 1   | 118                         |

Source: Author's Analysis

Table 6. 19 Butter (040520) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Butter (040520)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Qatar  | 8966                           | 37%   | 14                          |
| USA  | 4701                           | 19%   | 30                          |
| Oman   | 3673                           | 15%   | 8                           |
| Kazakhstan   | 3283                           | 13%   | 20                          |
| Egypt  | 1907                           | 8%  | 10                          |
| Viet Nam   | 901                            | 4%  | 17                          |
| Lao  | 390                            | 2%  | 12                          |
| Indonesia  | 369                            | 2%  | 22                          |
| Malta  | 126                            | 1%  | 4                           |
| Tajikistan   | 77                             | 0%  | 2                           |
| Hong Kong  | 14                             | 0%  | 6                           |
| China  | 13                             | 0%  | 30                          |
| Brunei Darussalam  | 8                              | 0.000327493                                   | 16                          |
| Total  | 24428                          | 1   | 191                         |

Source: Author's Analysis

Table 6. 20 Butter (040590) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Ghee (040590)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Mexico   | 156928                         | 73%   | No Unique                   |
| Poland   | 43249                          | 20%   | No Unique                   |
| Bulgaria   | 11494                          | 5%  | No Unique                   |
| Namibia  | 1537                           | 1%  | 4                           |
| Latvia   | 1138                           | 1%  | No Unique                   |
| Laos   | 95                             | 0%  | No Unique                   |
| Malta  | 92                             | 0%  | No Unique                   |
| Tunisia  | 91                             | 0%  | No Unique                   |
| Estonia  | 29                             | 0%  | No Unique                   |
| Antigua and Barbuda  | 19                             | 0%  | 2                           |
| Mauritania   | 2                              | 0%  | 1                           |
| Total  | 214674                         | 100%  |                             |

Source: Author's Analysis

### 6.6.2 SMP

The ideal country to expand and export SMP (040210) is China. Table 6.21 represents total import and NTM frequency. It shows that China has 75% market share and to export in this market India must meet 38 unique NTM barriers.

Table 6. 21 SMP (040210) Potential Countries

| High Trade Score-High NTM Score Countries-SMP (040210) |                         |  |                      |
|--|-------------------------|--|----------------------|
| Countries  | Total Import (USD '000) | Market share among potential countries | Unique NTM Frequency |
| China  | 609118                  | 75%                                    | 38                   |
| Italy  | 178206                  | 22%                                    | 2                    |
| Greece   | 18408                   | 2%                                     | 2                    |
| Cyprus   | 1174                    | 0%                                     | 2                    |
| Brunei Darussalam                                      | 1078                    | 0%                                     | 17                   |
| Lao  | 185                     | 0%                                     | 12                   |
| Antigua and Barbuda                                    | 123                     | 0%                                     | 2                    |
| Total  | 808292                  | 100%                                   | 75                   |

Source: Author's Analysis

### 6.6.3 Cheese

Cheese has five codes: 040610, 040620, 040630, 040640 and 040690. 040610 is Fresh cheese "unripened or uncured cheese", incl. whey cheese, and curd. 040620 is Grated or powdered cheese, of all kinds. 040630 is Processed cheese, not grated or powdered. 040640 is Blue-veined cheese and other cheese containing veins produced by "*Penicillium roqueforti*" and 040690 is Cheese (excluding fresh cheese, incl. whey cheese, curd, processed cheese, blue-veined cheese and other cheese containing veins produced by "*Penicilliumroqueforti*", and grated or powdered cheese). Table 6.22, 6.23, 6.24, 6.25 and 6.26 shows countries having high trade score and high NTM score for Cheese (040620), Cheese (040620), Cheese (040630), Cheese (040640) and Cheese (040690) respectively. Table represents total import and NTM frequency. The ideal countries to export cheese are China, Russia, Indonesia, Israel, Vietnam, and Kuwait. As China has 63% market share and to export in this market India must meet 8 unique barriers. Likewise, Russia has 69% market share and 21 unique barriers, Indonesia has 12% market share and 4 unique NTM

barriers, Israel has 6% market share and 8 unique NTM barriers, Vietnam has 0.26% market share and 17 unique NTM barriers and Kuwait has 8% market share and 1 unique NTM barrier.

*Table 6. 22 Cheese (040610) Potential Countries*

| <b>High Trade Score-High NTM Score Countries-Cheese (040610)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China  | 174937                         | 63%   | 8                           |
| Greece   | 67534                          | 24%   | No Unique                   |
| Indonesia  | 33434                          | 12%   | 4                           |
| Pakistan   | 3457                           | 1%  | No Unique                   |
| Lebanon  | 221                            | 0%  | 1                           |
| Tajikistan   | 210                            | 0%  | No Unique                   |
| Total  | 279793                         | 100%  |                             |

*Source: Author's Analysis*

*Table 6. 23 Cheese (040620) Potential Countries*

| <b>High Trade Score-High NTM Score Countries-Cheese (040620)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China  | 135135                         | 49%   | 15                          |
| Lebanon  | 36475                          | 13%   | 2                           |
| Malaysia   | 25020                          | 9%  | No Unique                   |
| Indonesia  | 24951                          | 9%  | 5                           |
| Kuwait   | 20773                          | 8%  | 1                           |
| Philippines  | 11169                          | 4%  | 6                           |
| Oman   | 7196                           | 3%  | 2                           |
| Egypt  | 5679                           | 2%  | No Unique                   |
| Qatar  | 5100                           | 2%  | No Unique                   |
| Bahrain  | 4342                           | 2%  | 1                           |
| Brunei Darussalam  | 66                             | 0%  | 1                           |
| Total  | 275906                         | 100%  |                             |

*Source: Author's Analysis*



Table 6. 24 Cheese (040630) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Cheese (040630)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China  | 79248                          | 30%   | 10                          |
| Lebanon  | 78452                          | 30%   | 1                           |
| Jordan   | 24478                          | 9%  | No Unique                   |
| Greece   | 21761                          | 8%  | No Unique                   |
| Indonesia  | 17614                          | 7%  | 3                           |
| Philippines  | 14479                          | 5%  | 5                           |
| Kazakhstan   | 14271                          | 5%  | 2                           |
| Viet Nam   | 9012                           | 3%  | 5                           |
| Pakistan   | 4353                           | 2%  | No Unique                   |
| Brunei Darussalam  | 947                            | 0%  | 1                           |
| Tajikistan   | 321                            | 0%  | No Unique                   |
| Laos   | 26                             | 0%  | 2                           |
| Total  | 264962                         | 100%  |                             |

Source: Author's Analysis

Table 6. 25 Cheese (040640) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Cheese (040640)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Russian Federation   | 17824                          | 69%   | 21                          |
| China  | 2147                           | 8%  | 29                          |
| Israel   | 1475                           | 6%  | 8                           |
| United Arab Emirates   | 1274                           | 5%  | 28                          |
| Malta  | 1039                           | 4%  | 2                           |
| Qatar  | 748                            | 3%  | 14                          |
| Singapore  | 352                            | 1%  | 14                          |
| Kazakhstan   | 232                            | 1%  | 20                          |
| Indonesia  | 183                            | 1%  | 15                          |
| Oman   | 176                            | 1%  | 8                           |
| Malaysia   | 123                            | 0%  | 6                           |
| Sri Lanka  | 103                            | 0%  | 15                          |
| Viet Nam   | 66                             | 0%  | 17                          |
| Papua New Guinea   | 31                             | 0%  | No Unique                   |
| Jordan   | 30                             | 0%  | 4                           |
| Laoos  | 5                              | 0%  | 12                          |
| Hong Kong  | 1                              | 0%  | 7                           |

Source: Author's Analysis

Table 6. 26 Cheese (040690) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Cheese (040690)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Russian Federation   | 734870                         | 85%   | 1                           |
| Israel   | 49862                          | 6%  | 1                           |
| Viet Nam   | 27227                          | 3%  | 5                           |
| Malta  | 22459                          | 3%  | No Unique                   |
| Namibia  | 12342                          | 1%  | 5                           |
| Barbados   | 11681                          | 1%  | 1                           |
| Brunei Darussalam  | 4167                           | 0%  | 1                           |
| Laos   | 998                            | 0%  | 2                           |
| Tajikistan   | 220                            | 0%  | No Unique                   |
| Total  | 863826                         | 100%  |                             |

Source: Author's Analysis

#### 6.6.4 WMP

WMP has two codes: 040221 and 040229. 040221 is Milk and cream, concentrated or containing added sugar or other sweetening matter: In powder, granules or other solid forms, of a fat content, by weight, exceeding 1,5 %: Not containing added sugar or other sweetening matter. 040229 is Milk and cream, concentrated or containing added sugar or other sweetening matter: In powder, granules or other solid forms, of a fat content, by weight, exceeding 1,5 % Other. Table 6.27 and 6.28 shows countries having high trade score and high NTM score. Table represents total import and NTM frequency. The potential countries to export WMP are China, Saudi Arabia, Indonesia, Kuwait, Egypt, Russia. China has 67% market share and to export in this market India must meet 26 unique NTM barriers. Likewise, Saudi Arabia has 11% market share and 15 unique NTM barriers, Indonesia has 7% market share and 16 unique NTM barriers, Kuwait has 4% market share and 12 unique NTM barriers, Egypt has 4% market share and 4 unique NTM barriers, Russia has 3% market share and 9 unique NTM barriers.

Table 6. 27 WMP (040221) Potential Countries

| <b>High Trade Score-High NTM Score Countries-WMP (040221)</b> |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
| <b>Countries</b>  | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China   | 1746636                        | 67%   | 26                          |
| Saudi Arabia  | 275248                         | 11%   | 15                          |
| Indonesia   | 172063                         | 7%  | 16                          |
| Kuwait  | 97767                          | 4%  | 12                          |
| Egypt   | 95051                          | 4%  | 4                           |
| Russian Federation  | 75734                          | 3%  | 9                           |
| Lebanon   | 70583                          | 3%  | 11                          |
| Philippines   | 58833                          | 2%  | 9                           |
| Bahrain   | 10754                          | 0%  | 9                           |
| Kazakhstan  | 7495                           | 0%  | 8                           |
| Brunei Darussalam   | 5157                           | 0%  | 10                          |
| Laos  | 2319                           | 0%  | 9                           |
| Kyrgyzstan  | 6                              | 0%  | 8                           |
| Total   | 2617646                        | 100%  | 146                         |

Source: Author's Analysis

Table 6. 28 WMP (040229) Potential Countries

| <b>High Trade Score-High NTM Score Countries-WMP (040229)</b> |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
| <b>Countries</b>  | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China   | 72710                          | 89%   | 16                          |
| Lebanon   | 3459                           | 4%  | 3                           |
| Russian Federation  | 2661                           | 3%  | 3                           |
| Viet Nam  | 693                            | 1%  | 5                           |
| Bahrain   | 646                            | 1%  | 2                           |
| Laos  | 478                            | 1%  | 3                           |
| Estonia   | 404                            | 0%  | 1                           |
| Kazakhstan  | 397                            | 0%  | 4                           |
| Kyrgyzstan  | 46                             | 0%  | 4                           |
| Total   | 81494                          | 100%  | 41                          |

Source: Author's Analysis

### 6.6.5 Bulk and Pack Milk

Bulk and Pack milk is represented by two codes; 040110 and 040120. We have analysed both the codes separately. 040110 is Milk and cream of a fat content by weight of less than 1% not concentrated nor containing added sugar and 040120 is Milk and cream of a fat content by weight of more than 1% and less than 6% not concentrated nor containing added sugar. Table 6.29 and 6.30 shows countries having high trade score and high NTM score for bulk and pack milk (040110) and bulk and pack milk (040120). Table represents total import and NTM frequency. The potential countries to export bulk and pack milk are China, Oman, Russia. For bulk and pack milk (040110), China has 65% market share and to export bulk and pack milk in this market India must meet 10 unique NTM barriers. Likewise, Oman has 27% market share and 2 unique NTM barriers, Russia has 4% market share and 2 unique NTM barriers. For bulk and pack milk (040120), China has 25% market share and to export bulk and pack milk in this market India must meet 5 unique NTM barriers, Russia has 7% market share and 1 unique NTM barrier while Oman has 1% market share and 9 unique NTM barriers

*Table 6. 29 Bulk and Pack Milk (040110) Potential Countries*

| <b>High Trade Score-High NTM Score Countries-Bulk and Pack Milk (040110)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China  | 57805                          | 65%   | 10                          |
| Oman   | 23756                          | 27%   | 2                           |
| Russian Federation   | 4006                           | 4%  | 2                           |
| Malta  | 1623                           | 2%  | 1                           |
| Brunei Darussalam  | 1358                           | 2%  | 1                           |
| Viet Nam   | 923                            | 1%  | 4                           |
| Cyprus   | 118                            | 0%  | 1                           |
| Total  | 89589                          | 100%  | 21                          |

*Source: Author's Analysis*

Table 6. 30 Bulk and Pack Milk (040120)

| <b>High Trade Score-High NTM Score Countries-Bulk and Pack Milk (040120)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Germany  | 1008414                        | 60%   | No Unique                   |
| China  | 421165                         | 25%   | 5                           |
| Russian Federation   | 117925                         | 7%  | 1                           |
| Greece   | 64843                          | 4%  | No Unique                   |
| Bulgaria   | 26837                          | 2%  | 1                           |
| Viet Nam   | 17311                          | 1%  | No Unique                   |
| Oman   | 14385                          | 1%  | 9                           |
| Cyprus   | 5932                           | 0%  | 3                           |
| Finland  | 5237                           | 0%  | Np Unique                   |
| Malta  | 2737                           | 0%  | No Unique                   |
| Saudi Arabia   | 1327                           | 0%  | 4                           |
| Jordan   | 1289                           | 0%  | 1                           |
| Brunei Darussalam  | 1119                           | 0%  | No Unique                   |
| Lao People's Democratic Republic   | 625                            | 0%  | 1                           |
| Total  | 1689146                        | 100%  |                             |

Source: Author's Analysis

### 6.6.6 Whey Powder

Whey powder has two codes: 040410 and 040490. 040410 is whey and modified whey, whether or not concentrated or containing added sugar or other sweetening matter. 040490 is products consisting of natural milk constituents, whether or not sweetened, n.e.s. Table 6.31 and 6.32 shows countries having high trade score and high NTM score for whey powder (040410) and whey powder (040490). Table represents total import and NTM frequency. The potential countries for whey powder are China, Indonesia, Egypt, Saudi Arabia. For whey powder (040410), China has 67% market share and to export whey powder in this market India must meet 10 unique NTM barriers. Likewise, Indonesia has 17% market share and 1 unique NTM barrier, Egypt has 2% market share and Saudi Arabia has 1% market share and 4 unique NTM barriers. For whey powder (040490), China has 14% market share and to export whey powder in this market India must meet 14 unique NTM barriers. Similarly, Indonesia has 1% market share and 3 unique NTM barriers, Egypt has 59% market share and Saudi Arabia has 12% market share and 2 unique NTM barriers.

Table 6. 31 Whey Powder (040410) Potential Countries

| High Trade Score-High NTM Score Countries-Whey Powder (040410) |                         |  |                      |
|--|-------------------------|--|----------------------|
| Countries  | Total Import (USD '000) | Market share among potential countries | Unique NTM Frequency |
| China  | 622146                  | 67%                                    | 10                   |
| Indonesia  | 153436                  | 17%                                    | 1                    |
| United Kingdom   | 86902                   | 9%                                     | No unique            |
| Russian Federation   | 34109                   | 4%                                     | No unique            |
| Egypt  | 16407                   | 2%                                     | No unique            |
| Saudi Arabia   | 7053                    | 1%                                     | 4                    |
| Kazakhstan   | 5801                    | 1%                                     | 1                    |
| Cyprus   | 1495                    | 0%                                     | 2                    |
| Slovenia   | 975                     | 0%                                     | No unique            |
| Malta  | 90                      | 0%                                     | 2                    |
| Brunei Darussalam  | 3                       | 0%                                     | No unique            |
| Total  | 928417                  | 100%                                   |                      |

Source: Author's Analysis

Table 6. 32 Whey Powder (040490) Potential Countries

| High Trade Score-High NTM Score Countries-Whey Powder (040490) |                         |  |                      |
|--|-------------------------|--|----------------------|
| Countries  | Total Import (USD '000) | Market share among potential countries | Unique NTM Frequency |
| Egypt  | 48205                   | 59%                                    | No Unique            |
| China  | 11176                   | 14%                                    | 14                   |
| Saudi Arabia   | 9918                    | 12%                                    | 2                    |
| Russian Federation   | 5082                    | 6%                                     | 2                    |
| Vietnam  | 2755                    | 3%                                     | 5                    |
| Kazakhstan   | 2492                    | 3%                                     | 3                    |
| Brunei Darussalam  | 1405                    | 2%                                     | 2                    |
| Indonesia  | 1146                    | 1%                                     | 3                    |
| Lebanon  | 164                     | 0%                                     | 2                    |
| Total  | 82343                   | 100%                                   |                      |

Source: Author's Analysis

### 6.6.7 Cream

Cream has 3 product codes; 040130, 040140 and 040150. 040130 is Milk and cream of a fat content by weight of > 6%, not concentrated nor containing added sugar, 040140 is Milk and cream of a fat content by weight of > 6% but <= 10%, not concentrated nor containing and 040150 is Milk and cream of a fat content by weight of > 10%, not concentrated nor containing added sugar. Table 6.33 and 6.34 shows countries having high trade score and high NTM score for Cream (040140) and Cream (040150). Table represents total import and NTM frequency. The potential countries to export cream are Kuwait, Hong Kong, Malaysia, UAE, Bahrain, Saudi Arabia. Kuwait has 23% market share and to export cream in this market India has to meet 12 unique NTM barriers. Likewise, Hong Kong has 21% market share and 6 unique NTM barriers, Malaysia has 14% market share and 2 unique NTM barriers, UAE has 13% market share and 18 unique NTM barriers, Bahrain has 11% market share and 10 unique NTM barriers. Lastly, Saudi Arabia has 9% market share and 17 unique NTM barriers.

Table 6. 33 Cream (040140) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Cream (040140)</b> |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
| <b>Countries</b>  | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Kuwait  | 11489                          | 23%   | 12                          |
| Hong Kong, China  | 10651                          | 21%   | 6                           |
| Malaysia  | 7233                           | 14%   | 2                           |
| UAE   | 6684                           | 13%   | 18                          |
| Bahrain   | 5411                           | 11%   | 10                          |
| Saudi Arabia  | 4707                           | 9%  | 17                          |
| Laos  | 1090                           | 2%  | 6                           |
| Kazakhstan  | 990                            | 2%  | 12                          |
| Kyrgyzstan  | 757                            | 1%  | 12                          |
| Philippines   | 658                            | 1%  | 10                          |
| Brunei Darussalam   | 509                            | 1%  | 11                          |
| Qatar   | 210                            | 0%  | 7                           |
| China   | 188                            | 0%  | 24                          |
| Viet Nam  | 88                             | 0%  | 11                          |
| Oman  | 49                             | 0%  | 4                           |
| Total   | 50714                          | 100%  | 162                         |

Source: Author's Analysis

Table 6. 34 Cream (040150) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Cream (040150)</b> |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
| <b>Countries</b>  | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| China   | 433441                         | 81%   | 19                          |
| Malaysia  | 31067                          | 6%  | 6                           |
| Viet Nam  | 15734                          | 3%  | 11                          |
| Indonesia   | 14121                          | 3%  | 11                          |
| Bahrain   | 11900                          | 2%  | 9                           |
| Philippines   | 10324                          | 2%  | 11                          |
| Lebanon   | 9318                           | 2%  | 8                           |
| Kazakhstan  | 5681                           | 1%  | 13                          |
| Oman  | 3658                           | 1%  | 4                           |
| Malta   | 532                            | 0%  | 9                           |
| Brunei Darussalam   | 270                            | 0%  | 11                          |
| Total   | 536046                         | 100%  | 112                         |

Source: Author's Analysis

### 6.6.8 Condensed Milk

Condensed milk category has two codes; 040291 and 040299. 040291 is Milk and cream, concentrated but unsweetened (excluding in solid forms) and 040299 is Milk and cream, concentrated and sweetened (excluding in solid forms). Table 6.35 and 6.36 shows countries having high trade score and high NTM score for condensed milk (040291) and condensed milk (040299). Table represents total import and NTM frequency. The potential countries to export condensed milk are Oman, Hong Kong, Kuwait, Russia, China, Indonesia. Oman has 31% market share and to export condensed milk in this market India has to meet 2 unique NTM barriers. Similarly, Hong Kong has 30% market share, Kuwait has 14% market share and 1 unique NTM barrier. Russia has 3% market share and 2 unique NTM barriers, China has 12% market share and 17 unique NTM barriers, Indonesia has 0.44% market share and 4 unique NTM barriers.



Table 6. 35 Condensed Milk (040291) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Condensed milk (040291)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Oman   | 69520                          | 31%   | 2                           |
| Hong Kong  | 66008                          | 30%   | No Unique                   |
| Kuwait   | 32249                          | 14%   | 1                           |
| China  | 26994                          | 12%   | 17                          |
| Kazakhstan   | 11437                          | 5%  | 3                           |
| Russia   | 7751                           | 3%  | 2                           |
| Philippines  | 6894                           | 3%  | 4                           |
| Brunei Darussalam  | 1001                           | 0%  | 1                           |
| Indonesia  | 975                            | 0%  | 4                           |
| Lebanon  | 174                            | 0%  | No Unique                   |
| Viet Nam   | 24                             | 0%  | 4                           |
| Total  | 223027                         | 100%  |                             |

Source: Author's Analysis

Table 6. 36 Condensed Milk (040299) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Condensed milk (040299)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| United Kingdom   | 69898                          | 35%   | No Unique                   |
| Russian Federation   | 49054                          | 24%   | No Unique                   |
| China  | 21661                          | 11%   | 5                           |
| Indonesia  | 14233                          | 7%  | 1                           |
| Kazakhstan   | 11056                          | 5%  | 1                           |
| Italy  | 10457                          | 5%  | No Unique                   |
| Greece   | 9386                           | 5%  | No Unique                   |
| Denmark  | 5430                           | 3%  | No Unique                   |
| Austria  | 4621                           | 2%  | No Unique                   |
| Sweden   | 3517                           | 2%  | No Unique                   |
| Finland  | 963                            | 0%  | No Unique                   |
| Egypt  | 824                            | 0%  | No Unique                   |
| Kyrgyzstan   | 504                            | 0%  | 1                           |
| Total  | 201604                         | 100%  |                             |

Source: Author's Analysis

### 6.6.9 Yoghurt

Table 6.37 shows countries having high trade score and high NTM score for yoghurt (040310). Table represents total import and NTM frequency. The potential countries to export yoghurt are Oman, China, Russia and Philippines. Oman has 34% market share and to export yoghurt in this market India has to meet 1 unique NTM barrier. Similarly, China has 29% market share and 14 unique NTM barriers, Russia has 14% market share and 1 unique barrier while Philippines has 5% market share and 4 unique NTM barriers.

Table 6. 37 Yoghurt (040310) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Yoghurt (040310)</b> |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
| <b>Countries</b>  | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Oman  | 62586                          | 34%   | 1                           |
| China   | 52561                          | 29%   | 14                          |
| Russian Federation  | 25758                          | 14%   | 1                           |
| Philippines   | 8509                           | 5%  | 4                           |
| Cyprus  | 6512                           | 4%  | No Unique                   |
| Malaysia  | 5976                           | 3%  | No Unique                   |
| Malta   | 5123                           | 3%  | No Unique                   |
| Kazakhstan  | 4647                           | 3%  | 2                           |
| Viet Nam  | 4208                           | 2%  | 4                           |
| Indonesia   | 3105                           | 2%  | 5                           |
| Qatar   | 3066                           | 2%  | No Unique                   |
| Brunei Darussalam   | 2312                           | 1%  | 1                           |
| Total   | 184363                         | 100%  |                             |

Source: Author's Analysis

### 6.6.10 Infant Milk Food

Table 6.38 shows countries having high trade score and high NTM score for Infant milk food (190110). Table represents total import and NTM frequency. The potential countries to export infant milk food are Alegria, Kazakhstan. Algeria has 64% market share and to export infant milk food in this market India has to meet 1 unique NTM barrier whereas Kazakhstan has 15% market share.

Table 6. 38 Infant Milk Food (190110) Potential Countries

| <b>High Trade Score-High NTM Score Countries-infant milk food (190110)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Algeria  | 169320                         | 64%   | 1                           |
| Kazakhstan   | 38693                          | 15%   | No unique                   |
| Côte d'Ivoire  | 26400                          | 10%   | 1                           |
| Tunisia  | 17648                          | 7%  | No unique                   |
| Tajikistan   | 7822                           | 3%  | No unique                   |
| Luxembourg   | 4072                           | 2%  | No unique                   |
| <b>Total</b>   | <b>263955</b>                  | <b>100%</b>                                   |                             |

Source: Author's Analysis

### 6.6.11 Casein

Table 6.39 shows countries having high trade score and high NTM score for casein (350110). Table represents total import and NTM frequency. The potential countries to export casein are Russia, Switzerland, Sweden, Denmark, Kazakhstan. To export casein in Russia, Switzerland and Kazakhstan, India has to meet 1 unique NTM barrier.

Table 6. 39 Casein (350110) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Casein (350110)</b> |                                |   |                             |
|--|--------------------------------|---|-----------------------------|
| <b>Countries</b>   | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Russian Federation   | 27164                          | 76%   | 1                           |
| Switzerland  | 2934                           | 8%  | 1                           |
| Sweden   | 2542                           | 7%  | No Unique                   |
| Denmark  | 1945                           | 5%  | No Unique                   |
| Kazakhstan   | 539                            | 1%  | 1                           |
| Bulgaria   | 472                            | 1%  | No Unique                   |
| Finland  | 211                            | 1%  | No Unique                   |
| Estonia  | 92                             | 0%  | No Unique                   |
| Luxembourg   | 26                             | 0%  | No Unique                   |
| Lebanon  | 12                             | 0%  | No Unique                   |
| Kyrgyzstan   | 2                              | 0%  | 1                           |
| <b>Total</b>   | <b>35939</b>                   | <b>100%</b>                                   |                             |

Source: Author's Analysis

### 6.6.12 Caseinate

Table 6.40 shows countries having high trade score and high NTM score for caseinate (350190). Table represents total import and NTM frequency. The potential countries to export casein are Denmark, Sweden, Austria. Denmark has 53% market share and to export caseinate in this market India has to meet 1 unique NTM barrier. Likewise, Sweden has 18% market share and 1 unique NTM barrier, Austria has 12% market share and 1 unique NTM barrier.

Table 6. 40 Caseinate (350190) Potential Markets

| <b>High Trade Score-High NTM Score Countries-Caseinate (350190)</b> |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
| <b>Countries</b>  | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Denmark   | 11321                          | 53%   | 1                           |
| Sweden  | 3804                           | 18%   | 1                           |
| Austria   | 2508                           | 12%   | 1                           |
| Finland   | 1842                           | 9%  | 1                           |
| Lebanon   | 1527                           | 7%  | 2                           |
| Luxembourg  | 79                             | 0%  | 1                           |
| Estonia   | 61                             | 0%  | 1                           |
| Kyrgyzstan  | 37                             | 0%  | 7                           |
| Kazakhstan  | 32                             | 0%  | 10                          |
| Cyprus  | 32                             | 0%  | 1                           |
| Bahrain   | 7                              | 0%  | 8                           |
| Brunei Darussalam   | 4                              | 0%  | 4                           |
| Total   | 21254                          | 100%  | 38                          |

Source: Author's Analysis

### 6.6.13 Lactose Pharmaceuticals

Table 6.41 shows countries having high trade score and high NTM score for lactose pharmaceuticals (170211). Table represents total import and NTM frequency. The potential countries to export lactose pharmaceuticals are Poland, Spain, Sweden, Portugal. Poland has 45% market share and to export lactose pharmaceuticals in this market India has to meet 4 unique NTM barriers. Likewise, Spain has 36% market share and 4 unique NTM barriers, Sweden has 8% market share and 18 unique NTM barriers, Portugal has 7% market share and 7 unique NTM barriers.

Table 6. 41 Lactose Pharmaceuticals (170211) Potential Countries

| <b>High Trade Score-High NTM Score Countries-Lactose Pharmaceuticals (170211)</b> |                                |   |                             |
|---|--------------------------------|---|-----------------------------|
| <b>Countries</b>  | <b>Total Import (USD '000)</b> | <b>Market share among potential countries</b> | <b>Unique NTM Frequency</b> |
| Poland  | 18292                          | 45%   | 4                           |
| Spain   | 14576                          | 36%   | 4                           |
| Sweden  | 3449                           | 8%  | 18                          |
| Portugal  | 2796                           | 7%  | 7                           |
| Malta   | 607                            | 1%  | 4                           |
| Cyprus  | 590                            | 1%  | 7                           |
| Mauritania  | 325                            | 1%  | 7                           |
| Namibia   | 134                            | 0%  | 7                           |
| Kazakhstan  | 117                            | 0%  | 31                          |
| Luxembourg  | 44                             | 0%  | 4                           |
| Barbados  | 6                              | 0%  | 7                           |
| Kyrgyzstan  | 2                              | 0%  | 17                          |
| Total   | 40938                          | 100%  | 117                         |

Source: Author's Analysis

To conclude, Table 6.42 represents the potential countries having high trade score and high NTM score for all the dairy products such as Butter, Bulk and Pack Milk, Cream, SMP, WMP, Condensed Milk, Yoghurt, Whey Powder, Cheese, Infant Milk Food, Casein, Caseinate and Lactose Pharmaceuticals.

Table 6. 42 Potential Countries for Dairy Products

| <b>S/N</b> | <b>Product Name</b> | <b>Product Codes</b>                   | <b>Countries</b>  |
|------------|---------------------|--|---|
| 1          | Butter              | 040150, 040520                         | China, Russia, Japan, Qatar, USA, Oman                  |
| 2          | SMP                 | 40210                                  | China   |
| 3          | Cheese              | 040610, 040620, 040630, 040640, 040690 | China, Russia, Indonesia, Israel, Vietnam, Kuwait       |
| 4          | WMP                 | 040221, 040229                         | China, Saudi Arabia, Indonesia, Kuwait, Egypt, Russia   |
| 5          | Bulk & Pack Milk    | 040110, 040120                         | China, Oman, Russia                                     |
| 6          | Whey Powder         | 040410, 040490                         | China, Indonesia, Egypt, Saudi Arabia                   |
| 7          | Cream               | 040140, 040150                         | Kuwait, Hong Kong, Malaysia, UAE, Bahrain, Saudi Arabia |

| S/N | Product Name            | Product Codes  | Countries   |
|-----|-------------------------|----------------|---|
| 8   | Condensed Milk          | 040291, 040299 | Oman, Hong Kong, Kuwait, Russia, China, Indonesia |
| 9   | Yoghurt                 | 40310          | Oman, China, Russia, Philippines                  |
| 10  | Infant Milk Food        | 190110         | Alegria, Kazakhstan                               |
| 11  | Casein                  | 350110         | Russia, Switzerland, Sweden, Denmark, Kazakhstan  |
| 12  | Caseinate               | 350190         | Denmark, Sweden, Austria                          |
| 13  | Lactose Pharmaceuticals | 170211         | Poland, Spain, Sweden, Portugal                   |

*Note: For product code 040590 (Ghee) potential countries not listed because India already captured most of the global markets*

*Source: Author's Analysis*

# CHAPTER 7: INSIGHTS FROM PRIMARY SURVEY

## 7.1 Background

After conducting extensive secondary data analysis, it is imperative to conduct a primary survey across the country as well as in international markets in order to comprehend the ground realities. Primary survey often provides critical insights to the study which is mostly unknown from the secondary data analysis. Since the primary data collection methods are custom tailored in order to bridge the gap between the data already available and the data required/unavailable, it ensures the smooth progress of the study. Apart from these benefits, the higher degree of control as well as the updated/real time data obtained from stake holders makes primary survey an important component for this study.

## 7.2 Introduction

Since domestic dairy companies are integral part of the study, Sole Proprietorship firms, Partnership Firms, Private companies, Public companies, Producer Companies and Dairy Co-operatives across the country are contacted in order to gather insights for the study. Among all these types of dairy companies taken for domestic survey, there are various segments based on the nature of their operation such as Dairy Manufacturer, Dairy Manufacturer cum Exporter, Merchant Exporter/Export Agencies. This is represented in the form of Figure 7. 1.

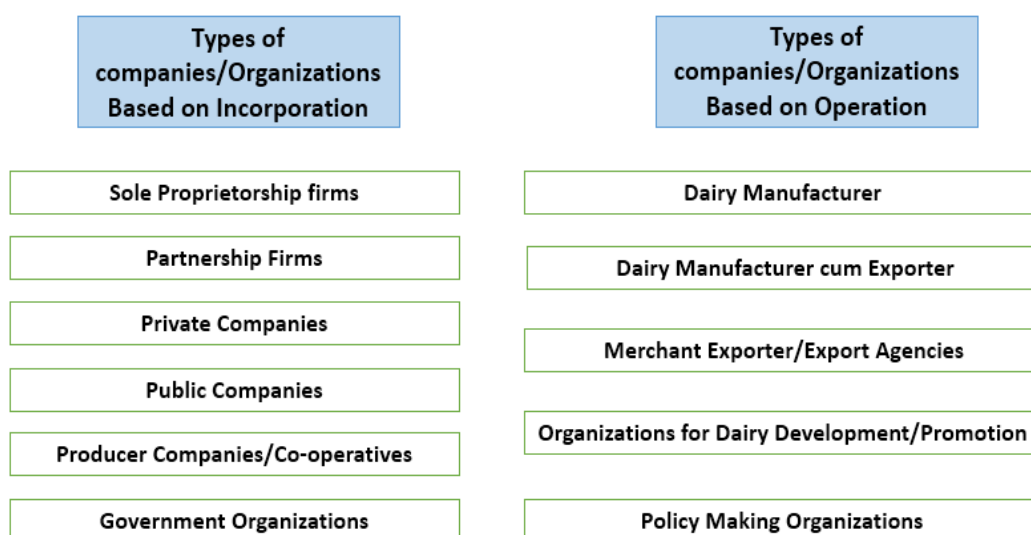


Figure 7. 1: Types of Companies considered for domestic survey

On the other hand, the international Dairy companies/Organizations taken for the primary survey is represented as Figure 7. 2. Various classifications of foreign companies/Organizations taken for the survey includes Foreign Sole Proprietorship firms, Foreign Partnership Firms, Foreign Private companies,

Foreign Public companies, Foreign Producer Companies, Foreign Dairy Co-operatives, Foreign Private Organizations as well as the Foreign Governmental Organizations. All of these foreign organizations/companies fall under Dairy manufacturer or Foreign Manufacturer Cum Importer or Foreign Manufacturer cum Exporter or Foreign Export/Import Agencies or Foreign Associations for Dairy Promotion.

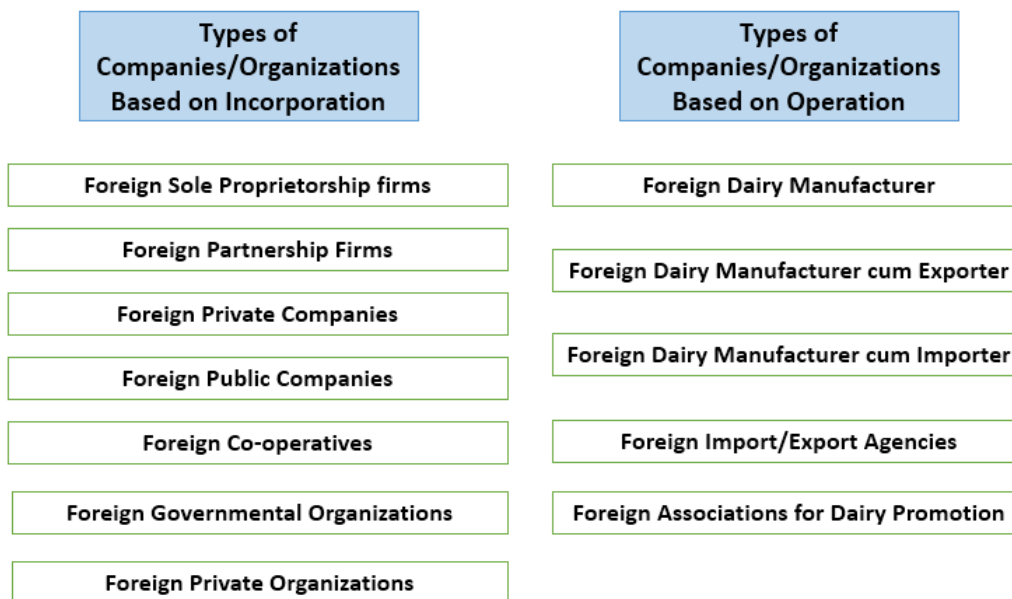


Figure 7. 2: Types of Companies/Organization considered for International survey

All of these contact points are identified as relevant to the study by the researchers based on extensive discussions and empirical evidence.

### 7.3 Methodology

This study is both descriptive and exploratory in nature. Domestic survey and International Survey are the central component of the research. Population for the Domestic study was framed using various directories compiling Contact information of numerous stakeholders in the Indian dairy Sector. On the other hand, Population for International Survey has been identified from information compiled from Indian High Commissions of various countries, Embassies and Overseas Missions of different countries in India and also the details of foreign companies obtained from numerous international data bases. Non-Probability Sampling has been used for both International and Domestic surveys.

#### 7.3.1 Domestic Survey

Domestic survey has been conducted in two phases across different states in India over a period of 3 months starting from August to October 2019. Data collection under the survey has been carried out using



tools: Personal Interviews, Telephonic Interviews, Online Surveys using Qualtrics Online Survey Tool, and Video Conferencing. Further details of the survey can be comprehended from Figure 7. 3.

| Domestic Data Collection Stages   |   |   |  |
|---|---|---|--|
| Stage 1   | Stage 2   | Stage 3   | Stage 4  |
| Inception of this Phase comprised of Identification of Sample Population for the Study. Contact details of Dairy Manufacturers, Merchants, Manufacturer cum Merchants, Dairy Plants as well as the Key Policy Makers/Industry Specialists in the Indian Dairy sector has been Compiled from Numerous Sources. | Research team shortlists More than 10,000 Respondents Spread across India. All these Respondents were contacted using the following communication channels<br>i) Mass e-mailing with online Survey Links<br>ii) Customized e mails<br>iii) Telephonic Conversations | Survey team personally visits respondents who has provided appointments to them. Mean while a back up team Conducts Telephonic Interviews to the contacts along with follow-ups to the contacts who has not provided any response to the Initial Communications. Data collection tools used for the Domestic surveys are the following<br>I. Personal Interviews<br>II. Telephonic Interviews<br>III. Online Questionnaires | Reminder e-mails has been send to the identified contacts who did not responded to the communications sent during stage 2. |

Figure 7. 3: Overview of Domestic Survey

Major Dairy Cooperatives and Private Companies covered under primary survey is given in Figure 7. 4.

| Major Dairy Cooperatives Covered under the Study  |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>○ Gujarat Cooperative Milk Marketing Federation (GCMMF)</li> <li>○ Mother Dairy</li> <li>○ Haryana Dairy Development Cooperative Federation Ltd.</li> <li>○ Himachal Pradesh State Cooperative Milk Producers' Federation Limited</li> <li>○ Karnataka Cooperative Milk Producers</li> </ul> | <ul style="list-style-type: none"> <li>○ Punjab State Cooperative Milk Producers Federation Ltd</li> <li>○ Rajasthan Cooperative Dairy Federation Ltd</li> <li>○ Tamil Nadu Cooperative Milk Producers' Federation Ltd</li> <li>○ Pradeshik Cooperative Dairy Federation Ltd</li> </ul> | <ul style="list-style-type: none"> <li>○ Cooperative Federation Limited</li> <li>○ Sri Vijaya Visakha Milk Producers Company Ltd</li> <li>○ Maharashtra Rajya Sahakari Dudh Mahasangh Maryadit (MRSDMM)</li> </ul> |
| Major Private Dairy Companies Covered under the Study   |   |  |
| <ul style="list-style-type: none"> <li>○ Parag Milk Foods</li> <li>○ Dodla Dairy Ltd</li> <li>○ Heritage Foods</li> <li>○ Parul Foods Specialties</li> </ul>  | <ul style="list-style-type: none"> <li>○ ABT foods</li> <li>○ Value Beverage</li> </ul>   |  |
|   |   |  |

Figure 7. 4: Major Organized Dairy Institutions covered under Domestic Survey

### 7.3.2 International Survey

International Survey for the study has been carried out in two phases between October and November 2019. Phase-1 mostly comprised of visits to Embassies and Overseas missions of Identified countries along with distribution of online survey forms. Additionally, the Phase-2 of the International Survey was

done by personal visit to various identified markets. Data collection for International Survey has been done using: Personal Interviews, Telephonic Interviews, Online Surveys using Qualtrics Online Survey Tool, and Video Conferencing. Detailed Information Regarding International Survey is provided in the form of Figure 7. 5.

| International Data Collection Stages   |   |  |   |
|--|---|--|---|
| Stage 1  | Stage 2   | Stage 3  | Stage 4   |
| <p>Identifying a Sample Population comprising of Foreign dairy Companies, Associations, Inter Governmental Organizations etc. Respondents are Finalized with help of the following sources</p> <p>i) Websites of International Governmental Organizations/Embassies</p> <p>ii) Company details from numerous databases and directories</p> <p>iii) Contact details of Organizations in dairy sector provided by various Embassies, Overseas missions and High Commissions.</p> | <p>Research team shortlists around 2000 contact points comprising of foreign dairy companies, Dairy Associations, Foreign Policy makers, High commissions and Embassies spread across the world. Communication between these contacts has been done using:</p> <p>i) Mass e-mailing</p> <p>ii) Highly Customized e mails</p> <p>iii) Telephonic Conversations</p> <p>iv) Video Conferencing</p> | <p>Survey team visits EU Countries to understand the best practices followed by the dairy Industry in the region. They also attend International Dairy Summit held in Turkey. Meanwhile In India, a backup team visits Embassies of selected countries to gather further insights for the study.</p> | <p>Reminder e-mails has been send to the identified contacts who did not responded to the communications sent during stage 2.</p> |

Figure 7. 5: Overview of International Survey

Additionally, Figure 7. 6 represents the Major International Organizations covered under the study along with some Prominent International Dairy Companies spread across the globe.


| Major International Organizations Covered under the Study   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li>o International Dairy Federation</li> <li>o Organisation for Economic Co-operation and Development (OECD)</li> <li>o Dutch Dairy Association</li> <li>o International Farm Comparison Network (IFCN)</li> <li>o European Association of Dairy Trade</li> </ul>   | <ul style="list-style-type: none"> <li>o Norwegian Dairy Association</li> <li>o Nepal Dairy Science Association</li> </ul>   |   |
| Major International Companies Covered under the Study   |  |   |
| <ul style="list-style-type: none"> <li>o Al Rawabi Dairy Company (UAE)</li> <li>o Pt. Ultrajaya milk industry (Indonesia)</li> <li>o Moo Moo Farms (Cambodia)</li> <li>o Lebanese dairy Chtoora LLC (UAE)</li> <li>o Hakan Agro DMCC (UAE)</li> <li>o Bangladesh Milk Producers Co-operative Union Limited</li> <li>o Brindawan Dairy Pvt. Ltd (Nepal)</li> </ul> | <ul style="list-style-type: none"> <li>o Sujal Dairy Pvt. Ltd. (Nepal)</li> <li>o Saudia Dairy and Foodstuff (Saudi Arabia)</li> <li>o Socius Ingredients LLC (UAE)</li> <li>o Balade Farms (UAE)</li> <li>o Fortuna Trading DMCC (UAE)</li> <li>o UNIKAI FOODS (UAE)</li> <li>o JM Foods LLC (UAE)</li> </ul> | <ul style="list-style-type: none"> <li>o Milkorp FZCO(UAE)</li> <li>o Ayush Food Industries FZE. Dubai Br. (UAE)</li> <li>o Colosseum Doha WLL (Qatar)</li> </ul>                 |
|    |   |    |
|   |    |    |
|   |    |  <p>Nepal Dairy Science Association<br/>नेपाल डेरी साइन्स एसोसियेशन<br/>Kathmandu, Nepal</p> |

Figure 7. 6: Major International Companies/Organizations Covered Under the Study

## 7.4 Survey Tool

### 7.4.1 Questionnaire

To understand the problems and challenges faced by Indian exporters and manufacturers a detailed questionnaire is administered. Also, a separate semi-structured questionnaire is used to understand the foreign dairy markets.

Questionnaire to explore the issues faced by domestic exporters and manufacturers are designed for three sets of respondents: Managing Directors, Quality Manager and Export Managers of dairy units (Private/public/co-operatives). Open and close ended questions are used to capture useful insights. A snapshot of the important questions from the questionnaire are given in Table 7. 1.

*Table 7. 1: Snapshot of important questions to capture the domestic dairy export challenge*

| Demographic Questions | General Management                                  | Export                                 | Quality  |
|-----------------------|---|--|--|
| 1. Business Type      | 1. Products Sold in Domestic Markets                | 1. Export Markets (top 10)             | 1. Availability of Quality test Laboratory     |
| 2. Operation Type     | 2. Access to Cold Chain                             | 2. Products Exported                   | 2. Quality Related Issues (Open Ended)         |
| 3. State              | 3. Procurement time related                         | 3. Export Market Issues                | 3. Suggestions to enhance quality (open ended) |
|                       | 4. Lead Time  | 4. Price Competency related issues     |  |
|                       | 5. Major Challenges and Issues (open ended)         | 5. Export Finance                      |  |
|                       | 6. General suggestions for Improvement (open ended) | 6. Free Trade Agreements               |  |
|                       | 7. Policy related issues (open ended)               | 7. Finance Related issues (Open ended) |  |

Semi-structured personal interviews are also conducted across various dairy units and policy makers to understand and comprehend ground level issues and challenges faced by the Indian Dairy Industry.

The questionnaire used to understand the foreign markets like Germany, Denmark, Belgium, Turkey, Norway, Sweden, Netherlands, United Arab Emirates, Bangladesh, Malaysia, Indonesia, Cambodia, Nepal and Saudi Arabia revolves around the core export competency attributes. Various interviews are also conducted on the same line with the High Commissions of Foreign countries in India including Myanmar, Sri Lanka, Singapore, Nepal and New Zealand. Similarly, the survey team also visited Indian

high commissions in United Arab Emirates and Oman. A snapshot of the country response is given in Table 7.2

Table 7. 2: Snapshot of Countries covered under the study

| Personal Visit to Indian High Commissions Abroad | Personal visit to Foreign High Commissions in India | Personal Visits | Video Conferencing | Telephonic Conversations | Email/online |
|--|---|-----------------|--------------------|--------------------------|--------------|
| UAE  | Nepal   | Germany         | Bangladesh         | UAE                      | Germany      |
| Oman   | Singapore   | Denmark         | Saudi Arabia       | Nepal                    | China        |
| Belgium  | New Zealand   | Belgium         |                    | Indonesia                | Uganda       |
|  | Myanmar   | Turkey          |                    |                          | Australia    |
|  | Sri Lanka   | Norway          |                    |                          | Vietnam      |
|  |   | Sweden          |                    |                          | Bhutan       |
|  |   | Netherlands     |                    |                          | Azerbaijan   |
|  |   | UAE             |                    |                          | Afghanistan  |
|  |   | Malaysia        |                    |                          | Egypt        |
|  |   | Indonesia       |                    |                          | Cambodia     |
|  |   | Cambodia        |                    |                          | South Africa |
|  |   |                 |                    |                          | Ireland      |
|  |   |                 |                    |                          | Russia       |
|  |   |                 |                    |                          | Morocco      |
|  |   |                 |                    |                          | UAE          |

## 7.5 Domestic Sample Characteristics

In an attempt to capture Pan India Data, the survey team has covered numerous stakeholders across India. Forming a multi-national sample universe is vital for the study due to its exposure to global markets. A comprehensive data collection across the world has been carried out to address this requirement.

### 7.5.1 Demographic Analysis

Domestic Survey team has interacted with numerous stakeholders spread across 20 States/Union Territories in India and 200 Dairy Units. A total of 9402 Dairy Units are contacted, out of which 458 responses are obtained. In addition to that, responses from 15 Policy makers/Industry Specialists associated with the Indian Dairy Industry are collected. Composition of various states/UTs is provided in Table 7.3.

Table 7. 3: State wise Representation of the Sample

| States         | Frequency | Percent | States           | Frequency | Percent |
|----------------|-----------|---------|------------------|-----------|---------|
| Delhi          | 33        | 16.5    | Madhya Pradesh   | 5         | 2.5     |
| Gujarat        | 33        | 16.5    | Rajasthan        | 5         | 2.5     |
| Maharashtra    | 25        | 12.5    | Bihar            | 4         | 2       |
| Uttar Pradesh  | 19        | 9.5     | Punjab           | 3         | 1.5     |
| Haryana        | 16        | 8       | Assam            | 2         | 1       |
| Andhra Pradesh | 15        | 7.5     | Chhattisgarh     | 2         | 1       |
| Tamil Nadu     | 13        | 6.5     | Himachal Pradesh | 1         | 0.5     |
| Karnataka      | 10        | 5       | J & K            | 1         | 0.5     |
| Telangana      | 10        | 5       | Jharkhand        | 1         | 0.5     |
| Andaman        | 1         | 0.5     | Odisha           | 1         | 0.5     |

Source: Author's Analysis based on Primary Survey

Organizations covered under the primary survey conducted in the domestic market includes numerous types of entities including co-operatives/Producer companies, Policy maker/Industry Specialists, Private Public Companies and Sole Proprietorships/Partnership firms. A detailed description regarding the types of organizations included in the sampling is provided below.

Table 7. 4: Business Type Classification of Samples across States

| State            | Business Type  |                                 |                                  | Total |
|------------------|----------------|---------------------------------|----------------------------------|-------|
|                  | Private/Public | Sole Proprietorship/Partnership | Co-operatives/Producer companies |       |
| Andhra Pradesh   | 10             | 3                               | 2                                | 15    |
| Assam            | 0              | 0                               | 2                                | 2     |
| Bihar            | 3              | 0                               | 1                                | 4     |
| Chhattisgarh     | 1              | 0                               | 1                                | 2     |
| Delhi            | 28             | 5                               | 0                                | 33    |
| Gujarat          | 21             | 4                               | 8                                | 33    |
| Haryana          | 13             | 2                               | 1                                | 16    |
| Himachal Pradesh | 0              | 0                               | 1                                | 1     |
| J & K            | 1              | 0                               | 0                                | 1     |
| Jharkhand        | 1              | 0                               | 0                                | 1     |
| Karnataka        | 0              | 0                               | 10                               | 10    |
| Madhya Pradesh   | 3              | 2                               | 0                                | 5     |
| Maharashtra      | 2              | 5                               | 18                               | 24    |
| Odisha           | 1              | 0                               | 0                                | 1     |

| State         | Business Type  |                                 |                                  | Total |
|---------------|----------------|---------------------------------|----------------------------------|-------|
|               | Private/Public | Sole Proprietorship/Partnership | Co-operatives/Producer companies |       |
| Punjab        | 3              | 0                               | 0                                | 3     |
| Rajasthan     | 4              | 0                               | 1                                | 5     |
| Tamil Nadu    | 10             | 1                               | 2                                | 13    |
| Telangana     | 10             | 0                               | 0                                | 10    |
| Uttar Pradesh | 5              | 13                              | 1                                | 19    |
| Andaman       | 0              | 0                               | 1                                | 1     |
|               | 116            | 35                              | 49                               | 200   |

Source: Author's Analysis based on Primary Survey

Similarly, categorization of the operations of domestic contacts covered under domestic survey comprises Manufacturer, Manufacturer Exporters, and Merchant Exporters along with others. This can be comprehended from Table 7.5 and Table 7.6.

Table 7.5: Types of Business Operations covered under the study

| Operations Type |                       | Frequency | Percent |
|-----------------|-----------------------|-----------|---------|
| Valid           | Manufacturer          | 106       | 53      |
|                 | Manufacturer Exporter | 58        | 29      |
|                 | Merchant Exporter     | 28        | 14      |
|                 | Domestic Supplier     | 1         | 0.5     |
|                 | Total                 | 193       | 96.5    |
| Missing         | System                | 7         | 3.5     |
| Total           |                       | 200       | 100     |

Source: Author's Analysis based on Primary Survey

Table 7.6: Operation type classification of sample across states

| State          | Operations Type |                       |                   |                   | Total |
|----------------|-----------------|-----------------------|-------------------|-------------------|-------|
|                | Manufacturer    | Manufacturer Exporter | Merchant Exporter | Domestic Supplier |       |
| Andhra Pradesh | 13              | 0                     | 2                 | 0                 | 15    |
| Assam          | 2               | 0                     | 0                 | 0                 | 2     |
| Bihar          | 4               | 0                     | 0                 | 0                 | 4     |
| Chhattisgarh   | 2               | 0                     | 0                 | 0                 | 2     |
| Delhi          | 15              | 12                    | 6                 | 0                 | 33    |

| State            | Operations Type |                       |                   |                   | Total |
|------------------|-----------------|-----------------------|-------------------|-------------------|-------|
|                  | Manufacturer    | Manufacturer Exporter | Merchant Exporter | Domestic Supplier |       |
| Gujarat          | 15              | 13                    | 4                 | 0                 | 32    |
| Haryana          | 5               | 5                     | 6                 | 0                 | 16    |
| Himachal Pradesh | 1               | 0                     | 0                 | 0                 | 1     |
| J & K            | 1               | 0                     | 0                 | 0                 | 1     |
| Jharkhand        | 0               | 0                     | 1                 | 0                 | 1     |
| Karnataka        | 2               | 3                     | 0                 | 0                 | 5     |
| Madhya Pradesh   | 4               | 0                     | 0                 | 0                 | 4     |
| Maharashtra      | 14              | 10                    | 0                 | 0                 | 24    |
| Odisha           | 0               | 0                     | 1                 | 0                 | 1     |
| Punjab           | 2               | 1                     | 0                 | 0                 | 3     |
| Rajasthan        | 4               | 1                     | 0                 | 0                 | 5     |
| Tamil Nadu       | 0               | 5                     | 8                 | 0                 | 13    |
| Telangana        | 6               | 4                     | 0                 | 0                 | 10    |
| Uttar Pradesh    | 14              | 4                     | 0                 | 1                 | 19    |
| Andaman          | 1               | 0                     | 0                 | 0                 | 1     |
| Total            | 105             | 58                    | 28                | 1                 | 192   |

Source: Author's Analysis based on Primary Survey

Table 7. 7: Business Type and Operations Type-Cross Tabulation

| Business Type                    | Operations Type |                       |                   |                   | Total |
|----------------------------------|-----------------|-----------------------|-------------------|-------------------|-------|
|                                  | Manufacturer    | Manufacturer Exporter | Merchant Exporter | Domestic Supplier |       |
| Private/Public                   | 59              | 33                    | 24                | 0                 | 116   |
| Sole Proprietorship/Partnership  | 21              | 8                     | 4                 | 1                 | 34    |
| Co-operatives/Producer companies | 26              | 17                    | 0                 | 0                 | 43    |
| Total                            | 106             | 58                    | 28                | 1                 | 193   |

Source: Author's Analysis based on Primary Survey

Table 7. 7 depicts the cross tabulation across business type, operation types covered under the study whereas the Table 7. 8 shows the hybrid view of the same along with their respective states.

Table 7. 8: State wise Cross tabulation of Business and Operation Type

| Business Type                    |                | Operations Type |                       |                   |                   | Total |
|----------------------------------|----------------|-----------------|-----------------------|-------------------|-------------------|-------|
|                                  |                | Manufacturer    | Manufacturer Exporter | Merchant Exporter | Domestic Supplier |       |
| Private/Public                   | Andhra Pradesh | 10              | 0                     | 0                 |                   | 10    |
|                                  | Bihar          | 3               | 0                     | 0                 |                   | 3     |
|                                  | Chhattisgarh   | 1               | 0                     | 0                 |                   | 1     |
|                                  | Delhi          | 13              | 9                     | 6                 |                   | 28    |
|                                  | Gujarat        | 10              | 7                     | 4                 |                   | 21    |
|                                  | Haryana        | 4               | 4                     | 5                 |                   | 13    |
|                                  | J & K          | 1               | 0                     | 0                 |                   | 1     |
|                                  | Jharkhand      | 0               | 0                     | 1                 |                   | 1     |
|                                  | Madhya Pradesh | 3               | 0                     | 0                 |                   | 3     |
|                                  | Maharashtra    | 0               | 2                     | 0                 |                   | 2     |
|                                  | Odisha         | 0               | 0                     | 1                 |                   | 1     |
|                                  | Punjab         | 2               | 1                     | 0                 |                   | 3     |
|                                  | Rajasthan      | 3               | 1                     | 0                 |                   | 4     |
|                                  | Tamil Nadu     | 0               | 3                     | 7                 |                   | 10    |
|                                  | Telangana      | 6               | 4                     | 0                 |                   | 10    |
|                                  | Uttar Pradesh  | 3               | 2                     | 0                 |                   | 5     |
|                                  |                | 59              | 33                    | 24                |                   | 116   |
| Sole Proprietorship/Partnership  | Andhra Pradesh | 1               | 0                     | 2                 | 0                 | 3     |
|                                  | Delhi          | 2               | 3                     | 0                 | 0                 | 5     |
|                                  | Gujarat        | 4               | 0                     | 0                 | 0                 | 4     |
|                                  | Haryana        | 0               | 1                     | 1                 | 0                 | 2     |
|                                  | Madhya Pradesh | 1               | 0                     | 0                 | 0                 | 1     |
|                                  | Maharashtra    | 3               | 2                     | 0                 | 0                 | 5     |
|                                  | Tamil Nadu     | 0               | 0                     | 1                 | 0                 | 1     |
|                                  | Uttar Pradesh  | 10              | 2                     | 0                 | 1                 | 13    |
|                                  |                | 21              | 8                     | 4                 | 1                 | 34    |
| Co-operatives/Producer companies | Andhra Pradesh | 2               | 0                     |                   |                   | 2     |
|                                  | Assam          | 2               | 0                     |                   |                   | 2     |
|                                  | Bihar          | 1               | 0                     |                   |                   | 1     |
|                                  | Chhattisgarh   | 1               | 0                     |                   |                   | 1     |
|                                  | Gujarat        | 1               | 6                     |                   |                   | 7     |
|                                  | Haryana        | 1               | 0                     |                   |                   | 1     |



| Business Type |                  | Operations Type |                       |                   |                   | Total |
|---------------|------------------|-----------------|-----------------------|-------------------|-------------------|-------|
|               |                  | Manufacturer    | Manufacturer Exporter | Merchant Exporter | Domestic Supplier |       |
|               | Himachal Pradesh | 1               | 0                     |                   |                   | 1     |
|               | Karnataka        | 2               | 3                     |                   |                   | 5     |
|               | Maharashtra      | 12              | 6                     |                   |                   | 18    |
|               | Rajasthan        | 1               | 0                     |                   |                   | 1     |
|               | Tamil Nadu       | 0               | 2                     |                   |                   | 2     |
|               | Uttar Pradesh    | 1               | 0                     |                   |                   | 1     |
|               | Andaman          | 1               | 0                     |                   |                   | 1     |
|               |                  | 25              | 17                    |                   |                   | 42    |
| Total         | Andhra Pradesh   | 13              | 0                     | 2                 | 0                 | 15    |
|               | Assam            | 2               | 0                     | 0                 | 0                 | 2     |
|               | Bihar            | 4               | 0                     | 0                 | 0                 | 4     |
|               | Chhattisgarh     | 2               | 0                     | 0                 | 0                 | 2     |
|               | Delhi            | 15              | 12                    | 6                 | 0                 | 33    |
|               | Gujarat          | 15              | 13                    | 4                 | 0                 | 32    |
|               | Haryana          | 5               | 5                     | 6                 | 0                 | 16    |
|               | Himachal Pradesh | 1               | 0                     | 0                 | 0                 | 1     |
|               | J & K            | 1               | 0                     | 0                 | 0                 | 1     |
|               | Jharkhand        | 0               | 0                     | 1                 | 0                 | 1     |
|               | Karnataka        | 2               | 3                     | 0                 | 0                 | 5     |
|               | Madhya Pradesh   | 4               | 0                     | 0                 | 0                 | 4     |
|               | Maharashtra      | 14              | 10                    | 0                 | 0                 | 24    |
|               | Odisha           | 0               | 0                     | 1                 | 0                 | 1     |
|               | Punjab           | 2               | 1                     | 0                 | 0                 | 3     |
|               | Rajasthan        | 4               | 1                     | 0                 | 0                 | 5     |
|               | Tamil Nadu       | 0               | 5                     | 8                 | 0                 | 13    |
|               | Telangana        | 6               | 4                     | 0                 | 0                 | 10    |
|               | Uttar Pradesh    | 14              | 4                     | 0                 | 1                 | 19    |
|               | Andaman          | 1               | 0                     | 0                 | 0                 | 1     |
|               | 105              | 58              | 28                    | 1                 | 193               |       |

Source: Author's Analysis based on Primary Survey

## 7.5.2 Domestic and Export Product Distribution

Liquid Raw Milk is the most traded dairy product in the domestic Figure 7. 7 followed by Ghee, Butter, Paneer, Skimmed Milk Powder, Curd, Flavoured Milk, Other products, Yoghurt, Butter Milk, Lassi, Whole Milk Powder, Dahi, Peda, Shrikhand, Gulab Jamun etc. The other product category comprises of Casein, Caseinate and products like Lactose Pharamacaeuticals.

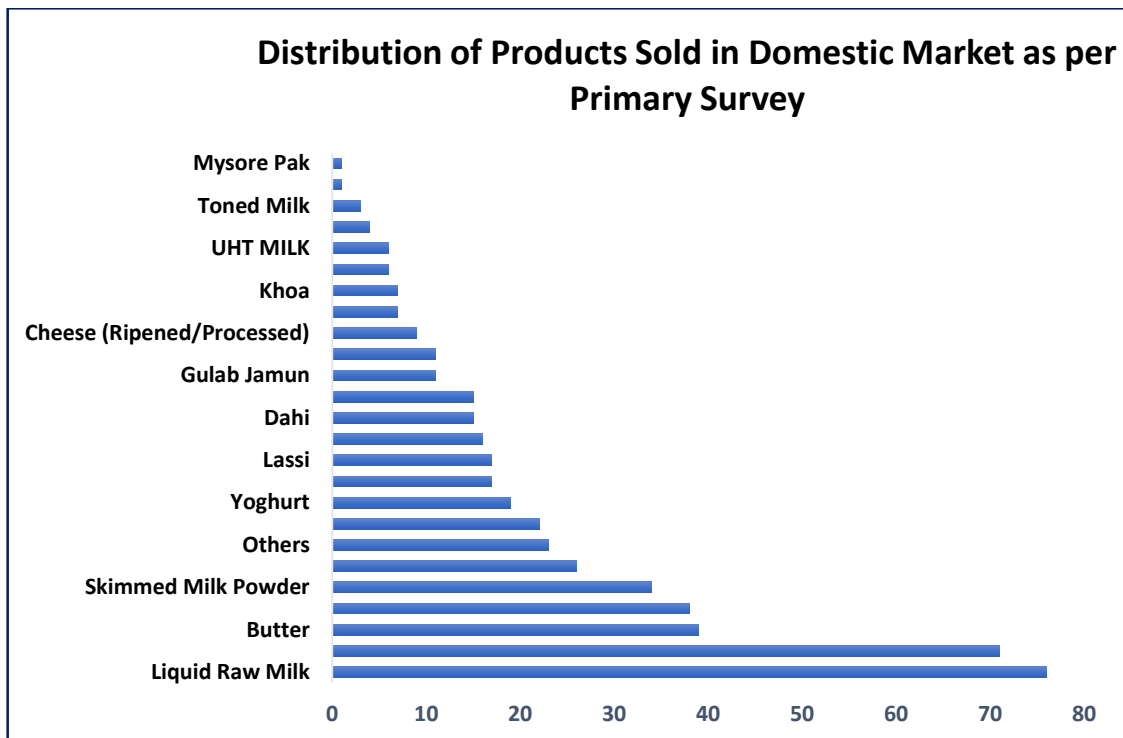


Figure 7. 7: Distribution of Products sold in the Domestic Market  
Source: Author's Analysis based on Primary Survey

## 7.6 Data Analysis

### 7.6.1 Chi-Square Test

To understand the relationship between various factors chi square test is performed.

#### *Conversion of Nominal to Ratio Scale*

*Nominal scale data is converted to ratio scale using the following method*

- *Calculate the frequency*
- *Assign weight to the frequency*
- *Sum up the weights to derive to a score*

*Coverage: coverage is calculated by counting the number of products/markets covered by each dairy unit.*

*As the nominal scale is converted into ratio scale, further a categorization of "High" and "Low" is done based on percentile.*

*Table 7. 9: Export Market Score for Private, Partnership and Co-operative Companies*

| Row Labels                       | Average of Export Market Score | Average of Export Market Coverage |
|----------------------------------|--------------------------------|-----------------------------------|
| Private/Public                   | 0.064                          | 1.078                             |
| Sole Proprietorship/Partnership  | 0.023                          | 0.343                             |
| Co-operatives/Producer companies | 0.034                          | 0.347                             |

*Source: Author's Analysis*

Export market scores (Table 7. 9) suggests that Private companies are doing better in terms of market coverage. They are exporting to a greater number of countries as compared to co-operatives and sole proprietorship. The major exports markets that reflects in the survey are UAE, Singapore, USA, Qatar etc (refer Figure 7. 13).

A Chi-square test of independence is performed (refer Table 7. 10) to examine any association between coverage of foreign markets and the business types. The association is found to be non-significant,  $X^2(2, N=56) = 1.94, p = .379 (>.05)$ . This reveals that there is no relationship between business type and export market coverage.

*Table 7. 10: Chi Square test for association: Export market coverage and business types*

| Chi-Square Tests   |                    |    |                       |
|--------------------|--------------------|----|-----------------------|
|                    | Value              | df | Asymp. Sig. (2-sided) |
| Pearson Chi-Square | 1.940 <sup>a</sup> | 2  | .379                  |
| Likelihood Ratio   | 2.046              | 2  | .360                  |

*Source: Author's Analysis*

Similarly, association between business types and export market score is also found to be non-significant,  $X^2(2, N=56) = 1.893, p = .388 (>.05)$  (refer Table 7. 11). It can be concluded that there is no association between business types and export market score<sup>10</sup> (high or low).

*Table 7. 11: Chi Square test for association: Export market score and business types*

| Chi-Square Tests   |                    |    |                       |
|--------------------|--------------------|----|-----------------------|
|                    | Value              | df | Asymp. Sig. (2-sided) |
| Pearson Chi-Square | 1.893 <sup>a</sup> | 2  | .388                  |
| Likelihood Ratio   | 2.015              | 2  | .365                  |

*Source: Author's Analysis*

<sup>10</sup> Export markets have been given a high and low score based on their frequency percentile. High score suggests: a particular dairy unit is exporting to important popular markets,

The association between the business types and exported dairy products is also examined using chi-square test. The results are presented in Table 7. 13 and Table 7. 14. Average score for exported product category and coverage is given in Table 7. 12. Like export market score and coverage, the average score of the private players in the exported product category is better than the co-operatives.

*Table 7. 12: Exported Product Score for Private, Partnership and Co-operatives*

| Row Labels                       | Average of Exported Product Score | Average of Exported Product Coverage |
|----------------------------------|-----------------------------------|--------------------------------------|
| Private/Public                   | 0.948                             | 0.129                                |
| Sole Proprietorship/Partnership  | 0.514                             | 0.043                                |
| Co-operatives/Producer companies | 0.429                             | 0.059                                |

*Source: Author's Analysis*

*Table 7. 13: Chi Square test for association: Exported product coverage and business types*

**Chi-Square Tests**

|                    | Value              | df | Asymp. Sig. (2-sided) |
|--------------------|--------------------|----|-----------------------|
| Pearson Chi-Square | 1.515 <sup>a</sup> | 4  | .824                  |
| Likelihood Ratio   | 2.022              | 4  | .732                  |

*Source: Author's Analysis*

*Table 7. 14: Chi Square test for association: Exported product score and business types*

**Chi-Square Tests**

|                    | Value              | df | Asymp. Sig. (2-sided) |
|--------------------|--------------------|----|-----------------------|
| Pearson Chi-Square | 6.973 <sup>a</sup> | 4  | .137                  |
| Likelihood Ratio   | 7.524              | 4  | .111                  |
| N of Valid Cases   | 56                 |    |                       |

*Source: Author's Analysis*

No association between exported product coverage and business type is found significant  $X^2(4, N=56) = 1.515, p=.824 (>.05)$ . Similarly, exported product score and business types has not association  $X^2(4, N=56) = 6.973, p=.137 (>.05)$ . This reveals that private or co-operatives can be differentiated in terms of export product coverage. Also, it cannot be concluded that the business types are different in terms of exporting popular or more demanded products in the foreign market.

However, Significant difference is observed in case of domestic product coverage amongst the business types: Private/Public, Sole Proprietorship/partnership and Co-operatives. The average score for domestic product is given in Table 7. 15.

*Table 7. 15: Domestic Product Score for Private/Public, Sole Proprietorship/partnership and Co-operatives*

| Row Labels                       | Average of Domestic Product Score | Average of Domestic Product Coverage |
|----------------------------------|-----------------------------------|--------------------------------------|
| Private/Public                   | 0.173                             | 2.103                                |
| Sole Proprietorship/Partnership  | 0.138                             | 1.800                                |
| Co-operatives/Producer companies | 0.269                             | 3.816                                |

*Source: Author's Analysis*

The average domestic product score and coverage for co-operatives is higher than the private and partnership firms. The association between domestic product categories and business type is also significant  $X^2(4, N=56) = 17.517, p = .002 (<.05)$ . The significant relationship between private players and co-operatives indicate that the business types can be distinguished in terms of domestic milk products.

*Table 7. 16: Chi Square test for association: Domestic Product Score and business types*

**Chi-Square Tests**

|                    | Value               | df | Asymp. Sig. (2-sided) |
|--------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 17.517 <sup>a</sup> | 4  | .002                  |
| Likelihood Ratio   | 17.582              | 4  | .001                  |

*Source: Author's Analysis*

However, the product coverage score is not significant  $X^2(4, N=56) = 1.515, p = .824 (>.05)$ . This reveals that in terms of domestic product coverage the private players or the co-operatives are same.

*Table 7. 17: Chi Square test for association: Domestic Product Coverage Score and business types*

**Chi-Square Tests**

|                    | Value              | df | Asymp. Sig. (2-sided) |
|--------------------|--------------------|----|-----------------------|
| Pearson Chi-Square | 1.515 <sup>a</sup> | 4  | .824                  |
| Likelihood Ratio   | 2.022              | 4  | .732                  |

*Source: Author's Analysis*

**Table 7. 18: Score vs Coverage Matrix-Export Market: Total, Private/Public and Co-operatives/Producer**

|                 |      | EM Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Table N %          | Table N % |
| EM Score Bucket | High | 30.4%              | 26.8%     |
|                 | Low  | 10.7%              | 32.1%     |

Source: Author's Analysis

BusinessType Private/Public

|                 |      | EM_Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Table N %          | Table N % |
| EM_Score Bucket | High | 38.5%              | 15.4%     |
|                 | Low  | 10.3%              | 35.9%     |

Source: Author's Analysis

BusinessType Co-operatives/Producer companies

|                 |      | EM_Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Table N %          | Table N % |
| EM_Score Bucket | High | 22.2%              | 55.6%     |
|                 | Low  | 0.0%               | 22.2%     |

Source: Author's Analysis

Table 7. 18 depicts a cross comparison of Export market coverage and Export market score. High coverage-high score case indicates the best possible position for a company, since important markets are covered abundantly. Low coverage-low score suggests intermittent exports to countries which are not primary destination. High coverage-low score indicates, sending products to countries that are not primary destination. Low coverage-high score points those dairy units which send dairy products to few of the primary/important markets. It can be observed that there are 32 % companies which have low export market coverage and low export market score. This means that 32% of the companies have poor reach to foreign markets and no access to the popular or important markets. However, the percent of companies which has high coverage and high market score is comparable (30%). When compared amongst the business types, it can be clearly observed that 36% of private players have good export market coverage as well as export market score in comparison with 22.2% of co-operatives. However, when seen closely, co-operatives are performing better in terms of export market score, 77.6% of co-operatives are exporting to popular or better markets, whereas 53.7 % of private players have access to the primary or important markets.

Table 7. 19 showcase a cross comparison of the exported product score and coverage. High coverage-high score is the best-case scenario, where various primary/important products are exported abundantly. High coverage and low score depict, exporting a greater number of dairy products which may or may not be in the primary/important category. Low coverage-high score on the other hand represents those dairy

units which exports only few primary/important products. Low coverage-low score is the intermittent export of dairy products. Combinedly, 36.5% of the products exported has high coverage and high score and 42.9% has low coverage-low score. It can be concluded clearly that more than the markets, dairy units should focus on the dairy products they are exporting. When analysed independently, Private dairy units can be seen performing slightly better, as 45.5% of the products are in high coverage-high score category. However, the low coverage-low score companies cannot be ignored i.e. 36.4%. In terms of products exported, 50% of the co-operatives are in low coverage and low score category.

**Table 7. 19: Score vs Coverage Matrix-Export Product: Total, Private/Public and Co-operatives/Producer**

|                 |      | PE Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Table N %          | Table N % |
| PE Score Bucket | High | 36.5%              | 15.9%     |
|                 | Low  | 4.8%               | 42.9%     |

**BusinessType Private/Public**

|                 |      | PE_Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Table N %          | Table N % |
| PE_Score Bucket | High | 45.5%              | 18.2%     |
|                 | Low  | 0.0%               | 36.4%     |

**BusinessType Co-operatives/Producer companies**

|                 |      | PE_Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Table N %          | Table N % |
| PE_Score Bucket | High | 20.0%              | 20.0%     |
|                 | Low  | 10.0%              | 50.0%     |

*Source: Author's Analysis*

If we look at the distribution of domestic products amongst co-operatives and private players, co-operatives are doing better as 58.3% of them are in the high coverage-high score domestic product category, whereas there are only 35.9% of private player are in that same category. It can be concluded from this overall analysis of export markets, exported products and domestic product category that private players are doing good in terms of exploring important markets whereas co-operatives are doing better in identifying the right exportable products.

Table 7. 20: Score vs Coverage Matrix-Domestic Product: Total, Private/Public and Co-operatives/Producer

|                 |      | PD Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Table N %          | Table N % |
| PD Score Bucket | High | 41.9%              | 8.8%      |
|                 | Low  | 1.5%               | 47.8%     |

BusinessType Private/Public

|                 |      | PD_Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Layer N %          | Layer N % |
| Pd_Score Bucket | High | 35.9%              | 10.3%     |
|                 | Low  | 1.3%               | 52.6%     |

Source: Author's Analysis

BusinessType Co-operatives/Producer companies

|                 |      | PD_Coverage Bucket |           |
|-----------------|------|--------------------|-----------|
|                 |      | High               | Low       |
|                 |      | Layer N %          | Layer N % |
| Pd_Score Bucket | High | 58.3%              | 5.6%      |
|                 | Low  | 2.8%               | 33.3%     |

Source: Author's Analysis

### 7.6.2 K-Mean Cluster

To ascertain the spatial relationship of the product score against export market score a K-mean cluster approach is utilized. The central idea is to inherently capture the distribution of products across companies exporting to various destination. K-mean algorithm is an iterative algorithm that tries to partition the dataset into pre-defined distinct non-overlapping subgroups (clusters) where each data point belongs to only one group. At first two variables which are taken to classify the dairy units are the “Export Market Score” and “Export Product Score” (high export market score indicates popular/important/primary market destination and high export product score indicates popular/important/primary products which has high demand). K-mean clustering is done to identify if there is any pattern amongst the dairy units in terms of export markets or not.

Standardized values for Export market and export product score is used to identify the clusters. Maximum 10 iterations are used. 4 cluster models (2-5) are tested to arrive at the final model. After a thorough analysis, 3 cluster groups are identified. The results of which are presented in Table 7. 21 and Table 7. 22.



Table 7. 21: Iteration history for K-mean Cluster-Export Market & Product Score

| Iteration History |                           |       |       |
|-------------------|---------------------------|-------|-------|
| Iteration         | Change in Cluster Centres |       |       |
|                   | 1                         | 2     | 3     |
| 1                 | 1.240                     | 1.332 | 1.094 |
| 2                 | .000                      | .052  | .025  |
| 3                 | .000                      | .000  | .000  |

Source: Author's Analysis

| ANOVA              |             |    |             |    |        |      |
|--------------------|-------------|----|-------------|----|--------|------|
|                    | Cluster     |    | Error       |    | F      | Sig. |
|                    | Mean Square | df | Mean Square | df |        |      |
| Z score (EM Score) | 13.944      | 2  | .492        | 51 | 28.320 | .000 |
| Z score (PE Score) | 8.921       | 2  | .689        | 51 | 12.940 | .000 |

Source: Author's Analysis

F-Ratio given in the above table signifies the significance of the variable used to determine the clusters. Three distinguished clusters can be identified using K-mean cluster analysis Figure 7. 8. The first cluster is of those dairy units which has high export market score i.e. sending to important markets and high export product score i.e. exporting the popular or high demand products. But there are only handful of such companies. The second distinct cluster is of dairy units which are sending to secondary product (low export product score) to important markets (high export market score). The third cluster features units which sends primary products (High export product score) to secondary markets (low export market score).

Table 7. 22: Validation check for K-mean cluster (3)-Export Market and Product Score

Multiple Comparisons

| Dependent Variable |   |   | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------------|---|---|-----------------------|------------|------|-------------------------|-------------|
|                    |   |   |                       |            |      | Lower Bound             | Upper Bound |
| Z score (EM Score) | 1 | 2 | .75634423             | .39226084  | .178 | -.2147031               | 1.7273916   |
|                    |   | 3 | 2.04358753*           | .37091320  | .000 | 1.1253866               | 2.9617885   |
|                    | 2 | 1 | -.75634423            | .39226084  | .178 | -1.7273916              | .2147031    |
|                    |   | 3 | 1.28724330*           | .21273331  | .000 | .7606189                | 1.8138677   |
|                    | 3 | 1 | -2.04358753*          | .37091320  | .000 | -2.9617885              | -1.1253866  |
|                    |   | 2 | -1.28724330*          | .21273331  | .000 | -1.8138677              | -.7606189   |
| Z score (PE Score) | 1 | 2 | 2.16032600*           | .46414852  | .000 | 1.0113197               | 3.3093323   |
|                    |   | 3 | 1.24781134*           | .43888860  | .019 | .1613363                | 2.3342863   |
|                    | 2 | 1 | -2.16032600*          | .46414852  | .000 | -3.3093323              | -1.0113197  |
|                    |   | 3 | -.91251467*           | .25171988  | .002 | -1.5356508              | -.2893785   |
|                    | 3 | 1 | -1.24781134*          | .43888860  | .019 | -2.3342863              | -.1613363   |
|                    |   | 2 | .91251467*            | .25171988  | .002 | .2893785                | 1.5356508   |

\*. The mean difference is significant at the 0.05 level.

Source: Author's Analysis

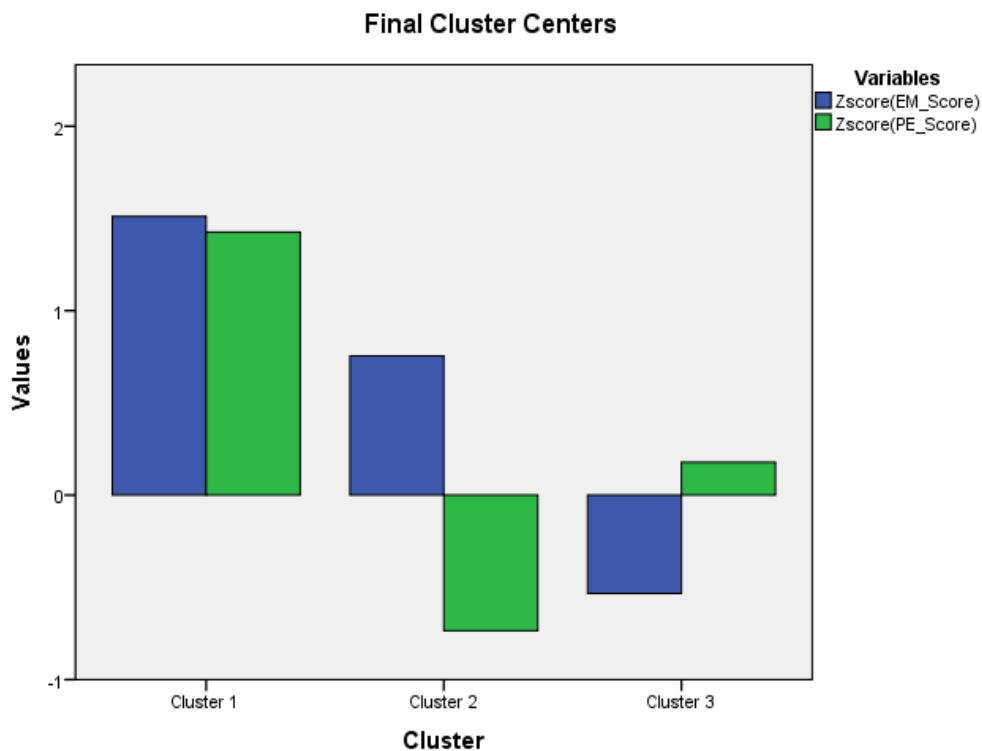


Figure 7. 8: Visual representation of cluster based on export market and exported product score

K-mean cluster analysis is done to find out distinct groups in terms of export market coverage and export product coverage. High export market coverage indicates presence in more than 2-3 foreign markets. Similarly, high export product coverage indicates exports of a greater number of products by Indian dairy units. Distinct clusters would help to identify if dairy units are following any pattern when it comes to product and market coverage. The final results of K-mean cluster analysis are given in Table 7.23 and Table 7.24.

*Table 7.23: Iteration history for K-mean Cluster-Export Market & Product Coverage*

| Iteration History |                           |       |       |
|-------------------|---------------------------|-------|-------|
| Iteration         | Change in Cluster Centers |       |       |
|                   | 1                         | 2     | 3     |
| 1                 | 0.909                     | 1.14  | 0.844 |
| 2                 | 0.281                     | 0.527 | 0.102 |
| 3                 | 0.21                      | 0     | 0.194 |
| 4                 | 0                         | 0     | 0     |

#### ANOVA

|                       | Cluster     |    | Error       |    | F      | Sig. |
|-----------------------|-------------|----|-------------|----|--------|------|
|                       | Mean Square | df | Mean Square | df |        |      |
| Z score (EM Coverage) | 10.986      | 2  | .608        | 51 | 18.057 | .000 |
| Z score (PE Coverage) | 19.635      | 2  | .269        | 51 | 72.928 | .000 |

*Source: Author's Analysis*

4 iterations (Table 7.23) have identified 3 distinct clusters. The significance of the two variables used i.e. Export market coverage and export product coverage are given in the above ANOVA table. To check the validation of this 3 cluster a multiple comparison amongst the variables and the cluster is given in Table 7.24. However, the standardized score of Export Market coverage is not very significant in distinguishing cluster 1 and 3.

Table 7. 24: Validation check for K-mean cluster (3)-Export Market and Product Coverage

Multiple Comparisons

| Dependent Variable    |   |   | Mean Difference (I-J) | Std. Error | Sig.  | 95% Confidence Interval |             |
|-----------------------|---|---|-----------------------|------------|-------|-------------------------|-------------|
|                       |   |   |                       |            |       | Lower Bound             | Upper Bound |
| Z score (EM Coverage) | 1 | 2 | -2.82008210*          | .48005355  | .000  | -4.0084615              | -1.6317027  |
|                       |   | 3 | -.06872548            | .22052935  | 1.000 | -.6146490               | .4771981    |
|                       | 2 | 1 | 2.82008210*           | .48005355  | .000  | 1.6317027               | 4.0084615   |
|                       |   | 3 | 2.75135662*           | .47304997  | .000  | 1.5803147               | 3.9223986   |
|                       | 3 | 1 | .06872548             | .22052935  | 1.000 | -.4771981               | .6146490    |
|                       |   | 2 | -2.75135662*          | .47304997  | .000  | -3.9223986              | -1.5803147  |
| Z score (PE Coverage) | 1 | 2 | -1.11744848*          | .31934576  | .003  | -1.9079935              | -.3269035   |
|                       |   | 3 | 1.50277554*           | .14670262  | .000  | 1.1396111               | 1.8659400   |
|                       | 2 | 1 | 1.11744848*           | .31934576  | .003  | .3269035                | 1.9079935   |
|                       |   | 3 | 2.62022402*           | .31468676  | .000  | 1.8412124               | 3.3992356   |
|                       | 3 | 1 | -1.50277554*          | .14670262  | .000  | -1.8659400              | -1.1396111  |
|                       |   | 2 | -2.62022402*          | .31468676  | .000  | -3.3992356              | -1.8412124  |

\*. The mean difference is significant at the 0.05 level.

Source: Author's Analysis

Final Cluster Centers

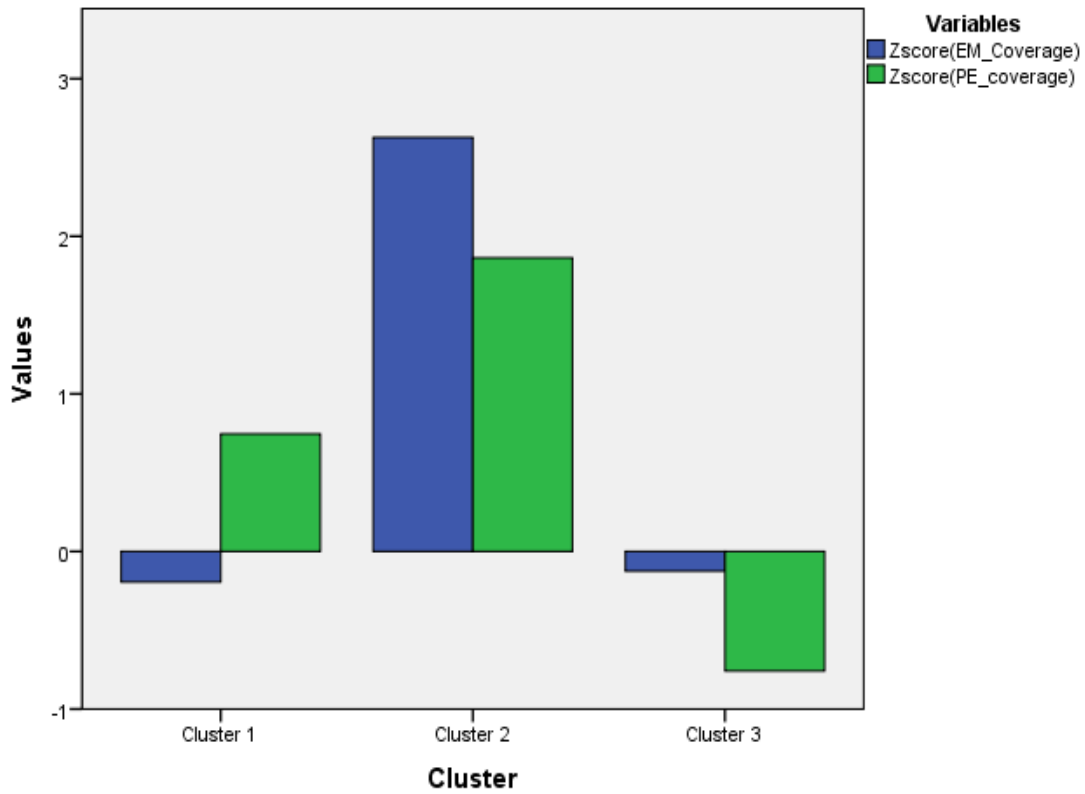


Figure 7. 9: Visual representation of cluster based on export market and exported product coverage

The 3 clusters can be observed in Figure 7. 9. The first cluster is representing Low export market coverage and high export product coverage, which means that these are those dairy units which are sending various export products but to few export markets only. Cluster no 2, belongs to dairy units which sends various dairy products to a greater number of markets. But there are only few units in this category. Cluster no 3 represents units which have low coverage both in terms of product and market. This type of units are the intermittent exporters and not consistent in exporting products.

To increase the export market potential for dairy product it is not only necessary to export to important and greater number of markets but also to export greater number of dairy products which has global demand. To identify and cluster the dairy units better K mean clustering is also done taking all the four variables together; Export market & export product score and Export market & product coverage. In this case, after 5 iterations, 3 clusters have emerged. The results are given in Table 7. 25 and

Table 7. 26. The variable taken to identify the number of clusters are significant and the results are given in the ANOVA table. Similarly, for validation a cross comparison (refer Table 7. 26) is done between the variables and each cluster. There are few discrepancies, in terms of the product export score representing the cluster. Since this is the best fit therefore, we retain this 3-cluster model for further analysis and interpretation.

*Table 7. 25: Iteration history for K-mean Cluster based on Export Market & Product Score and Export Market & Product Coverage*

| <b>Iteration History</b> |                                  |          |          |
|--------------------------|----------------------------------|----------|----------|
| <b>Iteration</b>         | <b>Change in Cluster Centres</b> |          |          |
|                          | <b>1</b>                         | <b>2</b> | <b>3</b> |
| 1                        | 1.790                            | 1.715    | 2.023    |
| 2                        | .405                             | .173     | .000     |
| 3                        | .131                             | .066     | .000     |
| 4                        | .313                             | .105     | .000     |
| 5                        | .000                             | .000     | .000     |

| <b>ANOVA</b>          |                    |           |                    |           |          |             |
|-----------------------|--------------------|-----------|--------------------|-----------|----------|-------------|
|                       | <b>Cluster</b>     |           | <b>Error</b>       |           | <b>F</b> | <b>Sig.</b> |
|                       | <b>Mean Square</b> | <b>df</b> | <b>Mean Square</b> | <b>df</b> |          |             |
| Z score (EM Coverage) | 21.629             | 2         | .191               | 51        | 113.221  | .000        |
| Z score (PE Coverage) | 5.676              | 2         | .817               | 51        | 6.950    | .002        |
| Z score (EM Score)    | 17.388             | 2         | .357               | 51        | 48.659   | .000        |
| Z score (PE Score)    | 4.262              | 2         | .872               | 51        | 4.887    | .011        |

Table 7. 26: Validation check for K-mean cluster (3) based on Export Market & Product Score and Export Market &Product Coverage

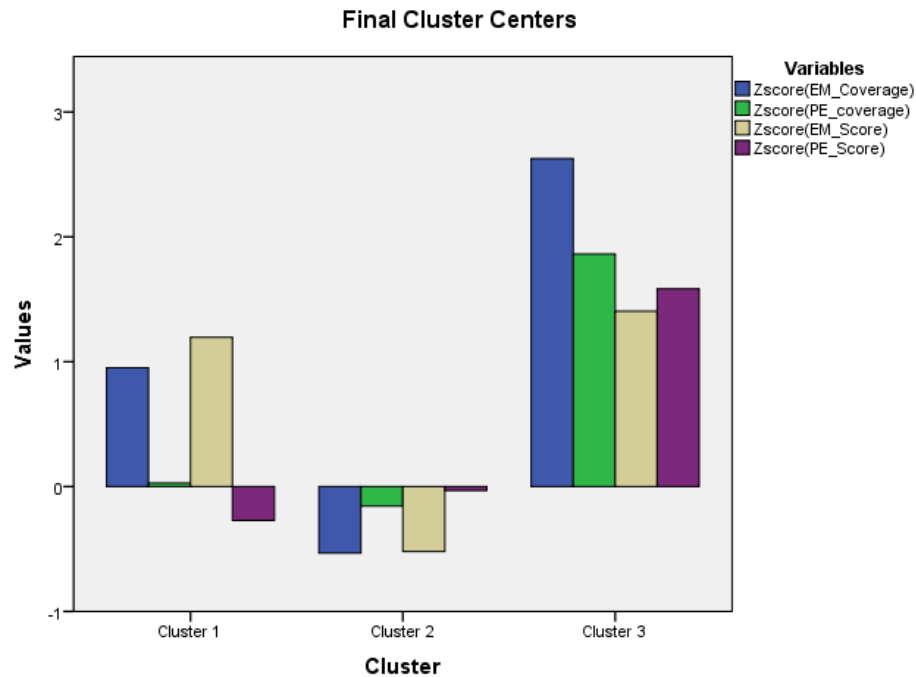
**Multiple Comparisons**

| Dependent Variable    |   | Mean Difference (I-J) |              |           |       | 95% Confidence Interval |            |
|-----------------------|---|-----------------------|--------------|-----------|-------|-------------------------|------------|
| Z score (EM Coverage) | 1 | 2                     | 1.48444585*  | .14043447 | .000  | 1.1367983               | 1.8320934  |
|                       |   | 3                     | -1.67494521* | .27994956 | .000  | -2.3679644              | -.9819261  |
|                       | 2 | 1                     | -1.48444585* | .14043447 | .000  | -1.8320934              | -1.1367983 |
|                       |   | 3                     | -3.15939106* | .26211484 | .000  | -3.8082601              | -2.5105220 |
|                       | 3 | 1                     | 1.67494521*  | .27994956 | .000  | .9819261                | 2.3679644  |
|                       |   | 2                     | 3.15939106*  | .26211484 | .000  | 2.5105220               | 3.8082601  |
| Z Score (PE Coverage) | 1 | 2                     | .18548740    | .29036092 | 1.000 | -.5333052               | .9042800   |
|                       |   | 3                     | -1.83376160* | .57882095 | .008  | -3.2666411              | -.4008821  |
|                       | 2 | 1                     | -.18548740   | .29036092 | 1.000 | -.9042800               | .5333052   |
|                       |   | 3                     | -2.01924900* | .54194605 | .001  | -3.3608442              | -.6776538  |
|                       | 3 | 1                     | 1.83376160*  | .57882095 | .008  | .4008821                | 3.2666411  |
|                       |   | 2                     | 2.01924900*  | .54194605 | .001  | .6776538                | 3.3608442  |
| Z score (EM Score)    | 1 | 2                     | 1.71588644*  | .19207114 | .000  | 1.2404116               | 2.1913613  |
|                       |   | 3                     | -.20751526   | .38288486 | 1.000 | -1.1553522              | .7403217   |
|                       | 2 | 1                     | -1.71588644* | .19207114 | .000  | -2.1913613              | -1.2404116 |
|                       |   | 3                     | -1.92340170* | .35849245 | .000  | -2.8108549              | -1.0359485 |
|                       | 3 | 1                     | .20751526    | .38288486 | 1.000 | -.7403217               | 1.1553522  |
|                       |   | 2                     | 1.92340170*  | .35849245 | .000  | 1.0359485               | 2.8108549  |
| Z score (PE Score)    | 1 | 2                     | -.23920882   | .30005258 | 1.000 | -.9819933               | .5035756   |
|                       |   | 3                     | -1.85543297* | .59814082 | .009  | -3.3361391              | -.3747268  |
|                       | 2 | 1                     | .23920882    | .30005258 | 1.000 | -.5035756               | .9819933   |
|                       |   | 3                     | -1.61622415* | .56003511 | .017  | -3.0025991              | -.2298492  |
|                       | 3 | 1                     | 1.85543297*  | .59814082 | .009  | .3747268                | 3.3361391  |
|                       |   | 2                     | 1.61622415*  | .56003511 | .017  | .2298492                | 3.0025991  |

\*. The mean difference is significant at the 0.05 level.

Source: Author's Analysis

As given in Figure 7. 10, Indian dairy units can be clubbed into three cluster in terms of their export pattern. Most of the dairy units can be represented by cluster 1 and cluster 2 whereas there are very few units are mapped by cluster 3. Cluster 1 are those dairy units which are doing very good in terms of export market and its coverage but not doing good in terms of export product. Similarly, cluster 2 dairy units are unable to explore the right market and the right product categories. Cluster 3 which is represented by handful of dairy exporters are doing great in terms of export markets as well as dairy product categories.



*Figure 7. 10: Visual representation of cluster based on Export Market & Product Score and Export Market & Export Product Coverage*

*Source: Author's Analysis*

It can be concluded, that Indian Dairy units need help not only in identifying the right market but also in identifying the right dairy product to be exported.

### ***7.6.3 Export Market Related Factors***

Further in our analysis we tried to identify the role of various factors which may or may not contribute to increase dairy exports from India. Supply chain factors studied like a) the time taken to transport milk from chilling unit to plant b) presence of cold chain warehouse and transport c) knowledge and use of free trade agreements amongst exporters and non-exporters d) perception regarding the price competitiveness of Indian dairy products e) Lead time to export.

As quality is one of the major concerns therefore time taken to transport milk from chilling unit to plant is one of the major concerns. As per FAO 2002, warm fresh milk should preferably be cooled immediately after milking to preserve spoilage. Cooling at 10 degree centigrade within two hours of milking and to 4

degree centigrade within 3 to 4 hours is essential (FAO WHO 2011). Rapid cooling is the most preferred method (FAO, 2015b)<sup>11</sup>.

Table 7. 27 represents the time taken in transferring the milk from collection centres/milk chilling centres to the plant of production/processing. Irrespective of a dairy unit is exporting or not, it can be seen that 67% of them have a time of 2 to 4 hours which is optimum to keep the milk safe. Though, there are 33% units which takes more than 4 hours for the process. In case of private/public dairy units the 83% of them takes 2 to 4 hours in transferring the milk from chilling centres to production plants. Whereas the 100% of the co-operatives take the optimum 2 to 4 hours in transferring the milk. It can be concluded that, 66.7% of the co-operatives which are in the category of 2 to 4 hours can be motivated or guided for exporting their products.

*Table 7. 27: Time taken from Milk Chilling Centres to Plant*

|                         |                | Whether Exporting |           |
|-------------------------|----------------|-------------------|-----------|
|                         |                | No                | Yes       |
|                         |                | Table N %         | Table N % |
| <b>Milk Chilling</b>    | 2 Hrs to 4 Hrs | 33.3%             | 33.3%     |
| <b>Centre to Plant-</b> | 4 Hrs to 6 Hrs | 0.0%              | 8.3%      |
| <b>Transport Time</b>   | 6 Hrs to 8 Hrs | 25.0%             | 0.0%      |

**BusinessType Private/Public**

|                         |                | WhetherExporting |           |
|-------------------------|----------------|------------------|-----------|
|                         |                | No               | Yes       |
|                         |                | Layer N %        | Layer N % |
| <b>Milk Chilling</b>    | 2 Hrs to 4 Hrs | 33.3%            | 50.0%     |
| <b>Centre to Plant-</b> | 4 Hrs to 6 Hrs | 0.0%             | 16.7%     |
| <b>Transport Time</b>   | 6 Hrs to 8 Hrs | 0.0%             | 0.0%      |

**BusinessType Co-operatives/Producer companies**

|                         |                | WhetherExporting |           |
|-------------------------|----------------|------------------|-----------|
|                         |                | No               | Yes       |
|                         |                | Layer N %        | Layer N % |
| <b>Milk Chilling</b>    | 2 Hrs to 4 Hrs | 66.7%            | 33.3%     |
| <b>Centre to Plant-</b> | 4 Hrs to 6 Hrs | 0.0%             | 0.0%      |
| <b>Transport Time</b>   | 6 Hrs to 8 Hrs | 0.0%             | 0.0%      |

*Source: Author's Analysis*

The next important investigation is related to the cold chain logistics available at dairy unit for processing/storing/transferring. It is evident from the literature and various reports that lack of sufficient or efficient cold chain infrastructure leads to food losses and waste. It is an integral part of growth and development. Table 7. 28 depicts that 45% of the dairy units have their own cold chain warehouse and transport. Whereas 50% of them are dependent on third part cold chain facility. As cold chain

<sup>11</sup> FAO. 2016. Technical and investment guidelines for milk cooling centres, by Moffat, F., Khanal, S., Bennett, A., Thapa, T.B. & Malakaran George, S. Rome, Italy



warehousing and transport is must for maintaining quality and freshness greater number of such facility should be developed and promoted.

*Table 7. 28: Cold Chain Activities across dairy units*

|            |                                     | Whether Exporting |           |
|------------|-------------------------------------|-------------------|-----------|
|            |                                     | No                | Yes       |
|            |                                     | Table N %         | Table N % |
| Cold Chain | Own Warehouse &Transport            | 30.0%             | 15.0%     |
|            | Own Warehouse & 3rd Party Transport | 30.0%             | 20.0%     |
|            | 3rd Party Warehouse &Transport      | 5.0%              | 0.0%      |

*Source: Author's Analysis*

Table 7. 29 depicts that 50 % of dairy units where milk reaches the production plant from 2 to 4 hours have their own warehouse and transport facility.

*Table 7. 29: Relationship of Time take to Plant of production and availability of cold chain facility*

|            |                                    | Milk Chilling Centre to Plant-Transport Time |                |                |
|------------|------------------------------------|--|----------------|----------------|
|            |                                    | 2 Hrs to 4 Hrs                               | 4 Hrs to 6 Hrs | 6 Hrs to 8 Hrs |
|            |                                    | Table N %                                    | Table N %      | Table N %      |
| Cold Chain | Own Warehouse &Transport           | 50.0%  | 0.0%           | 0.0%           |
|            | Own Warehouse &3rd Party Transport | 33.3%  | 16.7%          | 0.0%           |
|            | 3rd Party Warehouse &Transport     | 0.0%   | 0.0%           | 0.0%           |
|            |                                    |  |                |                |

*Source: Author's Analysis*

Free Trade Agreement awareness is another important concern from the policy angle which needs to be investigated. The results of the same is given in Table 7. 30. The percentage of FTA concession amongst the dairy units is almost nil. The FTA findings are in sync with the analysis done in the FTA chapter to understand the increase in export after some of the major agreements.

*Table 7. 30: FTA Awareness amongst Dairy Exporters and non-exporters*

|                               |     | Whether Exporting |           |
|-------------------------------|-----|-------------------|-----------|
|                               |     | No                | Yes       |
|                               |     | Table N %         | Table N % |
| FTA Concession Availed or Not | Yes | 0.0%              | 1.0%      |
|                               | No  | 68.5%             | 30.5%     |

*Source: Author's Analysis*

Perception of price competency of Indian Dairy products in the global as well as the domestic market is given in Table 7. 31. It must be noted that 65% of the dairy units who are not exporting any dairy products have answered negative. In total more than 90% of the dairy units are of the view that the Indian Dairy Products are not price competitive.

Table 7. 31: Perception related to Price Competency

|                         |     | Whether Exporting |           |
|-------------------------|-----|-------------------|-----------|
|                         |     | No                | Yes       |
|                         |     | Table N %         | Table N % |
| <b>Price Competency</b> | Yes | 3.5%              | 2.0%      |
|                         | No  | 65.0%             | 29.5%     |

BusinessType Private/Public

|                         |     | WhetherExporting |           |
|-------------------------|-----|------------------|-----------|
|                         |     | No               | Yes       |
|                         |     | Layer N %        | Layer N % |
| <b>Price Competency</b> | Yes | 4.3%             | 2.6%      |
|                         | No  | 57.8%            | 35.3%     |

BusinessType Co-operatives/Producer companies

|                         |     | WhetherExporting |           |
|-------------------------|-----|------------------|-----------|
|                         |     | No               | Yes       |
|                         |     | Layer N %        | Layer N % |
| <b>Price Competency</b> | Yes | 4.1%             | 2.0%      |
|                         | No  | 75.5%            | 18.4%     |

Source: Author's Analysis

Table 7. 32 Lead Time to Export for Indian Dairy Units

|                 |                    | Whether Exporting |           |
|-----------------|--------------------|-------------------|-----------|
|                 |                    | No                | Yes       |
|                 |                    | Table N %         | Table N % |
| Lead Time (Hrs) | More than 28 Days  | 0.0%              | 33.3%     |
|                 | 36 Hours to 3 Days | 0.0%              | 33.3%     |
|                 | 14 Days to 28 Days | 0.0%              | 25.0%     |
|                 | 3 Days to 7 Days   | 0.0%              | 8.3%      |

Source: Author's Analysis

Lead time is the amount of time between the placement of an order and the receipts of the goods ordered. Long lead time does not need to be a problem if delivery is predictable and demand is stable. However, if there is uncertainty about future demand, long lead time is costly even when the customer knows exactly when the merchandise will arrive<sup>12</sup>.

<sup>12</sup> Nordas, H. K., E. Pinali and M. Geloso Grosso (2006), "Logistics and Time as a Trade Barrier", OECD Trade Policy Working Papers, No. 35, OECD Publishing

### 7.6.4 Export Market Related Problems

The export related marketing problems faced by the dairy exporters are also recorded. There are total 12 types of export market problems which has been recorded. The most common problem is related to incompetent price. 23% of exporters have expressed concern related to competitive environment specially wrt price. 13% of them also face difficulty in timely delivery of export orders and transportation. It is also to be noted that 10% of the people have mentioned that they have difficulty in securing new orders. The details of other export market problems are given in Table 7. 33.

*Table 7. 33: Export Market Problems faced by Dairy Exporters in India*

| S. No | Export Market Problems  | Percentage of Dairy exporters |
|-------|---|-------------------------------|
| 1     | Unable to compete with the lower prices of competitors                                      | 23%                           |
| 2     | Difficulty in timely delivery of export order due to delays in transportation and logistics | 13%                           |
| 3     | Difficulty in Securing new orders   | 10%                           |
| 4     | Difficulty in timely sourcing/procurement and production                                    | 10%                           |
| 5     | Difficulties in sourcing good quality raw materials   | 8%                            |
| 6     | Difficulty to compete with the Innovative products in International Markets                 | 8%                            |
| 7     | Non-Tariff barriers in the destination country  | 8%                            |
| 8     | Rejection in importing country due to quality issues  | 8%                            |
| 9     | Tariff barriers in the destination country  | 6%                            |
| 10    | Rejection in importing country due to Packaging/ Labelling issues                           | 4%                            |
| 11    | Bad Perception on Indian Dairy products in International Markets                            | 2%                            |
| 12    | Rejection in importing country due to Contaminates  | 2%                            |

*Source: Author's Analysis based on Primary Survey*

Indian Dairy exporters are facing a wide array of Marketing Related Issues in the International Markets. A quick summery of these issues can be depicted as Difficulty in Securing New Orders, Rejection in Importing Country due to packaging labelling; Quality and contaminants. Other types of issues consists of; Difficulty in timely sourcing procurement and production, difficulties in sourcing good quality raw materials, frequent cancellation of orders , Difficulty in timely delivery of export orders due to delays in transportation and logistics, tariff and Non-Tariff barriers in destination country, unable to compete low price offerings of competitors, difficulties to compete with innovative products in international markets, Bad perception of Indian dairy products in the international markets etc.

Despite 76% respondents possess milk quality testing laboratory with in the business, majority continue to face quality issues in international markets. Some of the major issues are lack of proper cold chain reduces the milk quality from procurement to production., antibiotic residues and mycotoxins (Such as Afla-toxins) are the major hindrances while exporting to important markets. Most of the respondents felt that it is difficult to control alfa-toxin levels in the milk because they are coming from cattle feeds. Another major issue is adulteration in milk and milk products. Prevalence of FMD, issues in traceability, stringent regulations on shelf life of dairy products is posing as a barrier to market.



*Figure 7. 11: Domestic Survey Insights*  
*Source: Author's Compilation based on Primary Survey*

According to the ground level responses obtained from the primary survey, major reasons for incompetent prices for dairy products are : high raw material costs, high logistics cost, export documentation cost,

overheads cost, inefficient price discovery mechanism, over production in international markets causing price drop, high cost for quality compliance and certification, high laboratory test cost etc.

Various issues prevailing in international trade of dairy products as per the primary survey responses can be understood from Figure 7. 11.

### 7.7 International Sample Characteristics

The domestic dairy market has a greater number of products than what India exports to the foreign markets. There are various sweets like Gulab Jamun, Mysore Pak, Peda etc which are popular amongst Indians but do not have substantial presence in the international market. The major products which has featured from the domestic survey that India is exporting are Ghee and SMP (refer Figure 7. 12 ). This observation is also in sync with our secondary data analysis.

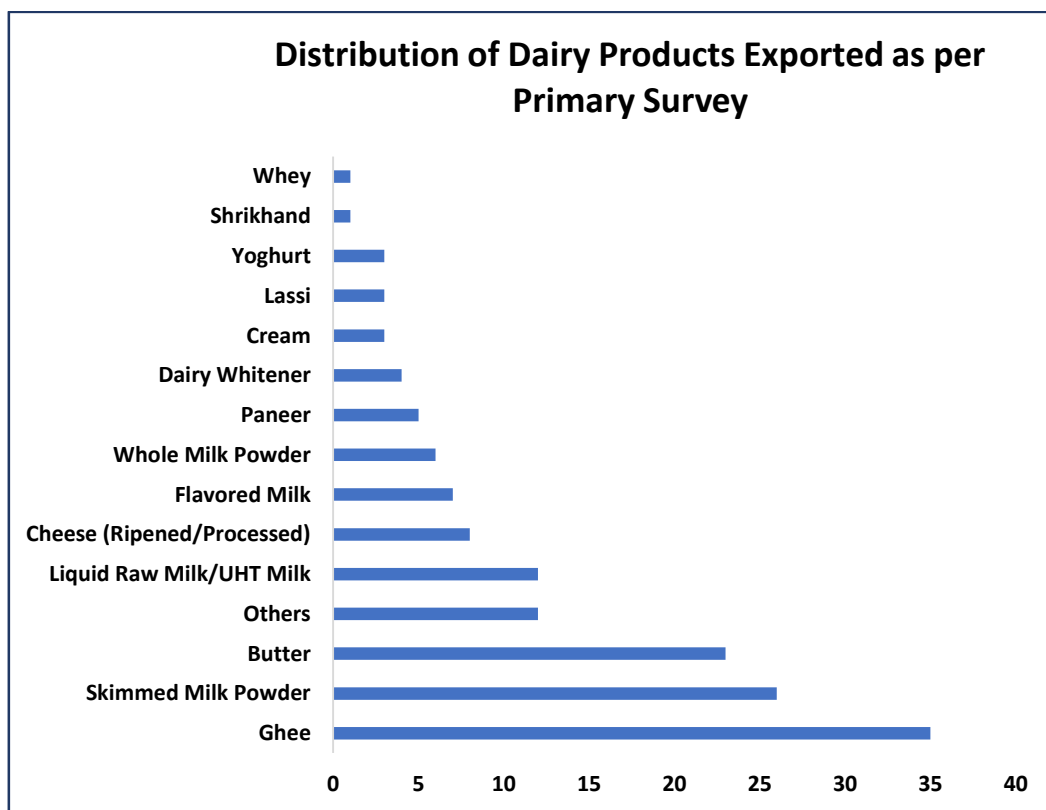
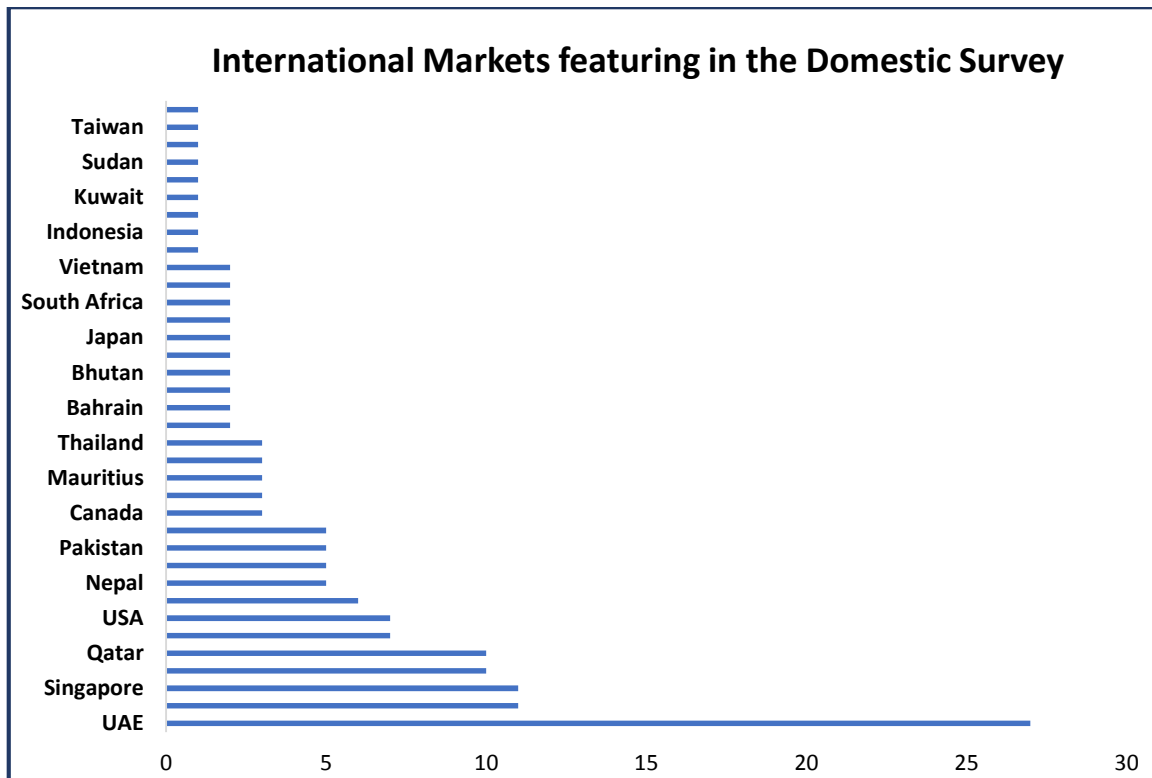


Figure 7. 12: Distribution of Dairy Products Exported  
Source: Author's Analysis based on Primary Survey

There are 36 markets that is featuring in the domestic survey. United Arab Emirates, Singapore, Qatar and USA are the top markets where Indian dairy products are getting exported. The frequency distribution is given in Figure 7. 13.



*Figure 7.13: International Markets featuring in the Domestic Survey  
Source: Author's Analysis based on Primary Survey*

International responses are collected using mixed variety of methods; like personal visits to Indian High Commission Abroad, Personal visits to Foreign High Commission in India, Personal Visit to various countries, Video Conferencing, Telephonic Conversation and Email/online. The details of the same in given in Table 7. 2 and the summary of primary insights captured from various region is given in Table 7. 34. The following issues were discussed by means of semi-structured interviews to understand the Dairy Industry abroad:

1. The Dairy Industry Structure
2. Price Competency Related
3. Non-Tariff Measures
4. Supply chain related problems
5. Marketing related problems
6. Best Practices and policy related

## ***7.8 International Survey Insights***

### **Sri Lanka**

Sri-Lankan Dairy industry is in the form of co-operative set up. The Milk board is the major player which supplies milk to the processing units. Like India, the unorganized sector plays an important role, specifically catering to the needs of the rural population. Despite big companies like Fonterra, the market share of the local player is more. Though Sri Lanka has FTA India, it imports milk from Australian, New Zealand, Europe and USA.

The importing standards are high due to the quality issues faced by the country in past. They are also ready to pay higher price for international quality standards. Indian dairy products are not preferred due to quality reasons. The perception that Indian dairy products don't satisfy global quality standards (Codex Quality standards) is strong.

In Sri Lanka yoghurt and curd are considered as a desert. The prices of these products from local suppliers are cheaper than the foreign importers.

### **New Zealand:**

Approximately 3% of the world's milk is produced in New Zealand. Whereas the country falls into the category of the leading dairy exporters in the World. Consumers in New Zealand focus on quality and standard of dairy products at every stage of supply chain, practising step by step quality control as follows:

- Ensure year-round provision of fresh green fodder for the cows. This helps in producing best quality milk and providing a stable source of income for the fodder farmers.
- Creation of a healthy environment for cows, focusing on keeping them disease free. This reduces meaningless usage of antibiotics and somatic cell in milk.
- Incorporation of hygienic practices into the farming system right from milking. This protects milk from losing its value.

New Zealand has recently started a joint venture with an Indian firm in Sonapat Haryana, viz., "Binsar Farms". The motto is to give a choice of real food, by committing to quality and passion to deliver value without dilution by taking the milk directly to consumers' doorstep. Today, Binsar Farm Fresh milk is widely accepted in Delhi NCR; thus encouraging more and more farmers to accept and adopt Binsar Farms' best practices. The joint venture also highlights areas

where India needs to improve, including increase of per cow productivity by ingraining fundamental knowledge and subsequent change into behaviour of farmers at a grass-root level.

## **Singapore**

The Singapore consumers are very conscious about quality of dairy products while choosing between international brands. Raw liquid milk is not allowed to be imported to Singapore. Some of the documentary requirements for the import of dairy products from food and mouth disease (FMD) affected countries are:

1. Submission of documentary proof that dairy products are manufactured in premises regulated by competent authority.
2. Submission of health certificate (every consignment) that pasteurized liquid milk (i) produced using milk ingredients originating from FMD free countries; (ii) has been pasteurized by heating at a minimum temperature of 72-degree Celsius for a minimum of 15 seconds or an equivalent process.
3. Health certificate should include: Description of the products including brand name and nature of product; Quantity in the appropriate units; Lot identifier and date of production; Lot identifier and date of production; Name and address of the manufacturer or the processing establishment; Name and address of the importer or consignee; Name and address of the exporter or consignor; Country of dispatch; Country of destination.

Fat content and weight gain is a significant key concern behind the barriers to dairy products consumption in the country. Consumers in Singapore considered milk as a high-fat food with a fat content ranging from 15 to 46%, when the actual fat content is less than 4% and massively overestimated the percentage of fat content within the full-fat milk category.

As the market for consumer-oriented products is open and easily accessible, there is quick entry for new comers with intense competition for exporters in some of the consumer product categories. Major competing countries in this space include Australia, New Zealand, EU, Brazil, China, Malaysia, Indonesia and Thailand. Singapore's now evident multi-track market is creating challenges for products that are commodities, poorly differentiated or not well supported by marketing activities in retail channels.

In dairy, Singapore imports from New Zealand, Australia, Thailand, France, USA and export to Japan, Thailand, and Malaysia. The retail milk price is 2.18\$ per litre. Most preferred products are yoghurt, cheese and milk.



Singapore is almost entirely dependent upon imports for all of its food requirements with virtually no local agricultural production. Local dairy companies are strong competitors and have brand/name familiarity with the domestic consumers. Local brands include Magnolia, Farmhouse, Daisy (F&N), Meiji (Meiji Co. Ltd.).

## **Myanmar**

The primary investigation surveyed the two major problems of Myanmar Dairy Industry:

- *Product storage problem*- Advanced technology needed for long term storage products is not available in Myanmar.
- *Power supply problem*. Inadequacy of power to supply to remotely located dairies

Although, Myanmar has a good image and more trust on Indian products compared to products from other importers, the primary survey investigated the problems with Indian dairy products in Myanmar including:

- *Marketing*- India should promote dairy brands in Myanmar because people are not aware of Indian dairy brands.
- *Branding* is needed for selling dairy products in Myanmar.
- *Money Transaction*- India should have an easy mode of international Payments with Myanmar.

The country imports from New Zealand, Australia, Malaysia and export to Singapore, Thailand, and China. The consumer buying Prices of raw milk is .80-1.28 €/kg. Most preferred products are UHT milk, condensed milk, evaporated milk, butter, cheese. The lead export and import bank in Myanmar is Myanmar Investment and Commercial Bank (MICB) and Myanmar Foreign Trade Bank (MFTB). The ASEAN-India is the free trade agreement between India and Myanmar.

Department of Food and Drug Administration (FDA) is Myanmar's food safety regulatory body, which oversees the safety and quality of food, drugs, medical devices and cosmetics. The Myanmar Dairy Excellence Project (MDEP) goal is to make profitable and competitive Myanmar dairy industry, providing quality livelihoods for farmers, and safe food for consumers.

## **Saudi Arabia**

Dairy industry is well advanced with latest technologies such as monitoring blood levels of cattle in order to facilitate feed control, aiming at optimal yield. Dairy Companies have increased import of high yielding cattle for production of milk. Trade shows such as Horica, Gulf food etc are good platforms for Indian dairy exporters to connect with Saudi based Buyers. Saudi Government is providing incentives to reduce the production costs of legally registered dairies. Government has also put forward regulations on controlling new dairy companies since there is an issue of ground water level depletion where dairy farming is a water intensive activity. Al marai Company has one of the largest cattle farms in the world. There is a large number of Indian populations which consumes variety of dairy products including desi products. Saudi citizens have grown to be more diet sensitive including dairy as important product in their diet. Traditional varieties of cheese such as the halloumi cheese have good demand in the market. Yet only few dairy companies supply that. Labne (a thick variety of Dahi) is also a popular dairy product.

## **Germany**

The primary survey found that the Kempten, Germany have testing and specialized centre for dairy farming and grassland management. Specialized instructors assist Bavarian farmers with identifying and growing the best feeding pasture, making and storing silage, breeding the most profitable cow and keeping her and her young healthy. Such knowledge and skills are essential to being competitive in the Bavarian agriculture and dairy food industries. The German dairy industry faces some production challenges, viz,

1. Environmental constraints – particularly in the North, adding significant costs for manure disposal etc.
2. High land costs – particularly in the North or fragmented land ownership in the South, constraining farm expansion growth
3. Export market access: Not all farmers are located near to processors that are willing to accept more milk. Many of the smaller co-ops have limited access to export markets

Some farmers are waiting for EU quota removal to increase farm size or scale, but many have already made investments. Further investment is likely to be influenced by milk prices

## **Morocco**

Domestic production covers 96% of milk and by-products needs, according to industry professionals. Import therefore represents a marginal share. It mainly serves certain specific needs, particularly via high-end products for the hotel and restaurant sector and some large stores. The Moroccan livestock industry, especially the dairy and red meat sectors, is

undergoing tremendous change, with a marked shift from a traditional extensive system to a modern intensive system thanks to the measures taken by the government under the Green Morocco Plan.

Morocco imports from some countries of Europe like France, Spain, Germany, Belgium and export to Arab countries. Dairy imports are subject to significant taxes and customs duties to protect local production. Quotas and protection levels differ depending on the agreement signed by Morocco with its partners (United States, European Union, Turkey). The major export and import bank in this country is European Bank for Reconstruction and Development (EBRD)

### **Cambodia**

The country majorly imports from Thailand and export to Vietnam, Singapore. Cambodia imports 99% of all its dairy products. Imported milk is filled with additives, sugars and stabilizers compromising nutrition and taste. There is an increasing demand for high quality milk and other dairy products. With negligible local dairy production, Cambodia is almost entirely reliant on imports to serve its market. Bridgat, a regional B2B trading network, puts Cambodia's total dairy imports at \$25 million in 2013. Alternative sources claim the figure is much higher, and purportedly reports shipping over \$40 million of its dairy products to Cambodia in the same year, competing with imported milk from Thailand, France, Australia and New Zealand. The Indian exporters are suggested to look for opportunities to invest in Cambodia by establishing dairy manufacturing, creating dairy cattle farm for domestic supply. Good scope for milk processing and production of milk products and sale in local market. The country is suitable for exporting cheese, because there is no commercial cheese industry in this country.

### **Laos**

The milk they use at Lao Buffalo Dairy is extremely natural, and is free of additives and chemical formulations. They majorly import from US, Thailand. The Trade Agreements between Laos & China and Laos & SEA will facilitate the export of products from Laos into these markets

### **Thailand**

Thailand is the largest producer and exporter of dairy products in the ASEAN. The milk and cream, concentrated or containing added sugar or other sweetening matter, which is used in condensed milk and snack items, is produced by small cooperatives but still the country

continues to import these products to meet the demand. The country still imports around 50,000 tons of powder milk annually. The major export destinations are Cambodia, Laos, and Myanmar. The dairy major authority in Thailand is Dairy Farming Promotion Organization.

The raw milk is currently in short supply therefore, Thailand has to import milk and milk products with a tax system used to protect their own domestic dairy industry. However, in practice, a tax rate for imported powdered milk is just 5% with the condition that importers must first purchase local products before turning to imported products. The Thailand has Free Trade Agreements (FTA) with 17 countries. The Indo-Thai FTA has been signed by both countries to ease trade.

## **Turkey**

According to the Turkish Milk Producers Association, Turkey produces over 20 million tons of milk annually. Nearly 60% of this amount is currently sold through the grey market, which constitutes sale of milk by small establishments, which is not regulated by the Ministry of Agriculture. The remaining 40% of production is being supported by the government through certain subsidiaries. The government is currently strategizing to increase subsidy levels for both local agriculture companies and dairy producers.

Unit prices of drinking milk products increased by around 8-9% in 2013 as a result of a switch to fresh/pasteurised milk and fat-free variants of long-life/UHT milk, which are more expensive than standard milk. In addition, rising costs of milk is expected to have a knock-on effect on retail prices, potentially leading to an increase in retail prices of milk.

Over the second half of 2013, companies in drinking milk products adopted competitive pricing strategies and they engaged in promotional campaigns, such as offering free gifts or free products, for example buy-five-get-one-free. Packaging developments in terms of multipacks of four and six are another common strategy to increase retail sales.

The most preferred products in this country are cheese, whey, bulk and pack milk, SMP.

There is no FTA agreement between Turkey and India. However, India has the opportunity to benefit from discounted tariffs on certain products for export to Turkey by making use of the Generalized Preferences System (GSP) applied by the EU.

## **Ireland**

Ireland follows a Grass-Based Dairy System. However, inadequacy of breeding farms, lack of technicians along with nutrition limitations constraints the production of dairy products. At output end, low milk volume, seasonal fluctuation, lack of dairy product diversification, small and scattered supply of fresh milk, lack of organized market channel and lack of value chain infrastructure are some reasons for inadequate supply of dairy products. The major importing countries are UK, Germany, Netherlands, and France. The retail milk price are 1.08\$.

The major authorities in Ireland are National Dairy Council (NDC) and Irish Dairy Board (IDB). The National Dairy Council (NDC) is a private, farmer-funded marketing agency. Its primary work to promote and protect Ireland's internationally-renowned dairy reputation. The Irish Dairy Board (IDB) is the central export-marketing arm of the Irish dairy industry and a major international exporter of Irish dairy products. The most preferred products are milk, cream, cheese and curd. Bank of Ireland is the major bank that deal in international trade.

## **Bhutan**

The major importing countries for Bhutan are India, New Zealand, Thailand and export destinations are India, Japan. Bhutan's foreign trade was handled by the State Trading Corporation of Bhutan (STC). Most preferred products in Bhutan are milk, butter, Yoghurt, curd. The Bhutan Development Bank Limited is the major bank that deal in international trade. The tariffs rates with India are- General tariff- 50% Preferential tariff with India- 0% Preferential Tariff with SAFTA- 8.10%

## **United Arab Emirates (UAE)**

Harsh desert environment hinders the expansive growth of the dairy industry in UAE. The UAE majorly export to Oman, Saudi Arabia, Yemen, Iran, and Somalia. The Retail Milk price is 1.57\$/litre. The most preferred products are Milk, UHT Milk, Yoghurt, Cheese, curd. The National Bank of Ras Al Khaimah (RAK Bank) is the major bank in UAE. The tariff rates are: Preferential Tariff with MFN including India- 5% and Preferential Tariff with GCC countries 0%

## **Malaysia**

Malaysia has implemented a facility called Dairy Facility Registration that requires foreign producers and exporters of dairy products to apply for registration with the Malaysian Government. According to trade contacts, the Malaysian Government implemented this facility

registration measure to improve the traceability of imported dairy products and to ensure imported dairy products were halal certified. Malaysia is dependent on imports of raw dairy food materials used in food manufacturing since dairy farming is conducted on a limited scale in Malaysia. The exporter of Malaysia faces strong competition from Thailand, Australia, and New Zealand due to their competitive pricing and quality of products.

The most preferred products are Whole Milk Powder, Whey, Non-fat Milk powder. The Export-Import Bank of Malaysia Berhad (EXIM Bank) is the major bank in Malaysia. Malaysia has a free trade agreement with India namely Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA).

There is some certification required in Malaysia like the Halal certification and Dairy Facility Registration. The Food Safety and Quality Division (FSQD) of the Malaysian Ministry of Health (MOH) are charged with implementing and enforcing the law under these statutes, including routine compliance, sampling, inspection, import control and regulation.

The country imports almost all dairy products including non-fat and whole milk powder, whey, and other dairy solids. These imported products are then used to produce sweetened condensed milk, yoghurt, and reconstituted fluid milk, and as ingredients in many other food processing plants.

### **Philippines**

The best practice adopted by Philippines is Herd Build-Up Program. This program aims to expand local dairy production through the import of dairy animals, embryos and equipment, and through the upgrading of local animals to dairy breeds via breeding programs, the establishment of multiplier farms, and the preservation of existing stocks.

The country imports from USA, Australia, New Zealand and export to Singapore, Malaysia, and Vietnam. The retail milk price-1.55\$/litre. National Dairy Authority (NDA) is the agency overseeing and aiding the development of the Philippine dairy sector. Most preferred products are Fluid Milk, Non-fat dry milk, WMP, Cheese, SMP, Butter.

### **Brunei**

Brunei imports from Malaysia, Australia, Singapore and exports to Malaysia and Philippines. India has a Free trade agreement with Brunei namely India ASEAN Agreement.

## **Algeria**

The Ministry of Agriculture (MoA) in Algeria still supports large dairy farms, by granting them land for dairy production and production of pasture. The goal is to move towards fully integrated dairy facilities that produce good quality fresh milk and pasture, as well as milk collection centers and heifer nurseries. To do so, the Ministry of Agriculture has engaged in programs involving land grants to private industrialists and investors to launch the farms.

In addition, the MoA still supports fodder production and irrigation to improve breeding performance and production. The program concerns the use and acquisition of fodder seeds, the production of silage and wrapped fodder. Any farmer integrating forage crops into the production system is entitled to these subsidies.

The dairy sector has always suffered from deficit in fodder and feed production because of climatic conditions, as well as the need for improved genetics. In addition, constraints in animal husbandry and nutrition management still need improvement.

## **Tunisia**

The Tunisian government has adopted a policy that fosters production by setting a minimum price for fresh farm-produced milk, to be paid to the farmer, with collection centres evenly spread over the whole country. France and the Netherlands are the most important partners in supplying Tunisia with dairy products. The main imported products are milk (in various forms), condensed whey and cheese, mostly destined for melting. Major suppliers are France, Italy, Germany and Spain. The farmer gets 766 millimes (Tunisian dollar) per litre of milk, the fixed price from the government. The collection canners that are certified get a premium of 70 millimes (Tunisian dollar) per litre, whereas the processors receive 175 millimes (Tunisian dollar). For the stock of 1 L they get paid 50 millimes per month.

## **Indonesia**

Directorate General for Livestock and Animal Health Services (DGLAHS), Indonesian Ministry of Agriculture (MoA) are major authority controlling dairy import/ export in Indonesia. The most preferred products are milk and cheese — majorly imported from New Zealand, Australia and the U.S., and butter — imported from New Zealand and Netherlands.

All live dairy cattle are imported from Australia, which is the only country with live dairy cattle import protocol with Indonesia.

## **Ethiopia**

Most preferred products in Ethiopia are milk and cream, concentrated or containing added sugar or other sweetening matter and majorly imported from Switzerland, New Zealand, France and Netherlands.

## **China**

The Ministry of Agriculture is the major authority in China for control of dairy import/ export. Most preferred products in China are milk and cream, concentrated or containing added sugar or other sweetening matter, cheese and curd. Major suppliers include New Zealand, Australia, France, USA and Germany.

Post the *melamine incident* of 2008, India banned import of all Chinese milk and milk products, and China retaliated by placing similar ban of import of Indian dairy products into China. On June 14, 2018, the Food and Standards Bureau of India (FSSAI) issued document NO.1-13/FSSAI/DP/2008, which states that the government has extended ban on import of milk and its production from China for one more year.

## **Afghanistan**

The Minister of Agriculture, Irrigation & Livestock is the prime authority in Afghanistan for decision actions wrt food and dairy product manufacture, import and export. The major suppliers are Pakistan (58%), Iran (12%), Ireland (6%), Uzbekistan (5%), and India (4%) and the remaining 15% is derived from other countries.

## **Russia**

The prime authority in Russia is Russian Federation Ministry of Agriculture. Russia majorly imports buttermilk, curdled milk and cream, Yoghurt, *kephir* and other fermented or acidified milk from Belarus, Argentina, Uruguay, Netherlands.

## **Australia**

Australia's dairy industry is highly regarded for its efficient production systems and product and systems innovation. The primary survey results indicate that the imports of milk products into Australia are restricted. Limited imports into the Australian market includes preferred products viz., cheese, curd, butter, milk, cream and whey powder. Australia's major export destinations are Greater China, Japan, Singapore, Malaysia and Indonesia. The national



services body for the Australian dairy industry is Dairy Australia and the leading bank is Commonwealth Bank of Australia.

### **Vietnam**

The largest dairy exporter to Vietnam is New Zealand followed by Singapore, Germany, Thailand and U.S. The products- fats and oils derived from milk, and dehydrated butter and ghee, butter are most preferred products in Vietnam. The country has assigned three ministries, viz., the Ministry of Health (MOH), the Ministry of Agriculture and Rural Development (MARD), and the Ministry of Industry and Trade (MOIT) for the inspection of imported foods.

### **Egypt**

The Regulatory compliances for dairy products export to Egypt include Sanitary Certificate (AMS) for purpose of health certificate, other certification requirements viz., indication of Production Date, Dioxin Analysis, Certificate of Analysis i.e. Analysis demonstrating fat, moisture, plate count, antibiotic presence, and potential pathogen presence. Egypt is banned from exporting to the EU due to the Foot & Mouth Disease (FMD) for many years now.

Egypt main exports goes to Arab countries that consist milk, yoghurt and cheese. The major export destinations are Middle East Countries like Lebanon, Jordan, Libya UAE, Saudi Arabia, Palestine, Bahrain Oman and Kuwait. In Egypt most preferred products are Milk, Cream, Butter, Cheese, Curd, and Whey Powder. The leading bank is African Export Import Bank.

### **Nepal**

The primary survey results indicate that the image and perceived quality of Indian dairy products in Nepal is deemed not up to the mark in comparison to other countries. Nevertheless, India Nepal trade is highly feasible due to geographical proximity and easy payment methods. The most preferred products in Nepal are milk, cream, butter, ghee, cheese and curd. The major trading countries of Nepal are India, Ukraine, Poland, and Belgium. Lakshmi bank limited, Nepal Investment bank, Himalyan and Mega Bank Nepal are leading banks in Nepal. The stakeholders suggest organizing trade fares in Nepal and inviting Nepalese manufacturer to Indian Trade fares.

### **Pakistan**

The major trading partners of Pakistan are United States, New Zealand, France, Ireland, and Turkey. Most preferred products are Milk, cream, whey powder, cheese and curd. The major

challenge faced by Pakistanis exporter and importers are milk safety in formal and informal value chains and inefficient long transport of raw milk.

### **Maldives**

The major trading countries in Maldives are UAE, India, Oman Netherlands and Malaysia and the most preferred products are Milk, Cream, Cheese, Curd, and Buttermilk. The major bank in Maldives is Bank of Maldives, Commercial Bank of Maldives. The FTA in India is preferential tariff for SAFTA countries.

### **Bangladesh**

Nowadays, the Bangladesh government has a strong focus on the development of dairy sector for the latter to achieve self-sufficiency by increasing milk production with acceptable quality. The Export promotion Bureau of Bangladesh is the governing agency in the nation. Primary survey investigated that Pran, Milk Vita, Igloo, Aarong, and Farm Fresh are major trading agencies in Bangladesh.

The major exporting destination are New Zealand, Australia, Denmark, Czech Republic Belgium, India and it imports from New Zealand, India Australia, Denmark, and Ireland. The most preferred product in Bangladesh is milk and the price of 1 litre (1 qt.) of whole fat milk in Dhaka is Taka 79. The major challenge faced by this nation is the Adulteration by Toxins. The milk is adulterated with antibiotics like Oxytetracycline, Enrofloxacin, Ciprofloxacin and Levofloxacin.

### **Qatar**

In Qatar the Baladna Food Industries is the largest producer of dairy products. Qatar used to import nearly 98 percent of its dairy products before June 2017 majorly from Saudi Arabia and UAE. The Baladna Food Industries keep their animals in air-conditioned shed farms to overcome the high temperature and attaining greater productivity. The major importing countries are Netherlands, Turkey, Denmark, France and Omen. Afghanistan is the first nation to which they are exporting. The most preferred products are white milk, cheese, laban, Yoghurt & curd, and butter & clarified butter. Ministry of Public Health is the certification authority in this nation.

## **Kuwait**

The Kuwaiti Danish Dairy Company is the major trading partner in Kuwait. The dairy industry in this nation is completely computerized in accordance with the latest farm technologies and the cows are fed by automatic foragers that feed them within 5 minutes.

Major countries exporting to Kuwait are Iraq, Saudi Arabia, Qatar, Jordan and Bahrain and importing countries are Saudi Arabia, Netherlands, New Zealand, Australia, and Turkey. The price of 1 litre (1 qt.) of whole fat milk in Kuwait City is Rs133 (Dinar 0.568). The most preferred products are white milk, cheese, laban, yoghurt & curd, and butter & clarified butter. SMP, butter, ghee are major exported products of this nation. The Kuwait Chamber of Commerce and Industry (KCCI) is the certification authority.

## **Bahrain**

Dairy products made of cow milk is popular in this country. Al Marai (Saudi Arabia brand) is one of the popular brands at Bahrain. The major export destinations are Saudi Arabia, UAE, and Kuwait, Iraq and Oman and importing from Saudi Arabia, Netherlands, New Zealand, Turkey and USA. Most preferred products are flavoured white milk and laban. They export products like SMP, butter, ghee.

## **Iran**

The Iran Dairy Industries Society (IDIS) is the major governing agency in this nation. The price of milk is 1 litre (1 qt.) of whole fat milk in Tehran is Rs 73. The major export destinations are Russia, Iraq and Afghanistan. Products are also exported to Pakistan, Turkmenistan, Tajikistan, Azerbaijan, Kuwait, Qatar, Malaysia, Thailand, the UK, Canada, Austria, Lebanon, Syria and Georgia.

Iran majorly imports from UAE, Turkey, New Zealand, Netherlands, Belgium and Germany. The survey examined that the most preferred products in this country are cheese, milk, Yoghurt, powder and cream. The country exports Yoghurt, cheese, milk, cream and ice cream. Major suppliers in Iran are Kalleh Dairy Co, Pegah Dairy Co and Sahar Dairy Industrials Co.

It is noticeable that Iran has 100 % self-sufficiency in milk. Therefore, the government of Iran and the dairy sector of this nation are aiming at increasing their exports of dairy products.

Table 7. 34 Summary of International Insights

| Region wise Insights: Issue Specific |  |  |   |   |
|--------------------------------------|--|--|---|---|
|                                      | Asia   | Middle East  | Africa  | Europe/Oceania  |
| <b>NTM/TBT related</b>               | <ul style="list-style-type: none"> <li>▪ Malaysia implemented a system called Dairy Facility Registration which requires Malaysian authorities to visit Indian dairy plants for inspection. This new move is criticized by Indian dairy exporters due to the time-consuming process involved.</li> <li>▪ In Neighbouring Myanmar, majority of the consumers are not aware of Indian dairy brands.</li> <li>▪ The government of Vietnam has required a certificate of HACCP or good manufacturing practices (GMPs), or equivalent documentation for food safety/hygiene purposes as a condition for initial import of dairy products.</li> <li>▪ Adulteration by Toxins like milk with antibiotics like Oxytetracycline, Enrofloxacin, Ciprofloxacin and Levofloxacin is an issue faced by dairy importers in Bangladesh.</li> <li>▪ Nepalese dairy importers have a perception that Indian Dairy products does not adhere to International quality standards.</li> <li>▪ Sri-Lanka has set the quality standards high for dairy, which makes most Indian dairy products unable to enter their markets</li> </ul> | <ul style="list-style-type: none"> <li>▪ UAE based buyers hesitates to import from India whenever quality and origin of the re-exported products are not approved or subject to restriction in the third country.</li> <li>▪ Some Importers in the region even felt that product quality from same Indian Supplier varies from consignment to consignments.</li> <li>▪ Importers in UAE felt Indian dairy products does not adhere to international quality standards when compared with those products from Europe</li> </ul> | <ul style="list-style-type: none"> <li>▪ Government of Algeria often Imposes temporary ban for import of agricultural commodities. In the past, the ban included fluid milk (0401), Yoghurts and buttermilk (0403), butter and dairy spreads (0405), cheeses (0406).</li> <li>▪ Exports to Egypt requires hefty documents such as Health certificate, indication of Production Date, Dioxin Analysis, Analysis demonstrating fat, moisture, plate count, antibiotic presence, and potential pathogen presence.</li> </ul> | <ul style="list-style-type: none"> <li>▪ Consultants in Germany felt that lower farm sizes impact the quality of dairy products from India</li> </ul>   |
| <b>Price Competency related</b>      | <ul style="list-style-type: none"> <li>▪ Importers in Nepal thinks that Indian dairy products are overpriced.</li> <li>▪ A special commodity levy (SCL) is charged by Sri Lanka on some imported food items. The SCL rates on basic food items (including dairy products) are changed frequently creating uncertainty for importers.</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Some Importers in UAE feel that Indian exporters quote a price which is amongst the highest in the global market.</li> <li>▪ UAE based buyers also have to pay hefty customs duty for Indian products which is relatively higher.</li> <li>▪ Exporters in Middle East complained that Indian market is not lucrative due to high customs duty in India.</li> </ul>  | <ul style="list-style-type: none"> <li>▪ In Countries such as Algeria and Tunisia, government subsidises domestic milk prices.</li> <li>▪ Government of Morocco Imposes high tariff for imported dairy products in order to protect domestic market.</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Turkish government provides subsidy for both local agriculture companies and dairy producers.</li> <li>▪ EU extends tariff preference to India under GSP (Generalised System of Preference)</li> </ul> |

| Region wise Insights: Issue Specific |  |  |  |   |
|--------------------------------------|--|--|--|---|
|                                      | Asia   | Middle East  | Africa   | Europe/Oceania  |
| <b>Marketing Related</b>             | <ul style="list-style-type: none"> <li>When it comes to South East Asia, farmers in Cambodia is struggling to produce milk in a cost-effective scale mainly due to small but growing domestic market.</li> <li>In Singapore, products that are commodities, poorly differentiated or not well supported by marketing activities in retail channels will struggle to capture market.</li> <li>Malaysian dairy companies import commodity/bulk products which they later use to convert into value added products such as flavoured milk, Yoghurt etc.</li> <li>In Cambodia there is smuggling of dairy products in order to counter high import tariffs</li> <li>Majority of Sri Lankan consumers prefer milk in powder form rather than in liquid form</li> <li>New Zealand and European dairy companies are highly popular in Sri-Lankan Market</li> <li>Local brands are leaders in curd/sour milk segment of Sri Lankan Market</li> <li>Consumers in Myanmar are unaware about Indian dairy brands such as Amul</li> <li>Consumers in Myanmar perceives Indian products as good quality compared to other countries</li> <li>People in Myanmar consumes condensed milk in large quantities</li> </ul> | <ul style="list-style-type: none"> <li>Consumers in countries such as Bahrain, UAE and Saudi prefer Cow milk Products rather than Buffalo Milk.</li> <li>UAE based importers pointed out that supply of Indian dairy products is seasonal/fluctuating which hinders their relationship with suppliers in India.</li> <li>Middle East based customers pointed out that there is no visibility of Indian brands in the market when they would like to import dairy.</li> <li>Even though India is nearer to the region, UAE based dairy buyers prefers EU and New Zealand due to readily availability, Competitive Price and Quality.</li> <li>Middle East based buyers thinks that Indian dairy products lack innovation when compared with other competing countries.</li> </ul> | <ul style="list-style-type: none"> <li>In countries such as Egypt customers prefers EU origin dairy products especially due to perception of good quality.</li> <li>Import opportunity to morocco is limited mainly too high to end products serving certain specific needs for the hotel and restaurant sector and some large stores. Many North and West African Markets are flooded with European dairy products due to colonial relationship and proximity.</li> </ul> | <ul style="list-style-type: none"> <li>Brand image of Indian milk Products are poor.</li> <li>Mixed milk (Cow + Buffalo) non-are not acceptable in most of the developed regions including Europe.</li> <li>Quota removal of milk production in the EU has led to increased supply of milk from European Union.</li> <li>Consultants in Germany feels that India has should ensure maximum economies of scale in order to be cost competent like the dairy producers in Europe</li> </ul> |
| <b>Best Practices/Policy Related</b> | <ul style="list-style-type: none"> <li>Cambodia lacks importers of dry dairy ingredients, as import tariffs relegate the business to smuggling</li> <li>Indian exporters are suggested to look for opportunities to invest in Cambodia by establishing dairy manufacturing, creating dairy cattle farm for domestic supply\</li> <li>In Thailand a tax rate for imported powdered milk is just 5% with the condition that importers must first purchase local products before turning to imported products.</li> </ul>   | <ul style="list-style-type: none"> <li>UAE has great governance, helpful to promote the business, ready to resolve the problems, Better understanding and very fast governing based on online platforms which are benefiting traders</li> <li>Buyers in UAE suggested that there should be a mechanism for making Indian dairy Price in par with international rates.</li> <li>Importer in Middle East suggested that India should constitute a apex body which enforces</li> </ul>  |  | <ul style="list-style-type: none"> <li>New Zealand ensures Creation of a healthy environment for cows, focusing on keeping them disease free. This reduces meaningless usage of antibiotics and somatic cell in milk.</li> <li>New Zealand ensures Incorporation of hygienic practices into the farming system right from milking. This protects milk from losing its value</li> </ul>  |

| Region wise Insights: Issue Specific |   |   |  |                |
|--------------------------------------|---|---|--|----------------|
|                                      | Asia  | Middle East   | Africa   | Europe/Oceania |
|                                      | <ul style="list-style-type: none"> <li>Post the melamine incident of 2008, India banned import of all Chinese milk and milk products, and China retaliated by placing similar ban of import of Indian dairy products into China.</li> <li>New Zealand and Australia Are investing in Sri-Lankan dairy sector</li> </ul> | <ul style="list-style-type: none"> <li>GMP and international quality practices across dairy industry</li> <li>Export/Import documentation in India takes lot of time when compared with the system in Middle Eastern countries.</li> <li>The dairy industry in Kuwait is completely computerized in accordance with the latest farm technologies and the cows are fed by automatic foragers that feed them within 5 minutes.</li> <li>Saudi Arabia has latest technologies such as monitoring blood levels of cattle in order to facilitate feed control, aiming at optimal yield.</li> </ul> |  |                |
| <b>Supply chain Related</b>          | <ul style="list-style-type: none"> <li>Some dairy Importers in Nepal complains that Packaging of Indian dairy consignments are of less quality, causing spoilage and damage of the products during transit.</li> </ul>  | <ul style="list-style-type: none"> <li>Dairy companies in Middle East says that it takes too much time to complete documentation in India while in UAE the products are released by customs authorities with in a day.</li> </ul>   | <ul style="list-style-type: none"> <li>In some African countries there is high level of red-tapeism and bureaucracy which causes delays transportation time</li> </ul> |                |

## 7.9 Conclusion

Primary data collection completed using various tools has provided a different perspective to the already identified opportunities and challenges from the secondary data analysis. Majority of the insights obtained from primary data has close resemblance to the insights from secondary data analysis. This strengthens the integrity of the data that has been analysed so far under this study. Figure 7. 14 depicts the overall insights obtained from the primary survey.

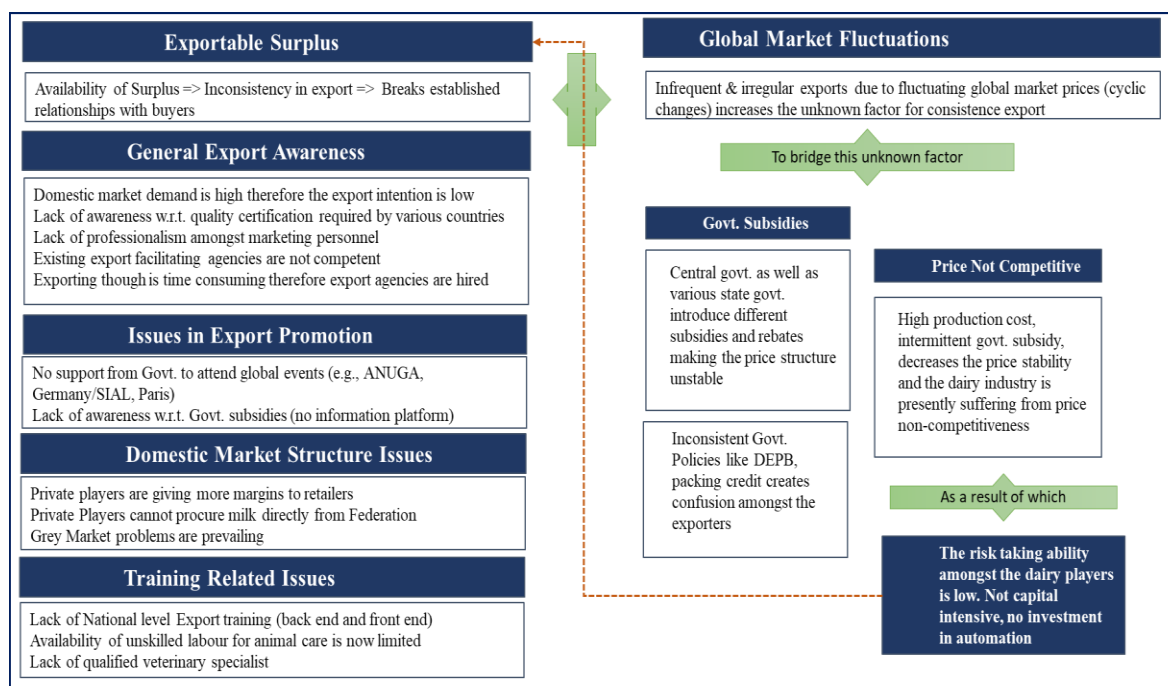


Figure 7. 14: Conclusion from primary survey  
Source: Author's Compilation

Overall, it is observed that private and co-operatives are currently exporting but have higher export potential. To exploit their potential to the fullest a better market portfolio alignment and higher coherence between the offered products and the market potential is recommended. Co-operatives seem to cover a large section of the dairy product portfolio however this coverage is fraught with two problems:

- A big portion of their portfolio are indigenous products which lack awareness and appreciation in the foreign market.
- In cases where the product is known, a strong brand or image is not built around the product. Consequently, a poor consumer perception and reception especially in international markets is observed.

The challenges faced by the Indian Dairy Exporters are majorly in terms of uncompetitive pricing and lack of adherence to quality standards in the international markets.

## **CHAPTER 8: POTENTIAL EXPORT DESTINATION: PRODUCT & COUNTRY PROFILING**

### **8.1 Background**

After three decades of successful efforts to increase milk production, India has become the world's largest milk producer in recent years. In 2018, its production reached 186 million tons (FAO). Besides its large production and consumption of raw milk, India produces and consumes butter and skim milk powder (SMP), and is a marginal trader (imports and exports) of SMP, butter, and whole milk powder (WMP). The latter products are used in dairy processing. India's dairy sector, however, faces rising domestic demand and lacks access to the export markets<sup>13</sup>.

A study of the potential markets for exports aimed at identifying various important markets that India could explore in order to harness its export potential. It is pertinent for India to enter these markets strategically on account of their low trade barriers and closer proximity. After identifying the potential markets based on the indicators like BRCA, TCI, Tariffs and Proximity to India, certain important potential markets have been identified based on their value of imports. Out of these important potential markets, top 5 markets have been chosen for template formation. The objective of creating the templates and country profiles is to enable an in depth understanding of these markets with respect to the important characteristics mentioned in the templates. These characteristics will enable the exporters to better understand the potential markets and in turn will increase the exports to these countries on account of well-informed export decisions.

### **8.2 Introduction**

In the previous chapter, potential export market identification has been carried out for products which have Revealed Comparative Advantage (RCA) greater than 1. Knowing the exportable markets are important because after identifying the possible export products it is crucial to know the customers and their country. These markets have been identified with the help of

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<sup>13</sup> Rakotoarisoa, Manitra, and Gulati, A. "Competitiveness and Trade Potential of India's Dairy Industry." *Food Policy*, vol. 31, no. 3, June 2006, pp. 216–227.



several trade indicators, namely; Bilateral Revealed Comparative Advantage (BRCA), Trade Complementarity Index, MFN tariff and Self Sufficiency Ratio. Further the Non-Tariff barriers (NTMs) of each market have been identified and the markets that fall in the category of high trade score and low NTM have been identified as potential markets for exports from India.

The total imports of markets which have high trade score and low NTM have been considered and the top markets which have the highest import values have been considered for the final analysis to study the potential international market characteristics.

### **8.3 Product Template for Identified Potential Markets**

The following characteristics of the potential international markets have been considered due to their significance to make the exporters aware of the market scenario of the selected potential countries:

**NTM and NTM details:** It is well acknowledged that in order for trade integration to work, the region must (among other things) find an efficacious approach to dealing with NTBs and their trade-inhibiting impacts. In the previous chapter, we have identified the Non-Tariff Barriers and considered those countries as potential countries which have low barriers and high trade score. One of the most important characteristics of a potential market is the number and type of NTMs present there. In order for India to expand the dairy sector in the potential markets, it is important to know the number and type of barriers that exist in the potential market.

**Prices and Pack size:** Another important characteristic that needs to be considered before exporting the products to the potential market is the prices of those products in those markets. Any consumer would not be willing to purchase goods above the average price existing in that market and hence the supplier needs to maintain the same price in the potential market. Similarly, an idea about the pack size in the potential market is also important so as to maintain consistency while supplying to that market.

**Major e-commerce and major super market:** E-commerce and retail trading are the two most important sources of selling in the potential markets. Therefore, a comprehensive knowledge of such platforms is necessary before planning exports to such destinations.

**Export Documentation:** Export documentation refers to the pre-shipment documents prescribed by the exporting country. Export documentation plays a vital role in the flow and movement of goods and services in international markets. This documentation involves heavy

and cumbersome paper work for exporting organizations. Before planning exports to any particular potential market, it is important to have complete documentation ready for a smooth delivery.

**Time and Cost to export:** Milk and milk products are known for their small shelf-life and lower costs. Therefore, it will be profitable to export to only those destinations where lesser time is required to export at a lower cost. Hence knowledge of time and cost to export is very essential in making an export decision.

**Indian Diaspora:** The importance of demography and preferred products is highlighted in the points above, similarly, it is important to know the presence of Indian diaspora in the potential markets if India wants to export to those markets. Indian diaspora will be another segment where the tastes and preferences will be more alike to the products supplied and hence will be a more profitable segment. For example, presence of Indian diaspora will open vistas for supplying traditional Indian dairy products like sweets and ghee.

| Butter: Potential International Market Characteristics |   |  |  |   |   |
|--|---|--|--|---|---|
| Evaluating Criteria                                    | Potential Export Destinations   |  |  |   |   |
|  | China   | Russia   | Qatar  | Japan   | Oman  |
| Per Capita Consumption (Butter)                        | 0.147 Kg/ Capita  | 2.65 Kg/ Capita  |  | 0.55 Kg/ Capita   |   |
| Number of NTMs   | 87  | 31   | 37   | 16  | 12  |
| Tariff/Duty  | 10% (MFN)   | 15%(MFN), 11.25% (GSP)   | 5% (MFN)   | 29.8% + 985 yen/kg (MFN)  | 5% (MFN)  |
| GDT Price Band Lowest/ highest (2015-2020)             | \$2293 per MT / \$6026 per MT   | \$2293 per MT / \$6026 per MT  | \$2293 per MT / \$6026 per MT  | \$2293 per MT / \$6026 per MT   | \$2293 per MT / \$6026 per MT   |
| Pack size  | 5 kg (Wholesale) 25 kg(Wholesale)   | 200g(Retail), 25 kg(Wholesale)   | 250g(Retail), 25 kg(Wholesale)   | 250g(Retail), 25 kg(Wholesale)  | 250g(Retail), 25 kg(Wholesale)  |
| Competitors's Brands                                   | Sunshine Australian unsalted cream butter, EVA cream butter   | Jorgen Lindgaard , Multi Trade Agenc's Clarified Butter  | Anchor (Newzealand), Arla (Denmark), Lurpak (Denmark), President (France)  | KRAFT Butter (USA), Frau Antje Beste Butter (Netherlands), Fonterra (Newzealand), Echire Butter (France)  | Al Rawabi pure buttter (UAE), Anchor (NewZealand),  |
| Major Retailer   | Supermarkets  | Supermarkets   | Hypermarkets   | Super Markets   | Hypermarkets, Supermarkets  |
| Major e-commerce                                       | www.alibaba.com   | globalrustrade.com   | importer.tradekey.com, getit.qa, www.qatcom.com  | www.jetro.go.jp   | www.ubuy.om/, oman.desertcart.com, importer.tradekey.com/   |
| Major Super market                                     | NGS-mart, Lianhua Supermarket, Wumart   | Перекрысток, Azbuka Vkusa, AB DAILY  | Lulu Hypermarket   |   | Lulu Hypermarket  |
| Buying Behaviour                                       | China is one of the largest Importer of butter. Most of the butter imported is consumed by China's baking industry. China's domestic butter production is limited by the relatively high cost of fluid milk and availability of low-priced, high quality imports. | Butter (maslyanitsa) and milk is an important part of the Russian food culture – so much so that Maslyanitsa is the name of an annual festival celebrating the advent of summer. Russia is the 3rd largest consumer of butter in the world | Consumption of Butter and Dairy spreads are expected to increase over the years in middle east and north american market. Political isolation from Neighbouring Saudi Arabia and United Arab Emirates can be leveraged by foreign countries since there is a tradeblockade in force. | Echire Maison de Beurre, the first specialist butter boutique in Tokyo. Set up by France's best-known (internationally, at least) premium butter company, this little outlet has been drawing the kind of queues usually associated with high-end chocolatiers in the runup to Valentine's Day. | Historically, Oman has been quite dependent on the imports of foodstuffs to meet the local demand. Consumption of Butter and Dairy spreads are expected to increase over the years in middle east and north african market. |
| Mode of payment  | Letters of credit and documentary collections   | Advance Payments, 30/70 ( 30 percent due at the time of order/invoice and 70 percent due upon shipment)  | Letters of credit and documentary collections  | Letters of credit , documentary draft (time or sight), open account   | Letter of credit  |
| Gneral Import Documents Required                       | Contract, Commercial invoice, Packing list, Bill of lading, Telex release, Customs import declaration, Terminal handling receipt, SOLAS Certificate   | Acceptance order, Certificate of conformity, Commercial invoice, Consignment note/ CMR waybill, Customs Import Declaration, Transit declaration, Letter from credit cetificate from bank, Packing list, Sales purchase contract,           | Bill of lading, Commercial invoice, Certificate of origin, Packing list, Delivery order, Cargo release order, Import customs declaration, SOLAS certifiante,   | Invoice, Packing list, Bill of lading, Customs import declaration, SOLAS certificate  | Commercial invoice, Certificate of origin, Packing list, Import declaration, Bill of lading, Delivery Order, SOLAS certificate  |
| Cost to Import (US\$/Containerised shipment)           | \$305   | \$ 560   | \$848  | \$382   | \$368   |
| Time   | 48 hrs  | 55 hrs   | 120 hrs  | 51 hrs  | 46 hrs  |
| Indian Diaspora  | 56,020  | 30,560   | 692,039  | 28,717  | 689,145   |

| Cheese: Potential International Market Characteristics |   |   |   |   |  |
|--|---|---|---|---|--|
| Evaluating Criteria                                    | Potential Export Destinations   |   |   |   |  |
|  | China   | Russia  | Indonesia   | Viet Nam  | Kuwait   |
| Per Capita Consumption (Cheese)                        | 0.247 kg/capita   | 5.89 kg/capita  | 0.0923 kg/capita  | 0.069 kg/capita   |  |
| Number of NTMs   | 93  | 31  | 23-57   | 46-50   | 31   |
| Tariff/Duty  | 12%-15% (MFN)   | 15%(MFN), 11.25%(GSP)   | 5% (MFN), 0-4% (FTA;ASEAN)  | 10% (MFN), 0% (FTA;ASEAN)   | 5% (MFN)   |
| Price  | \$7.8 / kg to \$81.6 / kg (President soft cheese)   | \$ 1.85/ kg (other processed cheese) to \$ 90g, 140g, 150g, 200g, 300g, 400g, 1 kg, 1.2 kg  | \$ 7.57 to \$ 21.44   | \$ 10.5 / kg (Spreadable Processed Cheese) to \$ 78g, 110g, 120g, 129g, 125g, 200g, 250g  | \$ 2.95/ kg (Emborg 8 Natural Slices Gouda   |
| Pack size  | 125g, 140 g, 166g, 200g, 220g, 450g, 1 kg, 2 kg   | 90g, 140g, 150g, 200g, 300g, 400g, 1 kg, 1.2 kg   | 108g, 120g,175g, 180g, 200g, 250g,  | 78g, 110g, 120g, 129g, 125g, 200g, 250g   | 140g, 150g, 200g, 226g, 250g, 350g, 453g, 800g, 900g   |
| Competitors's Brand                                    | Anchor, Kraft,Milkana, Suki,Bright,La vache qui rit,Sanyuan,Mainland,Président,Bridel   | Almette,Crème Bonjour,Druzhba,Hochland,Président, Vesely Molochnik, Viola, Yantar, Yantarny,Plavych, 365 dne, Krasnaya Tsena, Gorod Syra, Perekriostok, Savushkin Produkt   | Kiri a la Crème, Laughing Cow, Yummy, Babybel, Cheesy, Dairylea Qeju, Kraft, Meg, Prochiz, Bega Shredded, Bega So Light   | La Vache Qui Rit, Président, Belcube, Chesdale, Vinamilk  | Almarai Spreadable Cream Cheese, American Heritage Pastuerized Cream Cheese Spread,Kraft Philadelphia Cream Cheese Spread, La Vache Qui Rit Sylphide Low Fat Cheese Spread, Président Mozzarella Slices, American Heritage Cheddar Block,Emborg 8  |
| Retailer   | Supermarkets  | Supermarkets  | Supermarkets, Internet Retailing  | Supermarkets  | Hypermarkets   |
| Major e-commerce                                       | www.alibaba.com   | globalrustrade.com, www.wildberries.ru  | www.bukalapak.com, www.shopee.co.id   | www.u-buy.vn, www.lazada.vn   | www.luluhypermarket.com, www.baqala.me, www.kuwailsuk.com  |
| Major Super market                                     | NGS-mart, Lianhua Supermarket, Wumart   | Перекресток,Azbuka Vkusa,AB DAILY   | Hero Supermarket,Super Indo,Foodmart  | Big C   | LULU Hypermarket, Grand Hypermarket  |
| Buying Behaviour                                       | Children's cheese remains the most popular segment in processed cheese. Offering a light cheese taste often supplemented by fruit flavours, providing a source of calcium and offered in fun, cute packaging, processed cheese is often successfully positioned as a snack for children.Unprocessed cheese is less popular. As a result, manufacturers are looking to position unprocessed cheese in relation to the snacking trend, with the introduction of smaller, single-serve formats and an emphasis on qualities such as unprocessed cheese's high protein content. | Hard cheese accounts for more than two thirds of retail volume sales of cheese in Russia, and it is expected to demonstrate moderate volume growth over the near future due to the category's maturity. Processed cheese is the second largest category, but it is expected to continue declining in retail volume terms over the near future. Consumers are tending to switch from processed to hard and soft cheese, since they are looking for more natural products, with this being supported by a rise in disposable incomes as Russia comes out of its recent recession. | Even though consumers are not in the habit of consuming cheese regularly at home., Cheese is simply seeing wider acceptance amongst Indonesians in general, buttressed by the appeal of innovative meals using cheese in the foodservice channel and by rising consumer interest in experiencing various types of cheese due to increased exposure to cheese options on social media. Cream cheese has particularly generated interest in Indonesia, as it is enjoyed in both food and beverages. | Hard cheese accounts for more than two thirds of retail volume sales of cheese in Russia, and it is expected to demonstrate moderate volume growth over the near future due to the category's maturity. Consumers are tending to switch from processed to hard and soft cheese, since they are looking for more natural products, with this being supported by a rise in disposable incomes as Russia comes out of its recent recession. Soft cheese is the smallest of the categories, but it is expected to perform well in both volume and | The dairy industry in Kuwait is characterized by active foreign trade of exports and imports.The relatively lavish lifestyle and poor eating habits of Kuwaitis are costing a fortune to the consumers, in terms of numerous health issues, and obesity and diabetes being the major threats to the population. Recently population in kuwait has developed a concern towards healthy food which compels the marketing of dairy with claims, such as Added-Minerals, No-Fat, etc., in order to gain an edge over other alternative brands. |
| Mode of payment  | letters of credit and documentary collections   | Advance Payments, 30/70 ( 30 percent due at the time of order/invoice and 70 percent due upon shipment)   | Confirmed, irrevocable letters of credit,cash in advance, Wire Transfer   | Letters of credit (L/C's), drafts, and wire transfers   | Cash against Documents (CAD), Letter of Credit (L/C)   |
| General Import Documents Required                      | Contract<br>Commercial invoice<br>Packing list<br>Bill of lading<br>Telex release<br>Customs import declaration<br>Terminal handling receipt<br>SOLAS Certificate   | Acceptance order<br>Certificate of conformity<br>Commercial invoice<br>Consignment note/ CMR waybill<br>Customs Import Declaration<br>Transit declaration<br>Letter from credit certificate from bank<br>Packing list<br>Sales purchase contract  | Bill of lading<br>Delivery order<br>Cargo release order (SPPB)<br>Commercial invoice<br>Insurance documentation<br>Packing list<br>Customs import declaration (PIB)<br>Terminal handling receipts<br>SOLAS certificate  | Bill of Lading<br>Commercial invoice<br>Packing list<br>Certificate of origin<br>Cargo release order<br>Customs import declaration<br>Inspection report<br>SOLAS certificate  | Certificate of origin<br>Cargo release order<br>Terminal handling receipt<br>Commercial invoice<br>Manifest/Bayan<br>Bill of lading<br>Packing list<br>SOLAS certificate<br>Delivery Order   |
| Cost to Import (US\$/Containerised shipment)           | \$305   | \$ 560  | \$544   | \$556   | \$966  |
| Time   | 48 hrs  | 55 hrs  | 186 hrs   | 132 hrs   | 168 hrs  |
| Indian Diaspora  | 56,020  | 30,560  | 107,500   | 3,300   | 929,903  |

| WMP : Potential International Market Characteristics |   |   |  |   |   |
|--|---|---|--|---|---|
| Evaluating Criteria                                  | Potential Export Destinations   |   |  |   |   |
|  | China   | Saudi Arabia  | Indonesia  | Kuwait  | Russia  |
| Per capita Milk Consumption (Kilogram per capita)    | 1.28 kg per capita  | 2.23 kg per capita  | 0.46 kg per capita   | -   | 0.39 kg per capita  |
| Number of NTMs                                       | 166   | 50  | 57   | 31  | 34  |
| Tariff/Duty  | 10% (MFN), 7% FTA: APTA)  | 5% (MFN)  | 5 % (MFN)  | 5 % (MFN)   | 15 % (MFN), 11.25% (GSP)  |
| GDT Prices June 2015 June -2019 (Low/High)           | US \$ 12800-13200 per ton   | \$1419/MT-\$ 2,580/MT   | \$1419/MT-\$ 2,580/MT  | \$1419/MT-\$ 2,580/MT   | \$1419/MT-\$ 2,580/MT   |
| Pack size  | 25 kg   | 25kg  | 25kg   | 25kg  | 25kg  |
| Major E commerce                                     | Alibaba   | haraj.com.sa and souq.com   | Shopee, Lazada, Bukalapak, and Tokopedia   | Amazon, eBay and Aliexpress   | Wildberries, while Citilink, Ozon and Lamoda  |
| Major Competitor Brands                              | Dana, Shaanxi Hongxing Meiling Dairy Co. Ltd.   | Anchor, Nestle Nido, Anelene  | Nestle Lactogen, Indomilk Biokids,   | Kuwait Dairy Co., Kuwait United Dairy Company, The Almarai Company  | Gustiyar, Korovka iz Korenovky, Alekseevskaya, Glavprodukt, Molochnaya Strana, Smeshnaya Korova   |
| Industry Behaviour                                   | In 2018, the total domestic consumption of whole milk powder amounted to 1.65 million metric tons in China, down from approximately 1.87 million tons in the previous year. In 2018, the volume of whole milk powder imported in China amounted to 521 thousand metric tons, up from 470 thousand metric tons in the previous year. China is one of the leading countries in milk production in the world, however, a large amount of dairy products are imported from other countries. | In 2017, it was estimated that about 2.74 million metric tons of milk were produced in Saudi Arabia. In 2017, it was estimated that Saudi Arabia imported about 3.14 million metric tons of milk. | Indonesia's total dairy consumption is 3.8 billion liters, or 3.91 million tons. Approximately 56 percent of consumption is in the form of liquid fresh milk, UHT milk, flavored/fermented milk, evaporated/condensed milk, and cream. The production volume of milk and milk products in Indonesia was forecasted to amount to around 1.538 million metric tons in 2019. The import volume of milk and milk products in Indonesia was forecasted to amount to around 3.2 million metric tons in 2019. | Kuwait dairy products market is projected to be valued at USD 13.5 billion by 2024 while registering a CAGR of 8.13% over the forecast period (2019-2024). The Kuwaiti dairy industry is regulated by the government and strictly adhere to health and hygiene regulations that are similar to the GCC and international standards. The market studied is highly competitive, with local, regional, and international dairy companies. Kuwait Dairy Company is one of the leading players offering dairy products across the country. The company is focusing on increasing its production capacity, in order to alleviate the shortage of dairy products in the country. | Milk and dairy products consumption levels saw a gradual decrease in Russia in the past years, making a six percent reduction in 2017 relative to 2016, in aggregate terms. The share of production consumption of this commodity category was measured at roughly 12 percent of internal consumption in 2017. In 2015, the largest production and inventory volumes were recorded countrywide, measuring at about 30.8 million and 2.12 million metric tons, respectively. |
| Common Mode of payment                               | letter of credit, documentary collections   | letter of credit, documentary collections   | letter of credit, documentary collections  | letter of credit, documentary collections   | letter of credit, documentary collections   |
| General Import Documents required by Importer        | Commercial invoice, Packing list, Bill of lading, Telex release, Customs import declaration, Terminal handling receipt, SOLAS Certificate   | Commercial invoice, Customs declaration, Packing list, Delivery Order, Certificate of conformity, SOLAS certificate   | Delivery order, Cargo release order (SPPB), Commercial invoice, Insurance documentation, Packing list, Customs import declaration (PIB), Terminal handling receipts, SOLAS certificate   | Cargo release order, Terminal handling receipt, Commercial invoice, Manifest/Bayan, Bill of lading, Packing list, SOLAS certificate, Delivery Order   | Certificate of conformity, Commercial invoice, Consignment note/ CMR waybill, Customs Import Declaration, Transit declaration, Letter from the bank certifying opening of letter of credit, Packing list, Sales purchase contract   |
| Cost to Import (US \$/Containerised shipment)        | 305 USD   | 731 USD   | 544 USD  | 966 USD   | 560 USD   |
| Time to Import(Hrs)                                  | 48 hours  | 104 hours   | 186 hours  | 168 hours   | 55 hours  |
| Indian Diaspora                                      | 56,020  | 28,14,568   | 1,07,500   | 9,29,903  | 30,560  |

| <b>Bulk and Pack Milk: Potential International Market Characteristics</b> |   |   |   |
|---|---|---|---|
| <b>Evaluating Criteria</b>  | <b>Potential Export Destinations</b>  |   |   |
|   | <b>China</b>  | <b>Oman</b>   | <b>Russia</b>   |
| <b>Per capita Milk Consumption (Kilogram per capita)</b>                  | 17.37 kg per capita   | –   | 111.14 kg per capita  |
| <b>Number of NTMs</b>   | 98  | 12  | 34  |
| <b>Tariff/Duty</b>  | 15% MFN   | 5% MFN  | 15% MFN, 11.25 % GSP  |
| <b>Price</b>  | \$6.50/ltr to \$20.00/ltr   | \$1.43/ltr to \$1.73/ltr  | \$0.74/ltr to \$1.42/ltr  |
| <b>Pack size</b>  | 236ml, 260ml, 500ml, 950ml, 980ml   | 180ml, 500ml  | 873ml, 930ml, 900ml, 930ml, 970ml, 1000ml   |
| <b>Competitors's Brand</b>  | Bright, Jule, U Best, Yantang, Zhi You  | Al Rawabi Fresh Milk, Almarai Fresh Milk Full Fat   | 365 dney, Domik v Derevne, D, Krasnaya Tsena, Lakomo, Magnit, Moloko, Ostankinskoe  |
| <b>Retailer</b>   | Supermarket   | Hypermarket   | Supermarket   |
| <b>Major e-commerce</b>   | Alibaba   | Amazon, eBay, Aliexpress and Namshi   | Wildberries, while Citilink, Ozon and Lamoda  |
| <b>Major Super market</b>   | Auchan, RT-Mart, Carrefour, Wal-Mart, Tesco, Metro Cash and Carry, China Resources Vanguard.  | Gharbiah Grocery, Grand Hypermarket, Smile Supermarket  | Magnit  |
| <b>Buying Behaviour</b>   | Chinese consumers prefer to buy Mukki Brand long-life milk (UHT milk) with a shelf life of 300 days, available in 200 ml and 1 liter packs. China's UHT milk imports have enlarged almost six times in the last four years, leading to Italian firm Centrale Del Latte d'Italia (CLI) group sealing a deal with Alibaba to increase its sales in china. | According to a Mazoon Dairy Report approximaely 22% UHT milk is consumed by urban omanies and 20% by rural Omanies. | Demand of UHT milk in Russia is growing year by year because of longer shelf life. Other than that, consumers prefer it because they want to spend less time on shopping and to buy larger quantities on hand which means the products have to keep longer. |
| <b>Mode of payment</b>  | Open account, Letter of credit, Cash in advance, Documentary collections, Factoring   | Letter of credit  | Open account, Letter of credit, Cash in advance, Documentary collections, Factoring   |
| <b>Gneral Import Documents Required</b>                                   | Commercial invoice<br>Packing list<br>Bill of lading<br>Telex release<br>Customs import declaration<br>Terminal handling receipt<br>SOLAS Certificate   | Certificate of origin<br>Packing list<br>Import declaration<br>Bill of lading<br>Delivery Orde<br>SOLAS certificate | Certificate of conformity<br>Commercial invoice<br>Consignment note/ CMR waybill<br>Customs Import Declaration<br>Transit declaration<br>Letter from the bank certifying opening of letter of credit<br>Packing list<br>Sales purchase contract             |
| <b>Cost to Import (US\$/Contanerised shipment)</b>                        | 305 USD   | 368 USD   | 560 USD   |
| <b>Time</b>   | 48 hours  | 46 hours  | 55 hours  |
| <b>Indian Diaspora</b>  | 56,020  | 689,145   | 30,560  |

| Whey Powder: Potential International Market Characteristics |   |   |  |   |
|---|---|---|--|---|
| Evaluating Criteria   | Potential Export Destinations   |   |  |   |
|   | Egypt   | Indonesia   | Saudi Arabia   | China   |
| Per Capita Consumption (Whey Powder)                        | 0.000001 kg/capita  | 0.0000037 kg/capita   | 0.0000029 kg/capita  | 0.0000007 kg/capita   |
| Number of NTMs  | 17  | 50  | 48   | 144   |
| Tariff/Duty   | 0% to 2% (MFN)  | 5% (MFN), 0%(ASEAN; FTA)  | 5% (MFN)   | 6% to 20% (MFN)   |
| Price   | \$34.7/ kg -\$51.16/kg  | \$25.7 /kgto \$26.3 kg  | \$22.10 to \$41.75 kg  | \$42.95 /kg to \$62.01 kg   |
| Pack size   | 900g, 1.81 kg, 2.32kg   | 2.3 kg, 300g, 225g  | 1 Poubds, 2 Pounds,5 Pounds, 10 Pounds, 2.5 kg   | 203g, 750g,2.5 g  |
| Competitors's Brand   | Top Secret Whey protein,Organic Nation 100% Isolate whey, Labrada Iso Whey-73Se, Muscletech Nitrotech,  | IronMaxx® whey shake, Gold Standard 100% Whey menggunakan, L-Men Gain Mass  | Optimum Gold Standard 100% Whey, Universal Animal Whey,Dymatize Iso-100, Challenger Nutrition 100% Whey Protein  | Competitor,GymMax,MuscleTech,Optimum Nutrition  |
| Retailer  | Super Markets, Internet Retailing   | Supermarkets, Internet Retailing  | Hypermarkets, Super Markets  | Internet Retailing, Supermarkets  |
| Major e-commerce  | www.maxmuscleelite.com, www.tssegypt.com, www.egypt.souq.com, www.tradekey.com  | www.bukalapak.com/, www.shopee.co.id/, www.suplemen-indonesia.com/,   | www.saudi.souq.com, www.gosupps.com, www.sa.opensooq.com   | www.alibaba.com, https://spiritnu.com   |
| Major Super market  | Carrefour,Kazyon, BESTWAY Supermarket   | Hero Supermarket,Super Indo,Foodmart  | LULU Hyper Market, Hyper Panda, Carrefour  | NGS-mart, Lianhua Supermarket, Wumart   |
| Buying Behaviour  | Egypt has a prosperous body building culture. Whey protein segment in Egypt is growing steadily due to increased in demand of whey based products among the Egyptian population   | Undefined regulatory guidelines and lack of awareness among the consumers restricted the market growth in the country. Though a small segment of population showed interest towards functional foods and infant formula, owing to increased disposable incomes, as a whole, the majority middle class population stayed away from the supplemented diets due to their higher price tags | Healthy lifestyles are being promoted by govt with the aim of increasing the percentage of individuals exercising at least once a week from 13% of the population to 40% as per Vision 2030. Among these efforts are holding the first football and basketball tournaments for women, enabling female students to take physical education classes at schools, allowing women to join the military and the intelligence service, allowing women to enter sports stadia and granting licences for female gyms, causing increased number of female gyms at reduced subscription prices due to higher competition. | Chinese people, including the young middle class, have been swept up by the fitness boom, regarding a healthy lifestyle as a sign of success. In combination with a general increase in interest in nutrition, the rise in physical activity is supporting growth in demand for sports nutrition products such as sports protein powder and protein bars to help in building muscle and increasing stamina. |
| Mode of payment   | Letters of Credit , Wire transferring   | Confirmed, irrevocable letters of credit,cash in advance, Wire Transfer   | irrevocable letter of credit (L/C), Open account, cash in advanced, Documentary collections  | letters of credit and documentary collections   |
| General Import Documents Required                           | Certificate of origin<br>Customs import declaration<br>Commercial invoice<br>Delivery order<br>Cargo release order<br>Packing list<br>Bill of lading<br>Compliance certificate<br>Form 4<br>Receipt of administrative fees<br>SOLAS certificate | Bill of lading<br>Delivery order<br>Cargo release order (SPPB)<br>Commercial invoice<br>Insurance documentation<br>Packing list<br>Customs import declaration (PIB)<br>Terminal handling receipts<br>SOLAS certificate  | Bill of lading<br>Commercial invoice<br>Customs declaration<br>Packing list<br>Delivery Order<br>Certificate of conformity<br>SOLAS certificate  | Contract<br>Commercial invoice<br>Packing list<br>Bill of lading<br>Telex release<br>Customs import declaration<br>Terminal handling receipt<br>SOLAS Certificate   |
| Cost to Import (US\$/Containerised shipment)                | \$ 1554   | \$544   | \$731  | \$305   |
| Time  | 505 hrs   | 186 hrs   | 104 hrs  | 48 hrs  |
| Indian Diaspora   | 3,765   | 107,500   | 2,814,568  | 56,020  |

| Cream: Potential International Market Characteristics |  |  |  |   |   |
|---|--|--|--|---|---|
| Evaluating Criteria                                   | Potential Export Destinations  |  |  |   |   |
|   | Kuwait   | Hong Kong  | Malaysia   | UAE   | Saudi Arabia  |
| Per Capita Consumption (Milk)                         |  |  | 2.75kg/capita  |   | 36.27kg/capita  |
| Number of NTMs  | 31   | 40   | 11   | 67  | 48  |
| Tariff/Duty   | 5% (MFN)   | 0% (MFN)   | 50% (MFN)  | 5% (MFN)  | 5% (MFN)  |
| Price   | \$4.36-\$16.70/kg  | \$4.36-\$18.15/kg  | \$5.38-\$10.27/kg  | \$4.81-\$10.21/kg   | \$2.65-\$9.32/kg  |
| Pack size   | 100g, 1000ml, 125ml, 170g, 180g, 200g, 200ml, 250g, 350g, 397g, 500g, 500ml, 700g, 95g   | 250ml, 241ml   | 200ml, 1000ml  | 100g, 205g, 160g, 200g, 170g  | 200ml, 500ml, 1ltr  |
| Competitors's Brand                                   | President<br>"Puck thick cream"<br>KDD thick cream<br>Elle & Vire<br>Almarai<br>Nestle   | Pauls, President   | Anchor,<br>Arla<br>Emborg<br>Paysan Breton<br>President  | Almarai<br>Elle & Vire<br>Nestle<br>President<br>Puck   | Paysan<br>Puck<br>President<br>Elle & Vire<br>Carrefour   |
| Retailer  | Hypermarket<br>Supermarket<br>Convinient stores  | Supermarket<br>Convinient stores   | Supermarket<br>Convinient stores   | Hypermarket<br>Supermarket<br>Convinient stores   | Hypermarket<br>Supermarket<br>Convinient stores   |
| Major e-commerce                                      | amazon.com, ebay.com, aliexpress.com   | Alibaba's Tmall, WeChat, Taobao, Amazon, JD, Alibaba, eBay   | ebay, Shopee, Lazada, Lelong, Zalora, GoShop   | Wysada.com, Dubizzle.com, Axiom.com   | Haraj.com.sa, Souq.com, Cobone.com, Aliexpress.com, Alibaba.com   |
| Major Super market                                    | Saveko, lulu, the sultan center, gourmet ME  | 3hree sixty, parkshop, marks & spencer   | 99 speedmart, 7 eleven, city grocer, cmart   | Union coop, spinneys, lulu  | Abdullah Alothaim markets, carrefour, danube, Panda   |
| Buying Behaviour/ Industry Buyers                     | Kuwaitis breakfast includes dairy products and cream is very common product that they consume. Fatayen leban, a stuffed bread with cream is very popular.                                  | Cream cheese bagel, cream buns are common among the people of Hong Kong and cream is used in coffee as well. | whipping cream is more popular in foodservice as it enable foodservice operators to use cream in their menus without having to prep them beforehand.   | With increasing interest in healthier eating habits, many consumers are trying to prepare their own meals at home and create appetising meals. The focus on new cooking experiences has led manufacturers to invest in segmentation within cream thus creating different options for various types of meals, such as fish, pasta and vegetable dishes, resulting in increased penetration of cream. | In 2019, there is a 2.2% growth in consumption of cream in Middle East  |
| Mode of payment                                       | Letter of credit, Documents against payment, Documents against acceptance  | Letters of credit, documentary collections, International remittance services                                | cash in advance, open account, letters of credit   | Check, Letter of credit, electronic fund transfer, credit cards   | Open account, Letter of Credit, cash in advance, documentary collections, factoring   |
| General import Documents required                     | Certificate of origin<br>Cargo release order<br>Terminal handling receipt<br>Commercial invoice<br>Manifest/Bayan<br>Bill of lading<br>Packing list<br>SOLAS certificate<br>Delivery Order | Bill of lading<br>Commercial invoice<br>Packing List<br>Import declaration<br>SOLAS certificate              | Customs Import Declaration K1<br>Commercial Invoice<br>Packing List<br>Bill of Lading<br>Preferential Certificate of Origin – Form D ATIGA<br>E-Gate Pass<br>Delivery Order<br>SOLAS certificate | Commercial invoice<br>Packing list<br>Bill of lading<br>Certificate of origin<br>Technical Standard Certificate (from the ESMA)<br>Delivery Advise<br>SOLAS certificate   | Bill of lading<br>Commercial invoice<br>Customs declaration<br>Packing list<br>Delivery Order<br>Certificate of conformity<br>SOLAS certificate |
| Cost to Import (US\$/Containerized shipment)          | \$966  | \$323  | \$273  | \$836   | \$731   |
| Time  | 168 hours  | 20 hours   | 43 hours   | 66 hours  | 104 hours   |
| Indian Diaspora                                       | 929,903  | 38,419   | 2,987,950  | 3,104,586   | 2,814,568   |



| Condensed Milk: Potential International Market Characteristics |  |   |   |   |  |
|--|--|---|---|---|--|
| Evaluating Criteria  | Potential Export Destinations  |   |   |   |  |
|  | China  | Oman  | Hong Kong   | Russia  | Indonesia  |
| Per Capita Consumption (Milk)                                  | 17.37 kg per capita  |   |   | 111.14 kg per capita  | 0.46 kg per capita   |
| Number of NTMs   | 142  | 12  | 28  | 34  | 50   |
| Tariff/Duty  | 10% MFN  | 5% MFN  | 0% MFN  | 15 % MFN, 11.25% GSP  | 5% MFN   |
| Price  | \$ 4.12/ kg to \$22.33/kg  | \$1.37/ltr to \$1.42/ltr  | \$2.77/ltr to \$5.69/ltr  | \$1.93/kg to \$5.36/kg  | \$1.65/kg to \$2.58/kg   |
| Pack size  | 25g, 185g, 350g, 357g.   | 6*150ml, 1 litre  | 350 ml, 374 ml, 397 ml, 405 ml,   | 250g, 270g, 380g, 850g  | 6*37g, 6*40g, 370g, 375g   |
| Competitors's Brand  | Dongtai, Eagle, Fengxing, Panda, Bright, Grain milk, Hui Shan, Longdan, Mengniu Breakfast milk, Mengniu Future star  | Almarai Nijoom Chocolate Milk, Almarai Nijoom Strawberry Flavoured Milk, Lacnor Chocolate Milk  | Pauls, Trappist, Vita, Carnation, Dutch Lady, Eagle, Longevity  | Gustiyar, Korovka iz Korenovky, Alekseevskaya, Glavprodukt, Molochnaya Strana   | Enaak, Frisian Flag, Indomilk, Carnation, Nona, Ultra  |
| Retailer   | Supermarket  | Hypermarket   | Supermarket   | Supermarket   | Supermarket  |
| Major e-commerce   | Alibaba  | Amazon, eBay, Aliexpress and Namshi   | Alibaba, Amazon, eBay   | Wildberries, while Citilink, Ozon and Lamoda  | Shopee, Lazada, Bukalapak, and Tokopedia   |
| Major Super market   | Auchan, RT-Mart, Carrefour, Wal-Mart, Tesco, Metro Cash and Carry  | Gharbiah Grocery, Grand Hypermarket, Smile Supermarket  | Spicestore. HK, Tree Thai Grocery, YoustoreHK   | Magnit  | 99 Ranch Market, AEON Group, Alfamidi, Bintang Supermarket   |
| Buying Behaviour   | China is one of the leading countries in milk production in the world, however, a large amount of dairy products are imported from other countries. In 2018, the volume of condensed milk imported to China from the Netherlands amounted to around 13.7 thousand metric tons. Sweetened condensed milk is produced majorly from cow milk. | The sweet confection of baked coconut and sweetened condensed milk from Oman is called a Chaklama, a close relative to the very well known Coconut Macaroon. It's time for the MENA (Middle Eastern & North African) Cooking Group. | Hong Kong-style milk tea is a tea drink made from black tea and milk (usually evaporated milk or condensed milk). It is usually part of lunch in Hong Kong tea culture. Although originating from Hong Kong, it is found overseas in restaurants serving Hong Kong cuisine and Hong Kong-style western cuisine. | Sweet condensed milk (sgushyonka or sgushchenka or sgushenoe moloko) is very popular in Russia. This gooey, sweet treat was a Soviet staple. Condensed milk is cow's milk from which water has been removed. Used in cooking, for making creams for cakes and pastries. | A popular ingredient high in sugar in Indonesia is susu kental manis (sweetened condensed milk). It comes in plain or chocolate flavors and is commonly used as an ingredient in baking. Despite being classified as milk or chocolate milk, condensed milk is very high in sugar and contains little fresh milk |
| Mode of payment  | open account, letter of credit, cash in advance, documentary collections, factoring  | letter of credit  | open account, letter of credit, cash in advance, documentary collections, factoring   | open account, letter of credit, cash in advance, documentary collections, factoring   | open account, letter of credit, cash in advance, documentary collections, factoring  |
| General Import Documents Required                              | Commercial invoice, Packing list, Bill of lading, Telex release, Customs import declaration, Terminal handling receipt, SOLAS Certificate  | Certificate of origin, Packing list, Import declaration, Bill of lading, Delivery Order, SOLAS certificate,   | Commercial invoice, Packing List, Import declaration, SOLAS certificate,  | Certificate of conformity, Commercial invoice, Consignment note/ CMR waybill, Customs Import Declaration, Transit declaration, Letter from the bank certifying opening of letter of credit, Packing list, Sales purchase contract                                       | Delivery order, Cargo release order (SPPB), Commercial invoice, Insurance documentation, Packing list, Customs import declaration (PIB), Terminal handling receipts, Cargo release order (SPPB), SOLAS certificate   |
| Cost to Import (US\$/Containerised shipment)                   | 305 USD  | 368 USD   | 323 USD   | 560 USD   | 544 USD  |
| Time   | 48 hours   | 46 hours  | 20 hours  | 55 hours  | 186 hours  |
| Indian Diaspora  | 56,020   | 6,89,145  | 38,419  | 30,560  | 1,07,500   |

| Yoghurt : Potential International Market Characteristics |  |   |  |  |
|--|--|---|--|--|
| Evaluating Criteria                                      | Potential Export Destinations  |   |  |  |
|  | Oman   | China   | Russia   | Philippines  |
| Per Capita Consumption (fresh milk)                      |  | 17.37 Kg/ Capita  | 111.1 Kg/ Capita   | 0.09 Kg/ Capita  |
| Number of NTMs   | 12   | 93  | 31   | 24   |
| Tariff/Duty  | 5% (MFN)   | 10% (MFN)   | 15% but not less than 0.18 euro per kg (MFN), 75% of the general tariff (GSP)  | 7% (MFN), 5% (FTA;ASEAN)   |
| Price per Litre  | \$1.38 to \$1.80   | \$1.5 to \$3.84   | \$ 1.41/kg to \$5.90/kg  | \$0.42/Litre to \$2.62/Litre   |
| Pack size  | 160 ml, 170 ml, 180 ml, 340 ml, 1 Litre  | 100g, 115g, 135g, 150g, 160g, 180g, 200g, 205g, 450g  | 90g, 100g, 115g, 150g, 200g, 270g, 290g, 320g, 330g, 450g, 750g, 850g  | 90 ml, 125g, 400 ml, 1000 ml   |
| Competitors's Brand                                      | Almarai Flavoured Laban Strawberry, Almarai Fresh Laban Full Fat, Safi Danone Activia Laban, Al Rawabi Fresh Yoghurt Full Cream, Al Rawabi Fresh Yoghurt Low Fat, Almarai Fresh Yoghurt Full Cream, Almarai Fresh Yoghurt Low Fat ,Almarai Fresh Yoghurt Vetal Digest  | Bright, Changyou,Classy Kiss,Deyi,Flower Lounge,Huangshi,Jun Le Bao,Liziyuan,Mengniu,Nutrition Express,Sanyuan,Shuang Wai Wai,Tianshan Snow,Tianyou,Hui Shan,Wei Chuan,Weigang,AB 100, Activia  | Actimel,Actimel Imunitass ,Activia,Bio Balance,Bio Max,Frugurt,Chudo, Rastishka,Campina Nezhny,Savushkin Produkt   | Dutch Mill Yoghurt, Nestlé Fruit Selection, Yakult,Nestlé Creamy Yoghurt   |
| Retailer   | Hyper Markets  | Super Markets, www.alibaba.com/   | Super Markets, Convinience globalrustrade.com/, www.wildberries.ru   | Super Markets, Convinience www.landars.ph/, www.lazada.com.ph/   |
| Major e-commerce   | www.luluhypermarket.com/en-om/, www.ubuy.om/, www.almall.com/  |   |  |  |
| Major Super market/Hyper Market                          | LULU Hypermarket, Mars Hypermarket   | Jenny Lou's, Hualian Supermarket  | Перекресток,Azbuka Vkusa,AB DAILY  | 7 Eleven, Hi-Top Supermart, Top Choice Supermarket, Robinsons Supermarket  |
| Buying Behaviour   | Omani's consume Yoghurt along Laban and Labanah (a popular variant of yoghurt).Labneh (a.k.a. labaneh, labne, labni or lebnah) is considered the yogurt cheese. It is more commonly used in the Middle East as a yogurt spread and its thickness is similar to cream cheese. In America, Labneh is known as Kefir Cheese.In oman Labneh is used as a yogurt spread and is commonly paired with pita bread, toast, and veggies. | Probiotic drinking yoghurt sees trend towards smaller bottles. Yoghurt and sour milk products is expected to see a 10% current value CAGR (7% at constant 2019 prices) over the near future, reaching CNY237.3 billion (CNY210.3 billion in constant terms) in 2024.Ambient drinking yoghurt(Shelf-stable yoghurt) remained the driving force in yoghurt, but saw its rate of growth slow as a result of increasing maturity. | There is significant increase in retail prices and growing consumer anxiety about low quality products produced from powder milk or with the addition of vegetable fats, like palm oil which has bopught down demand recently.The decline in consumption was more pronounced in low-fat sour milk products and less pronounced in full-fat sour milk products. Yoghurt and sour milk drinks is somewhat of a mature category in Russia and therefore, to capture the attention of consumers, manufacturers are experimenting with new product types. | Retail price is seen as an important factor for success in the Philippines, with the country's large population of low-income consumers being very price conscious. For example, Savencia Fromage & Dairy's Elle & Vire, which is an imported brand, increased its retail prices in 2018, which adversely impacted its growth. Yoghurt is a very consolidated category in the Philippines with Yakult controlling the market. Nevertheless, the category saw several new entrants in 2018/2019, which helped to expand the range of options on offer |
| Mode of payment  | Letter of credit, Documentary Collection   | letters of credit and documentary collections   | Advance Payments, 30/70 ( 30 percent due at the time of order/invoice and 70 percent due upon shipment)  | Letter of Credit, Documentary Collections, Open Account  |
| Gneral Import Documents Required                         | Commercial invoice<br>Certificate of origin<br>Packing list<br>Import declaration<br>Bill of lading<br>Delivery Order<br>SOLAS certificate   | Contract<br>Commercial invoice<br>Packing list<br>Bill of lading<br>Telex release<br>Customs import declaration<br>Terminal handling receipt<br>SOLAS Certificate   | Acceptance order<br>Certificate of conformity<br>Commercial invoice<br>Consignment note/ CMR waybill<br>Customs Import Declaration<br>Transit declaration<br>Letter from credit cetificate from bank<br>Packing list<br>Sales purchase contract  | Packing List<br>Invoice<br>Bill of Lading<br>Customs Import Declaration<br>Certificate of Origin<br>SOLAS certificate  |
| Cost to Import (US\$/Contanerised shipment)              | \$368  | \$305   | \$ 560   | \$ 758   |
| Time   | 46 hrs   | 48 hrs  | 55 hrs   | 216 hrs  |
| Indian Diaspora  | 689,145  | 56,020  | 30,560   | 120,000  |

| Casein: Potential International Market Characteristics |  |  |  |  |  |
|--|--|--|--|--|--|
| Evaluating Criteria                                    | Potential Export Destinations  |  |  |  |  |
|  | Russia   | Switzerland  | Sweden   | Denmark  | Kazakhstan   |
| Per Capita Consumption (Milk)                          |  | 0.29kg/capita (Regional)   | 0.29kg/capita (Regional)   | 0.29kg/capita (Regional)   |  |
| NTM  | 25   | 52   | 33   | 33   | 39   |
| Tariff/Duty  | 5% (MFN), 3.75% (GSP)  | 659.05 Fr. per 100 kg gross (MFN)  | 0% (MFN)   | 0% (MFN)   | 5% (MFN), 3.75% (GSP)  |
| Price  | \$19.23- \$24.37/ Kg   | \$14.98-\$26.65/Kg   | \$18.99-\$29.99/ kg  | \$18.99-\$29.99/ kg  | \$22.2- \$42/Kg  |
| Pack size  | 2 Lbs, 4Lbs  | 1 kg, 2kg, 3 kg, 4kg<br>460 g, 1000g, 3000g  | 2 Pound, 3 Pound, 5 Pound, 16 ounce,   | 2 Pound, 3 Pound, 5 Pound, 16 ounce,   | 900g, 910g, 1.08kg   |
| Competitors's Brand                                    | Dymatize<br>Optimum<br>MusclePharm<br>MuscleTech<br>Pro Supps (All are protein supplement brands)  | Mammut Formal<br>Optimum<br>Protein Pulver<br>Scitec<br>Inkospor<br>Bodylab 24 (All are protein supplement brands)   | Optimum<br>OWN PWR<br>GNC Pro Performance<br>Metabolic Drive (All are protein supplement brands)   | Optimum<br>MusclePharm<br>Dymatize<br>Kaged Muscle<br>MuscleTech (All are protein supplement brands)   | Inner armour<br>Gold Standard<br>Pro Star 100% (All are protein supplement brands)     |
| Retailer   | Supermarket<br>Internet Retailing  | Hypermarket<br>Supermarket<br>Convinient stores  | Hypermarket<br>Supermarket<br>Convinient stores  | Hypermarket<br>Supermarket<br>Convinient stores  | Supermarket<br>Convinient Store  |
| Major e-commerce                                       | www.wildberries.ru,<br>www.av.ru,<br>www.gosupps.com   | digitec.ch, Zalando,<br>Amazon   | Amazon, ebay,<br>CDON.com, Apotea.se   | Zalando, Amazon, eBay  | Namba.kz, Nur.kz, Kiwi.kz  |
| Major Super market                                     | Azbuka Vkusa, Magnit,<br>X5 Retail, Dixy Group,  | Aldi, Coop, Lidl,<br>Denner, Migros, Spar  | Eko, Handlar'n, ICA<br>Supermarket   | Aldi, Bilka, Netto, 7<br>Eleven  | Stodichny, Interfood,<br>Silkway   |
| Buying Behaviour/<br>Industry Buyers                   | Russia being a dairy deficit country imports dairy products. Casein is popular as natural protein or for sports nutrition.   | Dairy products are widely consumed in switzerland and are not considered as vegan. Casein earlier was used as adhesive but now casein protein from milk is used for making the most popular emmental cheese that is used in traditional fondue recipe. | It is used in ready-to-drink nutritional beverages, sports nutrition powders, protein bars, yogurts, processed cheeses and chocolates and candy, baking goods, coffee creamers, spreads, ice creams, frozen desserts, soups and gravies. | Arla Foods is one of the largest producers of casein. It is used in ready-to-drink nutritional beverages, sports nutrition powders, protein bars, yogurts, processed cheeses and chocolates and candy, baking goods, coffee creamers, spreads, ice creams, frozen desserts, soups and gravies. | It is widely used as sports nutrition and in wellness industry                         |
| Mode of payment  | Advance Payment,<br>Leasing  | Cash in Advance,<br>Letter of Credit, Open Account,<br>Documentary Collections,<br>Consignment   | Electronic Funds/<br>Bank Transfer, Letter of Credit,<br>Documentary Collections, Payment Guarantee  | Cash in Advance, Letter of Credit, Open Account,<br>Documentary Collections, Facotring   | Cash in Advance, Letter of Credit, Open Account,<br>Documentary Collections, Facotring |
| General import Documents required                      | Acceptance order,<br>Certificate of conformity,<br>Commercial invoice,<br>Consignment note/<br>CMR waybill,<br>Customs Import Declaration,<br>Transit declaration,<br>Letter from the bank certifying opening of letter of credit,<br>Packing list,<br>Sales purchase contract | Commercial invoice,<br>Customs Import Declaration,<br>Packing list,<br>CMR Waybill,<br>Tracer (Laufzettel),<br>Certificate of origin (EUR.1)   | CMR waybill,<br>Commercial invoice,<br>Packing list,<br>Intrastat  | CMR waybill,<br>Commercial invoice,<br>Packing list,<br>Intrastat  | Invoice,<br>Waybill,<br>Packing list   |
| Cost to import (US\$/Contanerized shipment)            | \$560  | \$142  | \$0  | \$0  | \$0  |
| Time   | 55 hours   | 3 hours  | 1 hour   | 1 hour   | 8 hour   |
| Indian Diaspora  | 30,560   | 24,567   | 25,719   | 11,200   | 5,750  |

| <b>Casseinate: Potential International Market Characteristics</b> |  |  |   |
|---|--|--|---|
| <b>Evaluating Criteria</b>  | <b>Potential Export Destinations</b>   |  |   |
|   | <b>Denmark</b>   | <b>Sweden</b>  | <b>Austria</b>  |
| <b>Per Capita Milk Consumption (Regional)</b>                     | 0.29kg/capita  | 0.29kg/capita  | 0.29kg/capita   |
| <b>Number of NTMs</b>   | 8  | 8  | 8   |
| <b>Tariff/Duty</b>  | 8.30% (MFN), 4.80% (GSP)   | 8.30% (MFN), 4.80% (GSP)   | 8.30% (MFN), 4.80% (GSP)  |
| <b>Price</b>  | \$18.99-\$29.99/ kg  | \$18.99-\$29.99/ kg  | \$30/Kg   |
| <b>Pack size</b>  | 2 Pound, 3 Pound, 5 Pound, 16 ounce,   | 2 Pound, 3 Pound, 5 Pound, 16 ounce,   | 1 kg, 1.8 kg  |
| <b>Competitors's Brand</b>  | Optimum<br>MusclePharm<br>Dymatize<br>Kaged Muscle<br>MuscleTech   | Optimum<br>OWN PWR<br>GNC Pro Performance<br>Metabolic Drive   | Farben Casein- Grundierung (AURO)<br>Weider 100%                                    |
| <b>Retailer</b>   | Hypermarket<br>Supermarket<br>Convinient stores  | Hypermarket<br>Supermarket<br>Convinient stores  | Supermarket<br>Convinient stores  |
| <b>Major e-commerce</b>   | Zalando, Amazon, eBay  | Amazon, ebay, CDON.com, Apotea.se  | amazon.de, zalando.at, universal.at   |
| <b>Major Super market</b>   | Aldi, Bilka, Netto, 7 Eleven   | Eko, Handlar'n, ICA<br>Supermarket   | Billa, Spar, Eurospar, Adeg   |
| <b>Buying Behaviour/ Industry Buyers</b>                          | Arla Foods is one of the largest producers of caseinate. caseinate is used in ready-to-drink nutritional beverages, sports nutrition powders, protein bars, yogurts, processed cheeses and chocolates and candy, baking goods, coffee creamers, spreads, ice creams, frozen desserts, soups and gravies. | It is used in ready-to-drink nutritional beverages, sports nutrition powders, protein bars, yogurts, processed cheeses and chocolates and candy, baking goods, coffee creamers, spreads, ice creams, frozen desserts, soups and gravies. | Caseinate is used as dietary supplement or for sports nutrition                     |
| <b>Mode of payment</b>  | Cash in Advance, Letter of Credit, Open Account, Documentary Collections, Facotring  | Electronic Funds/ Bank Transfer, Letter of Credit, Documentary Collections, Payment Guarantee  | Cash in Advance, Letter of Credit, Open Account, Documentary Collections, Facotring |
| <b>General import Documents required</b>                          | CMR waybill<br>Packing list<br>Commercial invoice<br>Intrastat<br>Packing list<br>Commercial invoice<br>Intrastat  | CMR waybill<br>Commercial invoice<br>Packing list<br>Intrastat   | CMR waybill<br>Commercial invoice<br>Packing list<br>Intrastat                      |
| <b>Cost to Import (US\$/Contanerized shipment)</b>                | \$0  | \$0  | \$0   |
| <b>Time</b>   | 1 hour   | 1 hour   | 1 hour  |
| <b>Indian Diaspora</b>  | 11,200   | 25,719   | 31,000  |

| Lactose Pharmaceuticals: Potential International Market Characteristics |  |  |  |  |
|---|--|--|--|--|
| Evaluating Criteria   | Potential Export Destinations  |  |  |  |
|   | Poland   | Spain  | Sweden   | Portugal   |
| Per Capita Milk Consumption (Regional)                                  | 83.72kg/capita   | 83.72kg/capita   | 83.72kg/capita   | 83.72kg/capita   |
| Number of NTMs  | 8  | 8  | 8  | 8  |
| Tariff/Duty   | 14 EUR/ 100 kg (MFN)   | 14 EUR/ 100 kg (MFN)   | 14 EUR/ 100 kg (MFN)   | 14 EUR/ 100 kg (MFN)   |
| GDT prices june 2015-june 2020 (Low to High)                            | GDT \$397 per mt - \$1035 per mt   | GDT \$397 per mt - \$1035 per mt   | GDT \$397 per mt - \$1035 per mt   | GDT \$397 per mt - \$1035 per mt   |
| Pack size   | 25kg   | 25kg   | 25kg   | 25kg   |
| Competitors's Brand   | BASF SE<br>Merck KGaA<br>DFE Pharma<br>Armor<br>Meggler<br>ALPAVIT   | BASF SE<br>Merck KGaA<br>DFE Pharma<br>Armor<br>Meggler<br>ALPAVIT   | BASF SE<br>Merck KGaA<br>DFE Pharma<br>Armor<br>Meggler<br>ALPAVIT   | BASF SE<br>Merck KGaA<br>DFE Pharma<br>Armor<br>Meggler<br>ALPAVIT   |
| Retailer  | Supermarket<br>Convenience Store   | Supermarket<br>Convenience Store   | Supermarket<br>Convenience Store   | Supermarket<br>Convenience Store   |
| Major e-commerce  | Allegro.pl, Ceneo.pl, Euro.com.pl  | Amazon, El Corte Ingles, eBay  | Amazon, eBay, CDON.co  | zalando, amazon, euronics  |
| Major Super market  | Dino, Tesco, Polomarket, Mila, Intermarche, Kaufland, E Leclerc  | Mercadona, Consum, Eroski City, Condis, Eurospar, Supercor, Bonpreu  | ICA Supermarket, Willys  | Pingo Doce, Continente Modelo, Intermarche, Supercor, Modelo, Ponto Fresco   |
| Buying Behaviour/ Industry Buyers                                       | Pharmaceutical grade lactose is used as a filler in the manufacture of pharmaceutical tablets and capsules. The market is rising due to factors such as increasing approval from government bodies to use pharmaceutical grade lactose as an excipient, drug formulation coupled with nanotechnology, efficient compatibility with active ingredients and other excipients, increasing healthcare expenditure, and increasing demand for dry powder inhalers products. | Pharmaceutical grade lactose is used as a filler in the manufacture of pharmaceutical tablets and capsules. The market is rising due to factors such as increasing approval from government bodies to use pharmaceutical grade lactose as an excipient, drug formulation coupled with nanotechnology, efficient compatibility with active ingredients and other excipients, increasing healthcare expenditure, and increasing demand for dry powder inhalers products. | Pharmaceutical grade lactose is used as a filler in the manufacture of pharmaceutical tablets and capsules. The market is rising due to factors such as increasing approval from government bodies to use pharmaceutical grade lactose as an excipient, drug formulation coupled with nanotechnology, efficient compatibility with active ingredients and other excipients, increasing healthcare expenditure, and increasing demand for dry powder inhalers products. | Pharmaceutical grade lactose is used as a filler in the manufacture of pharmaceutical tablets and capsules. The market is rising due to factors such as increasing approval from government bodies to use pharmaceutical grade lactose as an excipient, drug formulation coupled with nanotechnology, efficient compatibility with active ingredients and other excipients, increasing healthcare expenditure, and increasing demand for dry powder inhalers products. |
| Mode of payment   | Letter of Credit, Payment against documents, Electronic fund transfer, Leasing   | Cheque, Payment order, letter of credit, document against payment, documentary credit  | Electronic Funds/ Bank Transfer, Letter of Credit, Documentary Collections, Payment Guarantee  | Letter of Credit, Documentary Credit, Documents against payment, payment orders, Cheques   |
| General import Documents required                                       | CMR waybill<br>Commercial invoice<br>Packing list<br>Intrastat   | CMR waybill<br>Commercial invoice<br>Packing list<br>Intrastat   | CMR waybill<br>Commercial invoice<br>Packing list<br>Intrastat   | CMR waybill<br>Commercial invoice<br>Packing list<br>Intrastat   |
| Cost to Import (US\$/Containerised shipment)                            | \$0  | \$0  | \$0  | \$0  |
| Time  | 1 hour   | 1 hour   | 1 hour   | 1 hour   |
| Indian Diaspora   | 4,600  | 55,308   | 25,719   | 73,244   |

| SMP : Potential International Market Characteristics |   | Infant Milk: Potential International Market Characteristics |   |  |
|--|---|---|---|--|
| Evaluating Criteria                                  | Potential Export Destinations   |   | Potential Export Destinations   |  |
|  | China   |   | Algeria   | Kazakhstan   |
| Per capita Milk Consumption                          | 0.21 kg per capita  |   | 255.42kg/capita   |  |
| Number of NTMS                                       | 166   |   | 42  | 23   |
| Tariff/Duty  | 10% (MFN), 7%(FTA/APTA)   |   | 5%  | 5% (MFN)   |
| GDT Price Band Lowest/ highest (2015-2020)           | US\$1200-US\$1600/Metric tons   |   | \$1.40-\$13.11/Kg   | \$6.46-\$28.04/Kg  |
| Pack size  | 25g   |   | 100g, 250, 400g, 500g, 1 lt   | 100g, 125g, 200g,80g, 900g, 700g, 350, 400g,   |
| Competitor Brands                                    | Fonterra, Changzhou Red Sun Biological Engineering Co, Heze bigtree biology engineering science and technology co. ltd  |   | Nursie<br>Biomil<br>Celia<br>Aptamil<br>Vigor<br>Cerelac  | Malyutka<br>Nan<br>Nestle<br>Humana<br>Vinni<br>Hipp   |
| Major E commerce                                     | Alibaba   |   | Promy, UNO City, Zafta, Bon Prix, Galaxy Supermarket  | Small, Anvar, Magnum, Ayan, Galmart, 5 Minute, Tamasha   |
| Industry Behaviour                                   | In 2018, the total domestic consumption of skimmed milk powder amounted to 300 thousand metric tons in China, up from 276 thousand tons in the previous year. Whole milk powder consumption, however, was 5.5 times more. China is one of the leading countries in milk production in the world, however, a large amount of dairy products are imported from other countries. In 2018, the volume of skimmed milk powder imported in China amounted to 280 thousand metric tons, up from 247 thousand metric tons in the previous year. In 2018, the volume of skimmed milk powder imported to China from New Zealand amounted to around 127.4 thousand metric tons |   | Bill of Lading<br>Cargo Release Order<br>Commercial invoice<br>Custom Import Declaration<br>Inspection Report<br>Packing List<br>Terminal Handling receipt<br>Certificate of conformity<br>SOLAS certificate<br>Avis d'arrivée<br>Certificate of origin | Invoice<br>Waybill<br>Packing list   |
| Common Mode of payment                               | open account, letter of credit, cash in advance, documentary collections, factoring   |   | ouedkniss.com, aliexpress.com, amazon.com   | Namba.kz, Nur.kz, Kiwi.kz  |
| General Import Documents required by Importer        | Commercial invoice<br>Bill of lading<br>Telex release<br>Customs import declaration<br>Terminal handling receipt<br>SOLAS Certificate   |   | Hypermarket<br>Supermarket<br>Health and Beauty<br>Specialist Retailers   | Super Market<br>Health and Beauty Specialist<br>Retailers  |
| Cost to Import (US\$/Contanerised shipment)          | 305 USD   |   | Parents in Algeria considers baby food as healthy and are ready to provide best nutrition to their babies.  | Kazakhs people considers milk formulas as healthy and infant milk or baby milk formulas are used as a substitute to human milk |
| Time to Import(Hrs)                                  | 48 hours  |   | Letter of Credit  | Letter of Credit   |
| Indian Diaspora                                      | 56020   |   | Cost to Import (US\$/Contanerised shipment)   | \$0  |
|  |   |   | Time  | 306 hour   |
|  |   |   | Indian Diaspora   | 3,516  |
|  |   |   |   | 8 hour   |
|  |   |   |   | 5,750  |

## 8.4 Country Profile

In this section, detailed market information of existing and potential markets is given. This country profiles can be used by exporters as reference material for market research. Major factors like demographics, preferred dairy products, competing brands, labelling requirements, buying behaviour, major banks, FTA information etc, are compiled for countries like Hong Kong, Cambodia, Saudi Arabia, Myanmar, UAE, Macau and Ghana.

**Demography:** The increased world trade in dairy has created great opportunities and has also increased the risks due to greater competition. There is a high possibility of products becoming less expensive due to resources becoming more available through greater distribution. This can in turn lead to more customization on global scale to meet different customer preferences. Companies have to adapt to the changes in the world environment and the best way to do this is through market segmentation (Larsson and Martinkauppi, 2003). To penetrate to an important potential market, the best strategy would be to select a segment and serve this segment in exclusion to the others. For example, a country with predominant youth population could be served best with products like Malt, Whey etc.

**Preferred Products:** One of the important factors in determining the demand of a product is the consumer tastes and preferences. After segmenting the population into various groups, it is pertinent to understand the preferences of the segment selected. This will lead to production and export of only those goods which are actually demanded. For example, if the youth population dominates the demography, then it is important to understand the youth preferences of dairy products so that a country which has a comparative advantage in the preferred product can supply that product to its potential market.

**FTAs/PTAs:** Trade agreements are treaties signed by two or more nations to encourage the free flow of goods and services between the members. These agreements, which can be bilateral or multilateral, reduce or eliminate trade barriers such as tariffs and quotas. As such, they lead to the creation of new markets for businesses, facilitate the production of high-quality goods and enhance economic growth. Various economists such as Nobel laureate (Jan Tinbergen 1962) have statistically proved that FTAs and PTAs have a significant impact on international trade among two nations. Both free and preferential trade agreements directly affect a country's economy by altering its flows of trade and investment. Free trade agreements also indirectly affect other aspects of a country's economy, such as level of productivity, output

and employment. Therefore, it is extremely important to consider the FTAs/PTAs with the potential markets. Any market with a trade agreement in place with the penetrating market will be easier to enter.

**Major Competitors and Major Brands:** Before entering into an important potential market, it is important to have an idea about the competitors and their market strategies. Only if a country has the ability to compete with the top brands in the potential market, can it think of penetrating those markets. Competition is important to the business as it helps in identifying the specific and unique traits that are appealing to customers.

**Labelling requirements:** In terms of labelling, the way the packaging is presented is a highly visible element in the promotional mix. Labelling is critically important from sales point of view specially when the consumers are presented with wide range of choices. This leads to the manufacturers using a wide range of different labelling in the packaging of their products. These include the status, likeability or physical attraction of the endorser (i.e. source effects), the mere quantity of arguments presented or the sensory execution and imagery represented by eye-catching colors, pictures, graphics and symbols, perhaps surrounding a product in advertising or in the packaging (Davies, M. and Wright, L.,1994). It is therefore extremely important to consider the labelling requirements in the potential markets before exporting. There needs to be a monitoring of what particular aspect of labelling is considered important in each potential market and thereafter the export plan needs to be executed.

**Dairy industry Overview:** An important characteristic of the potential markets considered is the overview of the dairy industry. An industry overview gives idea about various aspects like net exporter or importer of dairy products, government incentives provided to the dairy industry, government schemes, self-sufficiency conditions etc. An industry overview makes it easier to plan exports to a potential market based on informed decision making after considering the scenario existing in the industry.

**Buying behaviour:** It is the sum total of the attitudes, preferences, beliefs and decisions regarding the consumers behaviour when purchasing a product or service in a market. Marketing is done targeting the demands and wants of the consumer and knowledge of consumer behaviour can help in attaining this goal. It is pertinent to consider the likes and dislikes of the consumers so that exporters can provide them with the goods and services accordingly. Therefore, before exporting to a particular potential market, it is essential that the



buying behaviour of those markets is analysed and the exports can be customized according to the buying pattern.

**Trade Finance and Major Banks:** For a number of years, dairy producers have struggled with declining demand in developed economies. At the same time, low commodity prices have caused retailers and producers to squeeze their supply chains, putting increasing pressure on suppliers in an industry where margins are already comparatively slim. However, rising global demand for dairy products has heralded a resurgence amongst the dairy producers able to meet it. More and more firms are able to increase their profits and expand their operations because of availability of trade finance. Dairy producers are increasingly turning to trade financiers to help them manage their cash flow by financing larger orders or one-off international transactions using trade finance products. By offering drastically reduced capital requirements on their lending, trade financiers can provide firms with the finance they need to invest in profitable ventures and pay suppliers promptly without disrupting their day to day business, whilst flexible repayment terms give them time to repay the loans from the profits of their investment. It is therefore important to know about the trade financing options in the potential markets and about the financial institutions that cater to the finance needs of the exporters.

**Litigation and major litigation bodies in the region:** Litigation procedures in the potential country are one of the most important factors in making the export decisions. It is important for an exporter to be aware of the dispute settlement procedure in case of any trade conflict so that welfare is achieved. Bechtel, M., & Sattler, T. (2015) have provided evidence that litigation in WTO effects bilateral trade between countries involved in trade dispute. It is therefore also important for an exporter to know about the major litigation bodies in the potential markets.

**Arbitration and major arbitration bodies in the region:** in the latest time arbitration has become the new litigation as it is touted as more efficient, less costly and more final method of resolving disputes since there is very little or no trappings of litigation so much so that arbitration has come close to being called as 'civil litigation' (Stipanowich, Thomas J.2010) It is therefore important that an exporter is fully aware about the arbitration options available to him as an alternative to litigation in case of a trade dispute.

**Risk assessment:** Before exporting to the potential markets, it is important to know the level of risk involved because only if the returns are higher than the risk involved, will it be profitable to export to the potential markets. Hence the template specifically provides details about the

risk involved in exporting to the potential markets. The Credit Risk Grading (CRG) is a collective definition based on the pre-specified scale and reflects the underlying credit-risk for a given exposure. A Credit Risk Grading deploys a number/ alphabet/ symbol as a primary summary indicator of risks associated with a credit exposure. For example AAA ratings are issued to investment-grade debt that has a high level of creditworthiness with the strongest capacity to repay investors. The AA+ rating is issued by S&P and is similar to the Aa1 rating issued by Moody's. It comes with very low credit risk and indicates the issuer has a strong capacity to repay. The following are the types of risks and the ratings involved with them:

- 1) Sovereign Risk: Sovereign risk is the chance that a central bank will implement foreign exchange rules that will significantly reduce or negate the worth of its forex contracts. It also includes the risk that a foreign nation will either fail to meet debt repayments or not honor sovereign debt payments. For example, Sovereign Risk is rated in 'B' Category in Myanmar.
- 2) Currency Risk: Currency Risk, sometimes referred to as exchange rate risk, is the possibility that currency depreciation will negatively affect the value of one's assets, investments, and their related interest and dividend payment streams, especially those securities denominated in foreign currency. For example, currency risk is under 'BB' category in Myanmar
- 3) Banking Sector Risk: Risks in India's banking sector may rise as a result of the central bank's recent steps encouraging banks to lend more to Non-Bank Financial Institutions (NBFIs) and retail borrowers, according to Fitch Ratings. For Example, banking sector risk is graded under 'B' category in Myanmar.
- 4) Political Risk: Political risk is the risk an investment's returns could suffer as a result of political changes or instability in a country. Instability affecting investment returns could stem from a change in government, legislative bodies, other foreign policymakers or military control.

Economic Structure Risk: Economic structure risk encompasses a series of macroeconomic variables of a structural rather than a cyclical nature. For example both political risk and economic structure risk are rated under 'CCC' category in Myanmar.



Country : Myanmar  
GNI Per Capita : US\$-1,310  
Income Category : Lower middle income

Region : East Asia  
Population : 54.05 million  
Currency : Myanmar Kyat

**Demography:**

Youth Population (Aged 0-14) : 25.5% Working Age Population (Aged 15-64): 68.2 %  
Elderly Population (Aged 65+) : 6.3%

**Preferred Products:**

UHT Milk, Condensed milk, Evaporated milk, Cream, Whole Milk Powder, Skimmed Milk Powder, Butter Milk, Butter, Whey, Cheese, Lactose, Malt Food, Infant Milk Food, Casseinate

**FTA/PTA:**

Concession for 040299 (Flavoured Milk/Cream, Condensed Milk) Under India ASEAN FTA

**Major Competitors:**

New Zealand, Australia, Malaysia, Ireland, Germany, Poland, Thailand

**Major Brands:**



**Labelling Requirements:**

Codex guidelines along with the ASEAN Common Principles and Requirements, Appendix 2 for the Labelling of Pre-packaged Foods is being followed in Myanmar. The Central Committee for Consumer Protection mandates all consumer products sold in the country to be labelled with certain minimal information in the Myanmar language. The notification requires Myanmar language labelling for directions for use, storage instructions, allergy alerts and/or warnings and side effects (if any). A new draft law from the Department of Consumer Affairs (DOCA) is expected to include additional items on the label in the Myanmar language, such as type of food, size, quantity, and net amount/net weight of products.

**Dairy Industry Overview:**

Myanmar meets a Large Portion of its Domestic demand for dairy by means of imports. <sup>1</sup>The Myanmar Dairy Excellence Project (MDEP) is a joint commitment by the Government of Myanmar (GoMy) through the Livestock Breeding and Veterinary Department (LBVD) of the Ministry of Agriculture, Livestock and Irrigation (MoALI) and the Government of New Zealand through the Ministry of Foreign Affairs and Trade (MFAT). The project is covered under the Myanmar – New Zealand Joint Commitment for Development Cooperation (JCfDC).

**Buying Behaviour:**

With a high expected economic growth, Myanmar has a growing urban population which points towards good opportunities in dairy. People living in urban areas already have a positive perception about dairy products as an essential supplement of nutrition.



Country : Myanmar  
 GNI Per Capita : US\$-1,310  
 Income Category : Lower middle income

Region : East Asia  
 Population : 54.05 million  
 Currency : Myanmar Kyat

**Major Banks:**

Kanbawza Bank Limited (KBZ), Myanma Foreign Trade Bank (MFTB), Yoma Bank

**Trade Finance Overview:**

Letter of Credit (L/C) and Telegraphic Transfer (TT) are the most popular methods of payments used in International trade with Myanmar. Private Banks in the country offers more flexible and favourable terms on L/Cs to the exporters as they requires only a smaller percentage of the amount to be deposited whereas state owned banks insist on full payment as deposit. Additionally, The Operational and processing speed of transactions are faster under Private Banks when Compared to State Owned Banks in The Country

**Litigation:**

Commercial disputes up to 10,000,000 Kyats is subjected to the purview of Township Judges whereas Deputy Township Judges handles the suits with monetary value of 3,000,000 Kyats. Suits with a monetary value between 10,000,000 to 1000,000,000 Kyats are subjected to District/Regional Courts. There is no limitation for the monetary value of the suits handled by the Supreme Courts. As per world Bank's doing Business Survey, On average basis it takes 1160 days to enforce contracts in Myanmar through Local Court Proceedings with cost ranging up to 51.5% of the total claim value.

**Arbitration:**

Myanmar is a party to the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards. Even though Union of Myanmar Federation of Chambers of Commerce and Industry had set up a system for Arbitration in the country (UMFCC), its services are offered on ad-hoc basis that too limited to its members. International Arbitration Bodies in the region Such as Hong Kong International Arbitration Centre (HKIAC), Singapore International Arbitration Centre (SIAC), International and Domestic Arbitration Centre India (IDAC) Offers dispute settlement platform for International Arbitrations.

**Major Arbitration Bodies in the region:**

- International and Domestic Arbitration Centre India
- Singapore International Arbitration Centre
- Hong Kong International Arbitration Centre

**Major Litigation Bodies in the country:**

- Myanmar Supreme Court
- High Courts
- Township Courts

**Risk Assessment**

| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| B              | BB            | B                   | CCC            | CCC                     | B            |



Country : Azerbaijan  
GNI Per Capita : US\$-4,050  
Income Category : Upper middle income

Region : Central Asia  
Population : 10.05 million  
Currency : Azerbaijani Manat

### **Demography:**

Youth Population (Aged 0-14) : 23.5% Working Age Population (Aged 15-64) : 69.7%

Elderly Population (Aged 65+) : 6.8%

### **Preferred Products:**

UHT Milk, Condensed milk, Evaporated milk, Cream, Skimmed Milk Powder, Cheese, Butter Oil, Butter Milk, Lactose, Infant Milk, Cassein, Casseinate

### **FTA/PTA:**

Nil

### **Major Competitors:**

New Zealand, Ukraine, Russia, Belarus

### **Major Brands:**



### **Labelling Requirements:**

All the agricultural commodities should be labelled in Azerbaijani. Information regarding Name and brand of the product, Manufacturer information, Expiry date, Nutritional and caloric values, details of packaging material, Storage Instructions, Usage Instruction, Country of Origin, Special warnings (if any) as well as Licensing and certification information should be provided. English labels are permitted if information in Azerbaijani is also provided.

### **Dairy Industry Overview:**

Local companies led the sales of drinking milk products, mostly because of the competitive prices they offer local consumers. Although modern grocery retailers, including supermarkets, hypermarkets and convenience stores, grew rapidly in Azerbaijan over the review period, traditional grocery retailers, including independent small grocers and other grocery retailers, continued to account for the majority of the dairy products distribution. These retail outlets are preferred by local consumers due to convenience as they are often located near or in residential areas with short or no queues

### **Buying Behaviour:**

There is a general shift towards packaged formats among local consumers especially due to increasing disposable income as well as the economic stability. Development of the modern retail Platforms is also expected to support growth of dairy products increasing sales through supermarkets, hypermarkets and convenience stores. Traditional milk products comprises a



Country : Azerbaijan  
 GNI Per Capita : US\$-4,050  
 Income Category : Upper middle income

Region : Central Asia  
 Population : 10.05 million  
 Currency : Azerbaijani Manat

**Major Banks:**

IBA, PASHA Bank, Kapital Bank, Xalg Bank, ASB Bank, Bank Respublika

**Trade Finance Overview:**

<sup>1</sup>Large transactions are accomplished through inter-bank wire transfers. Personal checks are not accepted anywhere. All payments must be made in the local currency, the Azerbaijani manat. Azerbaijan has established a credit-rating agency, but credit-rating and collections are not yet well-developed in Azerbaijan

**Litigation:**

Litigation in Azerbaijan is regulated by the Civil Procedure Code. Certain types of Cases such as those cases relating to claims in respect of recognition of the validity of patents, marks or other rights where registration or an application for registration of these rights has been carried out in Azerbaijan as well as the Cases related to claims against cargo shippers, deriving from contracts for transportation services are to be exclusively dealt with Azerbaijani courts. As per world Bank’s doing Business Survey, On average basis it takes 277 days to enforce contracts in Azerbaijan through Local Court Proceedings with cost ranging up to 18.5% of the total claim value.

**Arbitration:**

Even though, Azerbaijan has ratified the United Nations Convention on the Recognition and Enforcement of Foreign Arbitral Awards 1958 (New York Convention) the primary act governing international arbitration is the Law of the Republic of Azerbaijan on International Commercial Arbitration, dated 18 November 1999. Azerbaijan is also a party to the CIS Agreement on the Mutual Execution of Decisions of Arbitration. Although there is an arbitration centre (The Azerbaijan International Commercial Arbitration Court), its practice is very limited

**Major Arbitration Bodies in the region:**

- International Chamber of Commerce (France)
- International Court of Arbitration (France)
- London Court of International arbitration (United Kingdom)
- Arbitration Institute of the Stockholm Chamber of Commerce (Sweden)

**Major Litigation Bodies in the country:**

- Trial Courts
- Courts of Appeal
- The Supreme Court

**Risk Assessment**

| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| B              | BB            | CCC                 | CCC            | CCC                     | B            |



Country : United Arab Emirates  
GNI Per Capita : US\$-41,010  
Income Category : High income

Region : Middle East  
Population : 9.63 million  
Currency : UAE Dirhams

### **Demography:**

Youth Population (Aged 0-14) : 14.8% Working Age Population (Aged 15-64) : 83.9%

Elderly Population (Aged 65+) : 1.2%

### **Preferred Products:**

Fresh Cheese, Grated Cheese, Processed Cheese, UHT Milk, Condensed Milk, Flavoured Milk, Cream, Yoghurt, Skimmed Milk Powder, Whole Milk Powder, Yoghurt, Butter Milk, Whey Powder, Butter, Lactose, Malt based Milk Products, Infant Formula, Cassein, Casseinates

### **FTA/PTA:**

Nil

### **Major Competitors:**

New Zealand, Saudi Arabia, Netherlands, Australia

### **Major Brands:**



### **Labelling Requirements:**

The UAE standard UAE S.9: 2017 “Labelling for Pre-packaged Food Stuffs” is applicable. Labelling information is required in Arabic, either as part of the packaging or as an affixed label. Labels must be in Arabic only or Arabic/English. The production and expiry dates must be printed on the original manufactured installed label. Companies should consider cultural norms and values when designing and developing product packaging. If the produced is halal (halal logo is printed on the label), the supplier/importer needs to provide halal certificate from one of the accredited halal certifiers in India that are approved by UAE authorities.

### **Dairy Industry Overview:**

Dairy Manufacturers sought to ensure the strong visibility of their products in retail outlets through the heavy use of promotions, bundle offers and optimal shelf positioning. Their brands were also supported by targeted marketing and advertising campaigns at specific consumer audiences.

### **Buying Behaviour:**

UAE is home to more than 100 nationalities. The food products available in the country are therefore very varied so as to cater for different tastes and preferences. In order to foster healthy eating habits, many consumers are trying to prepare their own meals at home and create appetising meals. The focus on new cooking experiences has led manufacturers to invest in segmentation within cream thus creating different options for various types of meals, such as fish, pasta and vegetable dishes, resulting in increased penetration of cream. Different cheeses are consumed on different occasions. Cream



Country : United Arab Emirates  
 GNI Per Capita : US\$-41,010  
 Income Category : High income

Region : Middle East  
 Population : 9.63 million  
 Currency : UAE Dirhams

**Major Banks:**

Emirates NBD, National Bank of Abu Dhabi, Abu Dhabi Commercial Bank, Union National Bank

**Trade Finance Overview:**

Even though UAE has a well-developed financial institutes, Payment delays of many months are common. Commercial Letters of Credit (LCs) are extensively used as a means of payment in overseas trade. The most commonly used types of LCs include: Sight, Deferred Payment, and Revolving. Electronic fund transfers are also widely used in the UAE

**Litigation:**

UAE has a federal constitutional structure comprising of seven Emirates which comes under in each Emirate, UAE Federal Law applies as well as the laws enacted by each Emirate. In case of conflict, UAE Federal Law has primacy. The highest court in UAE is the Court of Cassation (CC) in each respective Emirate. Below the CC is the Court of Appeal (CA) and below that is the Court of First Instance (CFI). In the Emirate of Dubai, a Centre for the Amicable Settlement of Disputes was established in 2009. Disputes of a certain nature (such as claims under AED100, 000) must be referred to the Centre to attempt settlement before litigation can commence

**Arbitration:**

Arbitration is a popular way to resolve disputes in the country. The UAE legislation Recognises and Enforce Foreign Arbitral Awards (New York Convention). DIFC-LCIA Arbitration Centre, originally established in 2008, is essentially a branch of the London Court of International Arbitration (LCIA) which is a highly sought after arbitration institute in the region. Other popular arbitration bodies includes, the Dubai International Arbitration Centre (DIAC), Abu Dhabi Commercial Conciliation and Arbitration Centre (ADCCAC). ADGM, the financial free zone located in Abu Dhabi hosts a representative office of International Chamber of Commerce (ICC) that essentially accepts the registration of arbitration cases under the ICC Rules

**Major Arbitration Bodies in the region:**

- DIFC-LCIA Arbitration Centre
- Dubai International Arbitration Centre (DIAC)
- Abu Dhabi Commercial Conciliation and Arbitration Centre (ADCCAC)
- International Chamber of Commerce Middle East and North Africa office in Abu Dhabi

**Major Litigation Bodies in the country:**

- Court of First Instance (CFI)
- Court of Appeal (CA)
- Court of Cassation (CC)

**Risk Assessment**

|                |               |                     |                |                         |              |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
| CCC            | B             | B                   | B              | C                       | B            |





Country : Hong Kong, China  
 GNI Per Capita : US\$-50,310  
 Income Category : High income

Region : East Asia  
 Population : 7.4 million  
 Currency : Hong Kong Dollar

**Demography:**

Youth Population (Aged 0-14) : 12.67%    Working Age Population (Aged 15-64) : 69.13%  
 Elderly Population (Aged 65+) : 18.2%

**Preferred Products:**

UHT Milk, Flavoured Milk, Yoghurt, Skimmed Milk Powder, Whole Milk Powder, Yoghurt, Butter Milk, Butter, Malt based Milk Products, Infant Formula, Fresh Cheese, Grated Cheese, Processed Cheese, Ripened Cheese

**FTA/PTA:**

Nil

**Major Competitors:**

Netherlands, New Zealand, China, Australia, Ireland, Germany

**Major Brands:**



**Labelling Requirements:**

Macao and Hong Kong requires similar requirement for labelling of dairy products. Food and Hygiene Environmental Department’s Centre for Food Safety administers the labelling regulations in Hong Kong. The labels may be provided in English, Chinese or both languages. If both languages are used on pre-packaged food, the name of the food, ingredient list and nutritional information must be provided in both languages. Hong Kong regulates the use of sweeteners, preservatives, colouring matters, metallic contaminants and pesticides. In the absence of a particular regulation, the HKG refers to Codex standards and/or conducts a risk assessment to determine applicable import requirements. Stick-on product labels are allowed to remedy any non-compliance issues on pre-existing labels and can be applied by Hong Kong importers with permission of the manufacturer

**Dairy Industry Overview:**

Hong Kong Act as a transit hub to its neighbouring countries. Meanwhile, Hong Kong’s local dairy industry has all but disappeared. There is just one licenced dairy farm remaining, according to the Agriculture, Fisheries and Conservation Department, and it is not clear if it still operates. Even local brands like Kowloon Dairy now import their milk from mainland China, which hasn’t always worked well

**Buying Behaviour:**

Customers have preference towards products packages in red colour which reflects the Chinese culture. Dairy consumption has been increasing recently



Country : Hong Kong, China  
 GNI Per Capita : US\$-50,310  
 Income Category : High income

Region : East Asia  
 Population : 7.4 million  
 Currency : Hong Kong Dollar

**Major Banks:**

Hong Kong and Shanghai Banking Corporation (HSBC), Bank of China, Hang Seng Bank, Standard Chartered Bank, Industrial and Commercial Bank of China (ICBC), The Bank of East Asia

**Trade Finance Overview:**

Letters of credit, documentary collections and international remittance services are widely available. The preferred method of quoting is to use the "CIF" (Cost Insurance Freight) or "C and F" (Cost and Freight) destination terms of sale in Hong Kong dollars (HK\$). The U.S. dollar and other freely convertible currencies may be accepted for bids and pro forma invoicing. Terms of payment depend on the relative negotiating strength of the buyers and sellers. Asking for a letter of credit is a standard business practice, and potential customer will not generally interpret this as a sign of mistrust.

**Litigation:**

Court of First Instance of the High Court (CFI) usually commences the Litigation involving large commercial disputes. Foreign lawyers do not have rights of audience in the Hong Kong courts except for special cases. There are two options to enforce a foreign judgment in Hong Kong including The Foreign Judgments (Reciprocal Enforcement) Ordinance where India already have a reciprocal arrangements with Hong Kong. Second option is the common law where an action should be brought by writ on the foreign judgment.

**Arbitration:**

The Hong Kong Government's policy has been to encourage arbitration as an alternative dispute resolution method and the Arbitration Ordinance states that its purpose is to facilitate the fair and speedy resolution of disputes by arbitration without unnecessary expense. In addition to the HKIAC, other arbitration institutions also have a strong presence in Hong Kong, including the International Court of Arbitration of the International Chamber of Commerce (ICC) and the China International Economic and Trade Arbitration Commission (CIETAC).

**Major Arbitration Bodies in the region:**

- Singapore International Arbitration Centre
- Hong Kong International Arbitration Centre.
- China International Economic and Trade Arbitration Commission (CIETAC).

**Major Litigation Bodies in the country:**

- Court of First Instance (CFI)
- Court of Appeal (CA)
- Court of Final Appeal (CFA)

**Risk Assessment**

|                |               |                     |                |                         |              |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
| CCC            | B             | B                   | B              | C                       | B            |



Country : Macau, China  
GNI Per Capita : US\$-78,320  
Income Category : High income

Region : East Asia  
Population : 0.63 million  
Currency : Macanese pataca

### **Demography:**

Youth Population (Aged 0-14) : 14.35% Working Age Population (Aged 15-64) : 73.7%

Elderly Population (Aged 65+) : 11.9%

### **Preferred Products:**

Fresh Cheese, Grated Cheese, Processed Cheese, Ripened Cheese, UHT Milk, Condensed Milk, Flavoured Milk, Cream, Yoghurt, Skimmed Milk Powder, Whole Milk Powder, Yoghurt, Butter Milk, Whey Powder, Butter, Malt based Milk Products, Infant Formula

### **FTA/PTA:**

Nil

### **Major Competitors:**

Netherlands, Ireland, New Zealand, Singapore, Germany, Australia, Malaysia

### **Major Brands:**



### **Labelling Requirements:**

Macao and Hong Kong requires similar requirement for labelling of dairy products. Department for Food Safety administers the labelling regulations in Macao. The labels may be provided in English, Chinese or both languages. If both languages are used on pre-packaged food, the name of the food, ingredient list and nutritional information must be provided in both languages. Hong Kong regulates the use of sweeteners, preservatives, coloring matters, metallic contaminants and pesticides. In the absence of a particular regulation, Macao refers to Codex standards and/or conducts a risk assessment to determine applicable import requirements. Stick-on product labels are allowed to remedy any non-compliance issues on pre-existing labels and can be applied by Macao/Hong Kong importers with permission of the manufacturer

### **Dairy Industry Overview:**

Macao Act as a transit hub to its eastern neighbouring countries. A rules-based import regime and sophisticated infrastructure for trade servicing, including financing and logistics, facilitates Macao's role as a trade destination and regional hub to China and other regional markets. Macao also offers duty free entry to most of the food products and thus augmenting its potential.

### **Buying Behaviour:**

Macanese cuisine is a blend of Chinese and Portuguese cultures. . With a population of about 601,969 residents living within 30.3 square kilometres, Macau is one of the densely populated regions of the planet. Customers have preference towards products packages in red colour which reflects the Chinese culture



Country : Macau, China  
 GNI Per Capita : US\$-78,320  
 Income Category : High income

Region : East Asia  
 Population : 0.63 million  
 Currency : Macanese pataca

**Major Banks:**

Bank of China ICBC (Industrial and Commercial Bank of China) Macau, Tai Fung BankLuso International Banking, Banco Nacional Ultramarino

**Trade Finance Overview:**

Hong Kong and Macao has similar system for trade finance, Letters of credit, documentary collections and international remittance services are widely available. The preferred method of quoting is to use the "CIF" (Cost Insurance Freight) or "C and F" (Cost and Freight) destination terms of sale in Hong Kong dollars (HK\$).

**Litigation:**

The legal system of Macau is based on civil law. The foundations of the system are largely similar to Portuguese law. Macau SAR has ratified the WTO Trade Facilitation Agreement (TFA), which contains provisions regarding expediting the movement, release and clearance of goods, including goods in transit. It also sets out measures for effective cooperation between customs and other appropriate authorities on trade facilitation and customs compliance issues.

**Arbitration:**

Commercial arbitration has not traditionally been used frequently in the Macau Special Administrative Region (MSAR) However, its use has been steadily rising in recent years as MSAR attracts more overseas investors and businesses. Further, international arbitration institutions such as the Chartered Institute of Arbitrators (CIArb) and the Hong Kong Institute of Arbitrators have been active in the region with arbitration courses being increasingly offered to Macau practitioners.

**Major Arbitration Bodies in the region:**

- World Trade Center Macau Arbitration Center
- Voluntary Arbitration Center of the Macau Lawyers' Association
- Hong Kong International Arbitration Centre.
- China International Economic and Trade Arbitration Commission (CIETAC).

**Major Litigation Bodies in the country:**

- Court of First Instance (CFI)
- Court of Second Instance (CSI)
- Court of Final Appeal (CFA)

**Risk Assessment**

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Sovereign risk   Currency risk   Banking sector risk   Political risk   Economic structure risk   Country risk

CCC                      B                      B                      B                      C                      B

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Country : Saudi Arabia  
GNI Per Capita : US\$-21,540  
Income Category : High Income

Region : Middle East  
Population : 33.6 million  
Currency : Saudi Riyal

### **Demography:**

Youth Population (Aged 0-14) : 24.70% Working Age Population (Aged 15-64) : 71.81%

Elderly Population (Aged 65+) : 3.50%

### **Preferred Products:**

UHT Milk, Skimmed Milk Powder, Cream, Whole Milk Powder, Butter Milk, Whey Powder, Butter, Ghee, Processed Cheese, Other Cheese, Lactose, Malt based Milk Products, Infant Formula, Cassein, Casseinates

### **FTA/PTA:**

Nil

### **Major Competitors:**

New Zealand, Denmark, United Arab Emirates, France, Netherlands

### **Major Brands:**



### **Labelling Requirements:**

The Saudi Arabian Standards Organization (SASO) is the Saudi organization responsible for setting national standards. Labels must be in Arabic for any imported foodstuff item, which should basically reveal the same information on the container as in the foreign language, i.e., ingredients, country of origin, manufacturer, shelf life, instructions for use, etc. (samples imported must be labelled at least in English).

### **Dairy Industry Overview:**

Dairy industry is well advanced with latest technologies such as monitoring blood levels of cattle in order to facilitate feed control, aiming at optimal yield. Dairy Companies have increased import of high yielding cattle for production of milk. Trade shows such as Horica, Gulf food etc are conducted. Additionally, Saudi Government is providing incentives to reduce the production costs of legally registered dairies. Government has also put forward regulations on controlling new dairy companies since there is an issue of Ground water level depletion where dairy farming is a water intensive activity. Al marai Company has one of the largest cattle farms in the world.

### **Buying Behaviour:**

There is a large number of Indian population which consumes variety of dairy products including desi products. Saudi citizens have grown to be more diet sensitive including dairy as important product in their diet. Traditional varieties of cheese such as the halloumi cheese have good demand in the market. Yet only few dairy companies supplies that. Lactne (A Thick variety of dahi) is also a popular



Country : Saudi Arabia  
 GNI Per Capita : US\$-21,540  
 Income Category : High Income

Region : Middle East  
 Population : 33.6 million  
 Currency : Saudi Riyal

**Major Banks:**

Al Ahli Bank, Al Rajhi Bank, Riyad Bank, Samba Finacial, Banque Saudi Fransi, Saudi British Bank

**Trade Finance Overview:**

An irrevocable letter of credit (L/C) is the instrument normally used for Saudi imports. Open account, cash in advance and documentary collections are also acceptable if both parties agree. Maximum or minimum credit terms are not required.

**Litigation:**

Saudi Arabia implements sharia law, which does not have time limits for raising a claim. Therefore, the right to file a claim in a particular jurisdiction may be overruled; however, the right to the claim itself can proceed in a different court. Commercial disputes are typically brought as claims in the commercial courts. cheques, which can only be considered an execution instrument if a claim is pursued within six months of issue. Both promissory notes and bills of exchange must be pursued within three years for them to be considered as an execution document

**Arbitration:**

The Arbitration Law is largely based on the UNCITRAL Model Law, while still maintaining the essential principles of Shari'a. A party can ask for the case to be dismissed at the first hearing if the dispute was brought in the wrong court or if the parties agree to resolve the dispute through arbitration. Saudi Arabia signed the Riyadh Convention, which deals with the recognition and enforcement of foreign judgments and arbitral awards without reviewing the subject matter of the underlying dispute

**Major Arbitration Bodies in the region:**

- The Saudi Centre for Commercial Arbitration (SCCA)
- DIFC-LCIA Arbitration Centre in UAE
- Dubai International Arbitration Centre (DIAC)
- Abu Dhabi Commercial Conciliation and Arbitration Centre (ADCCAC)
- International Chamber of Commerce Middle East and North Africa office in Abu Dhabi

**Major Litigation Bodies in the country:**

- First degree courts
- Court of Appeal
- Supreme Court

**Risk Assessment**

|                |               |                     |                |                         |              |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
| BBB            | BBB           | BBB                 | BB             | BBB                     | BBB          |



Country : Cambodia  
GNI Per Capita : US\$-1,380  
Income Category : Lower middle income

Region : South East Asia  
Population : 16.2 million  
Currency : Cambodian riel

### **Demography:**

Youth Population (Aged 0-14) 30.92% Working Age Population (Aged 15-64) : 64.2%

Elderly Population (Aged 65+) : 4.85%

### **Preferred Products:**

Butter, UHT Milk, Skimmed Milk Powder Whole Milk Powder, Infant Formula, Flavoured Milk, Yoghurt, Butter Milk, Whey Powder

### **FTA/PTA:**

Nil

### **Major Competitors:**

Malaysia, Thailand, Singapore, France, Vietnam

### **Major Brands:**



### **Labelling Requirements:**

Institute of Standards of Cambodia is the watch dog governing standards in the country. Labels or marks are not mandatory for all imports; however, products need to have their labels certified and registered with relevant ministries before importing into Cambodia. Labels for different products are regulated and certified by different ministries. In Some cases of regulated products, a pre-approval notice from Cambodia Import-Export Inspection and Fraud Repression Directorate General (CamControl) is required. More information on labeling and marking requirements can be found on the Institute of Standards of Cambodia website.

### **Dairy Industry Overview:**

Cambodia was self-sufficient in milk and they even exported milk to neighbouring countries. But the civil war in the late 1960's reversed the trend. Afterwards, Cambodia has been heavily reliant on imports for its dairy needs, sourcing from neighbours as well as France, Australia and New Zealand.

### **Buying Behaviour:**

Even though the milk consumption by Cambodians has been low when compared with other countries in the region, the consumption is growing and producers see potential in greenfield operations. Consumers are also started to become health conscious and have a greater appreciation for the benefits of consuming dairy products. Recently, there has been growth in western fast food and coffee chains in the country, contributing towards increases uses of milk and cheese in their products.



Country : Cambodia  
 GNI Per Capita : US\$-1,380  
 Income Category : Lower middle income

Region : South East Asia  
 Population : 16.2 million  
 Currency : Cambodian riel

**Major Banks:**

ACLEDA Bank, Canadia Bank, Foreign Trade Bank of Cambodia, Union Commercial Bank

**Trade Finance Overview:**

For large-scale business transactions, exporters and importers are required to have bank guarantees, such as shipping, bid, payment, advance payment, performance, and retention money guarantees. Instruments and methods of payment offered by banks vary, ranging from import and export documentary collections, documentary export and import credits, open account, consignments, cash-in-advance, and guarantees. However, Letters of credits are the most common method used to facilitate payment and are preferred over bank guarantees, cash in advance, and open accounts.

**Litigation:**

The 1993 Cambodian Constitution is the supreme law and organizes Cambodia’s government and institutions. The judicial system has a three tier structure. There is a high prevalence of corruption in the judicial system in the country which often makes litigation a last resort when it comes to International Commercial disputes.

**Arbitration:**

National Commercial Arbitration Centre for commercial disputes (NCAC) is a private institution because it is established and managed by a governing board of private individuals. In case of disputes arising from the performance of contractual obligations, NCAC is a popular choice in Cambodia. Parties in the arbitration can voluntarily implement the arbitral award between themselves by following the verdict of the award. However, if one party does not obey the award and refuses to settle the claims, the party who wins the arbitral award can file an application with the court requesting it to issue an “order to enforce the arbitral award”.

**Major Arbitration Bodies in the region:**

- Cambodian National Commercial Arbitration Centre (NCAC)
- Arbitration Council Foundation (ACF)
- Hong Kong International Arbitration Centre.
- Singapore International Arbitration Centre

**Major Litigation Bodies in the country:**

- courts of first instance
- Court of Appeal
- Supreme Court

**Risk Assessment**

|                |               |                     |                |                         |              |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
| B              | B             | B                   | CC             | CCC                     | B            |





Country : Algeria  
GNI Per Capita : US\$-4,060  
Income Category : Upper middle income

Region : North Africa  
Population : 42.2 million  
Currency : Algerian dinar

### **Demography:**

Youth Population (Aged 0-14) : 30.92%      Working Age Population (Aged 15-64) : 64.2%

Elderly Population (Aged 65+) : 4.85%

### **Preferred Products:**

Skimmed Milk Powder, Lactose, Butter Oil, Butter, Infant Formula, Malt Based Formula

### **FTA/PTA:**

Nil

### **Major Competitors:**

New Zealand, France, Netherlands, Poland, Belgium

### **Major Brands:**



### **Labelling Requirements:**

Algerian government regulations stipulate that imported products, particularly consumer goods, must be labelled in Arabic. This regulation is strictly enforced. Though not required, it is also helpful to label products in French.

### **Dairy Industry Overview:**

The number dairy processing plants in Algeria has increased from 88 in 2009 to 182 in 2015, with 15 of these factories being owned and operated by the Ministry of Agriculture. Fresh Milk is subsidised by the Algerian government. In order to decrease the huge trade deficit caused by dairy imports, the Algerian government is working with strategic partners in the international dairy industry, aiming to increase its dairy production. In order to increase productivity, the government has put forth plans to import large number of cattle from abroad.

### **Buying Behaviour:**

Cheese is one of the highly consumed dairy products in Algeria. Fluctuations in the international price of powder milk remain the biggest challenge for cheese manufacturers in Algeria. Indeed, due to the limited availability of locally produced milk, which is the most important raw ingredient in cheese, local cheese production is highly depending on milk imports. Mostly due to the growing population, there is trend of increase in the consumption of drinking milk products in the country. Growth in the near future is attributed mainly towards dynamic and innovative areas of dairy such as pro- and pre-biotic yoghurt, enriched and fortified yoghurt, drinking yoghurt in other pack sizes, and unusual flavours for spoonable flavoured yoghurt.



Country : Algeria  
 GNI Per Capita : US\$-4,060  
 Income Category : Upper middle income

Region : North Africa  
 Population : 42.2 million  
 Currency : Algerian dinar

**Major Banks:**

Société Générale Algérie, Banque Nationale d'Algérie (BNA), Arab Bank Algeria, Al Salam Bank Algeria, Caisse Nationale d'Épargne et de Prévoyance (CNEP), Caisse Nationale de Mutualité Agricole (CNMA)

**Trade Finance Overview:**

Algerian Importers dealing with a transaction value worth 40,000 \$ or more has to mandatorily handle the payments by Letter of Credits (L/C). Algerian government also reduced the terms for L/Cs to 60 days or less leading to nationwide distress on Importers. On the flipside, This Move is considered as a step towards ensuring guaranteed payments to exporters.

**Litigation:**

The Judicial system in Algeria is based on three-tiered Structure. Unlike most of the African countries who has infamous judicial set ups hampered by delays and/or enforcement issues; Algeria stands apart from the crowd with a relatively efficient and speedy litigation mechanism The legal system is widely considered as a civil law system based on codified laws. Islamic law plays a role in specific areas including personal status, family and inheritance matters

**Arbitration:**

Algeria have largely aligned their laws with French arbitration rules . Centre for Conciliation, Mediation and Arbitration (Le Centre), in the Algerian Chamber of Commerce and Industry (CACI) facilitates arbitration in algeria.

**Major Arbitration Bodies in the region:**

- Mediation and Arbitration Centre of the Algerian Chamber of Commerce and Industry
- Annaba Mediation & Arbitration Centre (Algeria)
- Euro-Mediterranean Centre for Mediation & Arbitration(Morocco)
- International Court of Arbitration (France)
- Cairo Regional Centre for Intemational Commercial Arbitration (Egypt)

**Major Litigation Bodies in the country:**

- courts of first instance
- Court of Appeal
- Supreme Court & State Council

**Risk Assessment**

| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| B              | B             | B                   | CCC            | B                       | B            |



Country : Ghana  
GNI Per Capita : US\$-2,130  
Income Category : Lower middle income

Region : Sub Saharan Africa  
Population : 29.7 million  
Currency : Ghanaian cedi

### **Demography:**

Youth Population (Aged 0-14) 37.13% Working Age Population (Aged 15-64) : 59.73%

Elderly Population (Aged 65+) : 3.14%

### **Preferred Products:**

UHT Milk, Butter Oil/Ghee, Skimmed Milk Powder, Infant Milk FOOD, Malt based Milk Food, Flavoured Milk, Whey Powder.

### **FTA/PTA:**

Nil

### **Major Competitors:**

New Zealand, Netherlands Nigeria,, France, Germany

### **Major Brands:**



### **Labelling Requirements:**

Under Ghana's General Labeling Rule, all products imported or produced locally should bear the labelling and Marking in English. Labelling/Markings can include Name of product, Net mass or weight or net volume of content, Composition of content of product, Date of manufacture of product, Date of expiry of product (or best before date), Batch or lot number of product, Name and address of manufacturer or agent, Directions for use, if relevant; Any special instructions for storage, handling, along with any special warnings (if any).

### **Dairy Industry Overview:**

Ghana's Ministry of Food and Agriculture has facilitated action plan to import cattle from abroad to help build the domestic dairy industry. Dairy farmers and producers in Ghana still resort to the traditional methods of such as rearing cattle under free roaming system instead of modern captive farming approach.

### **Buying Behaviour:**

With a growing population and urbanization trends, Ghana is experiencing an increase in dairy product consumption as diets are changing among citizens. Earlier, Cold chain issues has limited Ghana to the consumption of ultra high-temperature pasteurized products. Improved infrastructure is causing a push for more fresh dairy and a bigger local dairy industry.



Country : Ghana  
 GNI Per Capita : US\$-2,130  
 Income Category : Lower middle income

Region : Sub Saharan Africa  
 Population : 29.7 million  
 Currency : Ghanaian cedi

**Major Banks:**

Barclays Bank of Ghana, Fidelity Bank, Eco Bank Ghana, Access Bank, Agricultural Development Bank (ADB), Bank of Africa Ghana

**Trade Finance Overview:**

Traditional trade finance instruments, such as letters of credit, collections and funds transfer are available to exporters. If a letter of credit is chosen, the exporter should require an irrevocable, confirmed letter of credit to ensure prompt, reliable payment

**Litigation:**

Litigation is the popular mode of dispute resolution mechanism for resolving large commercial disputes in Ghana. Large commercial disputes with claims exceeding GHC25,000 are usually commenced in the Commercial Division of the High Court. The Judicial System is of three tier structure. Low tier courts including the Circuit Court and the District Court and the Superior Courts, consisting of the High Court, the Court of Appeal and the Supreme Court.

**Arbitration:**

Arbitration is gaining ground in Ghana as a preferable alternative to litigation due to the cost, delay and alienation associated with litigation. Under the ADR Act, any settlement reached through mediation and any arbitral award can be enforced in the same manner as a judgment of the court.

**Major Arbitration Bodies in the region:**

- Ghana Arbitration Centre
- Ghana Association of Certified Mediators & Arbitrators (GHACMA)
- Algerian Chamber of Commerce & Industry (Algeria)
- Permanent Court for Arbitration at the Mauritius Chamber of Commerce & Industry (Mauritius)
- Cairo Regional Centre for International Commercial Arbitration (Egypt)

**Major Litigation Bodies in the country:**

- Circuit Court/District Court
- Court of Appeal/High Court
- Supreme Court

**Risk Assessment**

|                |               |                     |                |                         |              |
|----------------|---------------|---------------------|----------------|-------------------------|--------------|
| Sovereign risk | Currency risk | Banking sector risk | Political risk | Economic structure risk | Country risk |
| B              | BB            | B                   | BB             | CCC                     | B            |

## **8.5 Landing Price of the Product in the Importing Market**

Prices of the dairy products exported from India may increase significantly by the time it reach the destination market. This makes it imperative for the exporters to find out the approximate landing price for the dairy products in order to make optimal marketing decisions. Major components that constitute the landing cost in case of seaborne trade includes the following

- Cost of transport from warehouse/production site to the Indian port (origin port)
- Port handling charges (origin port)
- Ocean Freight
- Marine Cargo Insurance
- Port Handling charges (Destination port)
- Customs duty applied in importing country

Port handling charges may include service costs such as Export Agency Documentation Fee, Ecological and Radiological Service, Freight Forwarder commission, Terminal Handling charges, Inland Haulage Container Weighing charges, Documentation charges etc. Marine cargo insurance also adds up a significant portion of the additional cost incurred with the goods in transit. Additionally, Ocean freights also varies based on numerous factors such as the cargo volume, geographical distance, risks associated with the shipping route etc. Since ocean freight costs affect the price competency of the products in the destination market, it is essential to understand the prevailing freight charges from Indian ports to the major shipping ports in the world. A detailed Ocean freight information from Indian ports to other International ports has been given in Table 8. 1.

*Table 8. 1 Ocean Freight from Indian Ports to other major sea ports*

| Origin Port | Destination Port              | Major shipping Companies  | Container Type           | Days of voyage                     | Origin port charges | Ocean Freight | Destination port charges | Approximate Total Charges |
|-------------|-------------------------------|---|--------------------------|------------------------------------|---------------------|---------------|--------------------------|---------------------------|
| Mumbai      | Jebel Ali, UAE                | Acomarit, Red Sea Shipping Company, Clarke Global logistic, NG Shipping                 | 20 Ft Standard Container | 6 days 14 hours- 6 days 15 hours   | \$203.00            | \$224.00      | \$328.00                 | \$755.00                  |
| Mumbai      | Jeddah, Saudi Arabia          | Seagate logistic, Acomarit, Red Sea Shipping Company                                    | 20 Ft Standard Container | 12 days 12 hours- 12 days 16 hours | \$203.00            | \$372.00      | \$325.00                 | \$900.00                  |
| Mumbai      | Salalah, Oman                 | Cargopost, Acomarit, Red Sea Shipping Company   | 20 Ft Standard Container | 6 days 12 hours- 6 days 19 hours   | \$203.00            | \$224.00      | \$325.00                 | \$752.00                  |
| Mumbai      | Alexandria, Egypt             | Seagate logistic, Cargopost, Acomarit, Alphacosta Ukraine LLC                           | 20 Ft Standard Container | 15 days 5 hours                    | \$203.00            | \$622.00      | \$325.00                 | \$1,150.00                |
| Mumbai      | Port Said (Suez Canal), Egypt | Red Sea Shipping Company, Seagate logistic, Cargopost, Acomarit, Alphacosta Ukraine LLC | 20 Ft Standard Container | 14 days 18 hours- 14 days 21 hours | \$203.00            | \$622.00      | \$325.00                 | \$1,150.00                |
| Mumbai      | Mersin, Turkey                | IS-LOGIX, Acomarit, CMS Shipping  | 20 Ft Standard Container | 15 days 15 hours- 15 days 21 hours | \$203.00            | \$642.00      | \$325.00                 | \$1,170.00                |
| Mumbai      | Tanger Med, Morocco           | Acomarit  | 20 Ft Standard Container | 20 days 23 hours- 21 days          | \$203.00            | \$520.00      | \$250.00                 | \$973.00                  |
| Mumbai      | Algeciras, Spain              | Acomarit, Falcon Frieghtlink P ltd  | 20 Ft Standard Container | 20 days 23 hours                   | \$203.00            | \$693.00      |                          | \$896.00                  |
| Mumbai      | Djibouti, Djibouti            | Cargopost, Acomarit   | 20 Ft Standard Container | 10 days 12 hours- 10 days 17 hours | \$203.00            | \$765.00      | \$325.00                 | \$1,293.00                |
| Mumbai      | Durban, South Africa          | Seagate logistic, Acomarit, Red Sea Shipping Company                                    | 20 Ft Standard Container | 16 days 14 hours- 17 days 7 hours  | \$203.00            | \$1,030.00    | \$165.00                 | \$1,398.00                |
| Mumbai      | St. Petersburg, Russia        | Acomarit, Merios trans impex LLC  | 20 Ft Standard Container | 28 days 13 hours                   | \$203.00            | \$826.00      | \$120.00                 | \$1,149.00                |

| Origin Port | Destination Port                 | Major shipping Companies  | Container Type           | Days of voyage                      | Origin port charges | Ocean Freight | Destination port charges | Approximate Total Charges |
|-------------|----------------------------------|---|--------------------------|-------------------------------------|---------------------|---------------|--------------------------|---------------------------|
| Mumbai      | Marsaxlokk, Malta                | Acomarit  | 20 Ft Standard Container | 17 days 18 hours - 17 days 19 hours | \$203.00            | \$693.00      |                          | \$896.00                  |
| Mumbai      | Antwerp, Belgium                 | Acomarit, Falcon Frieghtlink P ltd  | 20 Ft Standard Container | 25 days 6 hours                     | \$203.00            | \$540.00      | \$256.00                 | \$999.00                  |
| Mumbai      | Rotterdam, The Netherlands       | Acomarit  | 20 Ft Standard Container | 25 days 6 hours- 25 days 8 hours    | \$203.00            | \$540.00      | \$256.00                 | \$999.00                  |
| Mumbai      | Hamburg, Germany                 | Acomarit  | 20 Ft Standard Container | 26 days 1 hour                      | \$203.00            | \$673.00      |                          | \$876.00                  |
| Mumbai      | Colon, Panama                    | Acomarit  | 20 Ft Standard Container | 34 days 19 hours                    | \$203.00            | \$1,948.00    | \$325.00                 | \$2,476.00                |
| Mumbai      | Shanghai, China                  | Acomarit  | 20 Ft Standard Container | 19 days 17 hours                    | \$203.00            | \$367.00      |                          | \$570.00                  |
| Mumbai      | Hong Kong                        | Acomarit, Cargopost,  | 20 Ft Standard Container | 17 days 9 hours                     | \$203.00            | \$142.00      | \$325.00                 | \$670.00                  |
| Mumbai      | Tianjin, China                   | A1 Cargo Carriers   | 20 Ft Standard Container | 20 days 15 hours                    | \$203.00            | \$30.00       | \$300.00                 | \$533.00                  |
| Mumbai      | Samarinda, Indonesia             | Falcon Freightlink P Ltd, Alphacosta Ukraine LLC, Cargopost, Seagate Logistic | 20 Ft Standard Container | 16 Days 4 hours                     | \$203.00            | \$510.00      |                          | \$713.00                  |
| Mumbai      | Saigon/Ho Chi Minh City, Vietnam | Acomarit, Cargopost   | 20 Ft Standard Container | 14 days 20 hours                    | \$203.00            | \$367.00      | \$194.00                 | \$764.00                  |
| Mumbai      | Manila, Philippines              | Acomarit, Seagate Losistic, Red Sea Shipping Company                          | 20 Ft Standard Container | 17 days 1 hour                      | \$203.00            | \$204.00      | \$325.00                 | \$732.00                  |
| Mumbai      | Laem Chabang, Thailand           | Acomarit, Seagate Losistic, Red Sea Shipping Company                          | 20 Ft Standard Container | 15 days 7 hours                     | \$203.00            | \$204.00      | \$95.00                  | \$502.00                  |
| Chennai     | Pasir Gudang, Malaysia           | THE LOGISTICAL SOLUTIONS CO. PTE LTD  | 20 Ft Standard Container | 8 days 2 hours                      | \$203.00            | \$168.00      | \$325.00                 | \$696.00                  |

| Origin Port | Destination Port         | Major shipping Companies   | Container Type           | Days of voyage   | Origin port charges | Ocean Freight | Destination port charges | Approximate Total Charges |
|-------------|--------------------------|--|--------------------------|------------------|---------------------|---------------|--------------------------|---------------------------|
| Chennai     | Port Klang, Malaysia     | PSAFL SPEEDMARK FORWARDING PVT LTD, THE LOGISTICAL SOLUTIONS CO. PTE LTD | 20 Ft Standard Container | 7 days 11 hours  | \$203.00            | \$5.00        | \$325.00                 | \$533.00                  |
| Chennai     | Tanjung Priok, Indonesia | THE LOGISTICAL SOLUTIONS CO. PTE LTD                                     | 20 Ft Standard Container | 11 days 14 hours | \$203.00            | \$204.00      | \$95.00                  | \$502.00                  |
| Chennai     | Surabaya, Indonesia      | THE LOGISTICAL SOLUTIONS CO. PTE LTD                                     | 20 Ft Standard Container | 12 days 11 hours | \$203.00            | \$229.00      |                          | \$432.00                  |
| Chennai     | Chittagong, Bangladesh   | TopUniverse Express Private Limited                                      | 20 Ft Standard Container | 16 days          | \$203.00            | \$561.00      | \$525.00                 | \$1,289.00                |
| Chennai     | Yangon, Myanmar          | THE LOGISTICAL SOLUTIONS CO. PTE LTD                                     | 20 Ft Standard Container | 6 days 5 hours   | \$203.00            | \$790.00      |                          | \$993.00                  |
| Chennai     | Colombo, Sri Lanka       | PSAFL SPEEDMARK FORWARDING PVT LTD                                       | 20 Ft Standard Container | 4 days 5 hours   | \$203.00            | \$285.00      | \$325.00                 | \$813.00                  |

*Note: Freight charges for refrigerated/reefer containers may increase 70% to 80% of the cost of a standard containers*

*Source: <https://www.searates.com>*



## 8.6 Market Intelligence for Dairy Exports

Access to real time market information is considered to be one of the pivotal factors that support exporters when they are venturing into overseas markets. Data dissemination portals for various Market Intelligence Components is provided in Table 8. 2.

*Table 8. 2 Data Dissemination Portals for Market Intelligence*

| International Market Intelligence Component | Data Base Name  | URL                                 |
|---|---|-------------------------------------|
| Commodity Trading                           | Global Dairy Trade (GDT)  | globaldairytrade.info               |
|   | Chicago Mercantile Exchange (CME)   | cmegroup.com                        |
|   | CLAL  | clal.it                             |
|   | Agriculture and Marketing Service (AMS) of USDA   | ams.usda.gov                        |
|   | European Energy Exchange  | eex.com                             |
| Freight Charges                             | SeaRates  | searates.com                        |
|   | Freightos   | fbx.freightos.com                   |
|   | Baltic Exchange   | balticexchange.com                  |
|   | Shanghai Shipping Exchange -Containerized Freight Index   | en.sse.net.cn                       |
| Tariff and Non Tariff Measures              | International Trade Centre-Market Access Map (NTM details)  | macmap.org                          |
|   | UNCTAD Trains (NTM details)   | trains.unctad.org                   |
|   | International Trade Administration, U.S. Department of Commerce (Market specific product standards)                   | trade.gov                           |
|   | International Trade Administration, U.S. Department of Commerce (Market specific Packagin and Labelling requirements) | export.gov                          |
|   | Indian Trade Portal (Market Specific Tariff Details)  | indiantradeportal.in                |
|   | Doing Business Portal of the world Bank (Time, Cost and Documentation requirements)                                   | doingbusiness.org                   |
| Product and International Market Trends     | International Trade Centre-Trade Map (Trade Data)   | trademap.org                        |
|   | UN Comtrade Database (Trade Data)   | comtrade.un.org                     |
|   | World Intergrated Trade Solution of the World Bank (Trade Data)   | wits.worldbank.org                  |
|   | Euromonitor International (Market trends)   | euromonitor.com                     |
|   | Statista (Market trends)  | statista.com                        |
|   | The Economist Intelligence Unit (Market Trends&Risk Assessment)   | eiu.com                             |
| Arbitration and Litigation                  | Practical Law-Thomson Reuters   | uk.practicallaw.thomsonreuters.com/ |
|   | United Nations Commission on International Trade Law  | uncitral.un.org                     |

*Source: Author's Compilation*

# CHAPTER 9: ROADMAP AND STRATEGIES TO PROMOTE EXPORT OF DAIRY PRODUCTS FOR THE ORGANIZED DAIRY SECTOR IN INDIA

## 9.1 Introduction

The present study entitled “Developing a Roadmap and Strategy for Dairy Exports by the Organised Dairy Sector in India” has endeavoured to capture the current scenario, challenges and prospects that the Indian Dairy Sector is confronted with. The study examined various trends with respect to international trade in dairy products as well as aspects such as quality compliances, tariff and Non-Tariff Measures, technical competence, and international regulations to identify the challenges and prospects for Indian Dairy exports. A ready to use template to enable Indian dairy exporters ascertain potential export markets for various dairy products has been one of the major insights of the study along with a detailed country profile of the potential markets to assist exporters about the various international trade nuances of the export market. The study also consisted of a primary survey and encapsulates insights on the challenges and issues faced by domestic producers, Indian and foreign dairy exporters and importers within India and across the world.

The study was based on three major objectives summarised below:

- Objective 1: Analysing India's domestic production and marketing challenges for dairy products from stakeholder's perspective and suggesting a future roadmap
- Objective 2: Analysis of India's International Trade in Dairy Products
- Objective 3: Examining challenges in International Markets faced by Indian Dairy Products and suggesting future export promotion strategies

The study endeavoured to examine the objectives using a systematic approach by analysing the following

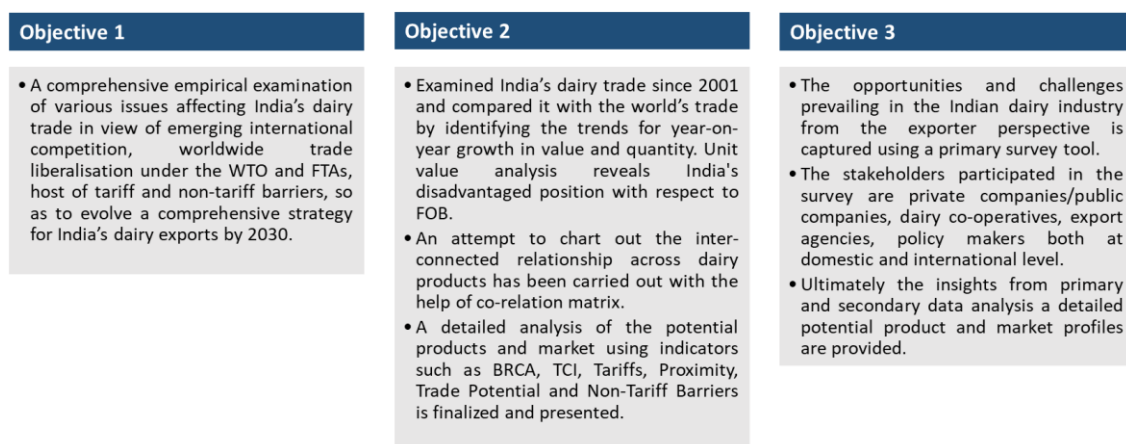


Figure 9.1 Deciphering the Objectives of the study

## 9.2 Competitive and Potential Dairy Products: Export Markets

The most traded dairy product in the world market in the year 2018 is Cheese (excluding fresh cheese, incl. whey cheese, curd, processed cheese, blue-veined cheese and other cheese containing veins produced by "Penicillium roqueforti", and grated or powdered cheese):040690. The traded value stands at \$19730211 Thousand. Similarly, the second highest traded dairy product is Malt based Infant Food (Food preparations for infant use, put up for retail sale, of flour, groats, meal, starch or malt extract, not containing cocoa or containing < 40% by weight of cocoa calculated on a totally defatted basis, n.e.s. and of milk, sour cream, whey, Yoghurt, kephir or similar goods of heading 0401 to 0404, not containing cocoa or containing < 5% by weight of cocoa calculated on a totally defatted basis, n.e.s): 190110 However, India's has a weak position in both categories.

Products that are strongly positioned by India like Fats and oils derived from milk, and dehydrated butter and ghee (excluding natural butter, recombined butter and whey butter): 040590 and Milk and cream in solid forms, of a fat content by weight of > 1.5%, sweetened: 040229 are less traded in the global market during 2018.

Based on India's dairy product position in the world market and value traded, two product categories have been identified; "Potential Thrust Products" and "Retain Existing Products". Refer Figure 9.2 and Figure 9.3.



Figure 9. 2 List of Potential Thrust Products



*Figure 9.3 “Retain Existing Category” Product*

Potential Thrust Category: Products where the world demand is high and India’s competitive position in these categories is low.

Retain Existing Category: Products where the world demand is high and India’s competitive position in these categories is emerging.

### **9.3 Prospective Global Markets for Dairy Products**

A thorough analysis of the existing and potential markets has been done for India’s dairy products. The markets identified are classified into important existing markets, potential markets and markets with strict NTM barriers. It has to be noted that only 30-40 % of the world dairy market is available to India to expand its market. The major markets fall under European Union and other developed countries with stringent NTM barriers. 13-15% of the dairy market is in middle-east which India is already catering.

#### **9.3.1 Butter**

Butter is one of the products where India is already exporting to the important markets of Middle-East and Southeast-Asia. Other than these markets, India may expand to Oman, Qatar and Kazakhstan. If

traceability and NTM is fulfilled; Russia, China and some developed markets such as the United States and Japan could be an important market in this product category.

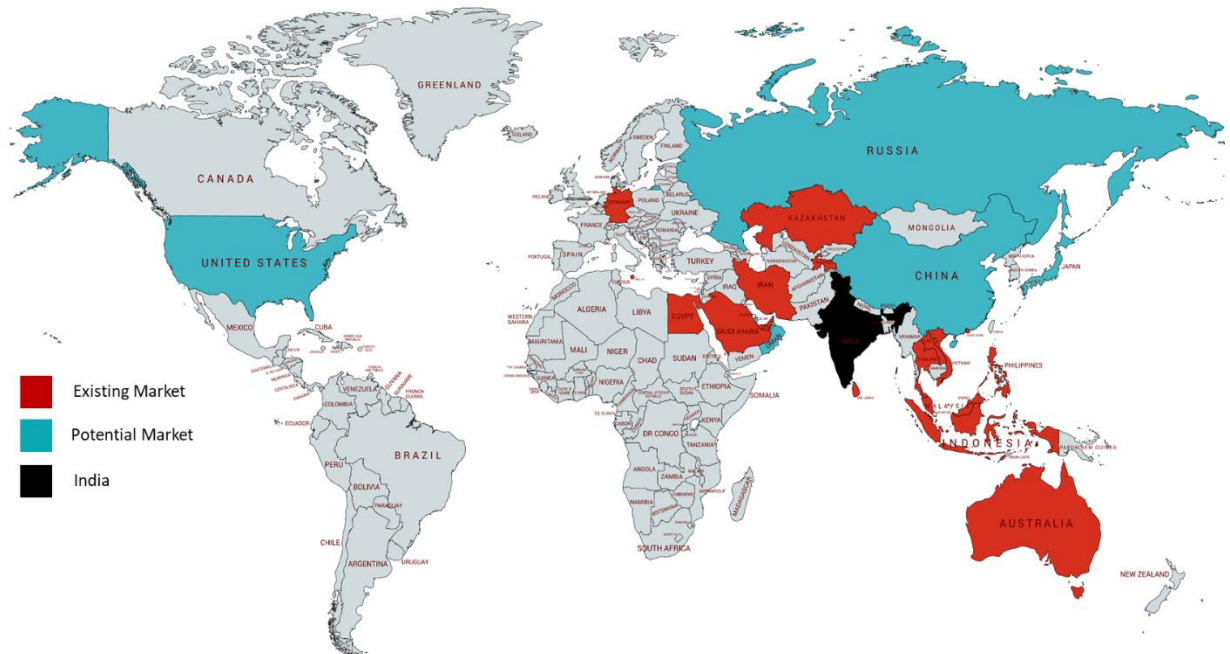
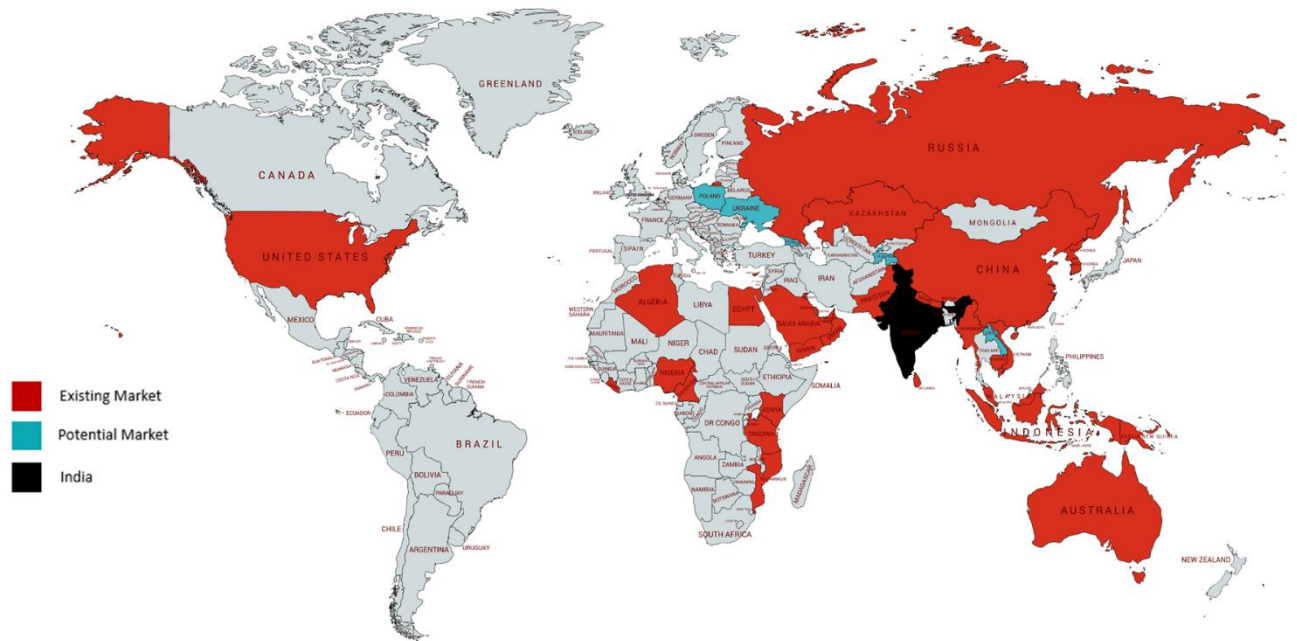


Figure 9. 4 Butter: Expandable and Existing Markets

### 9.3.2 Ghee

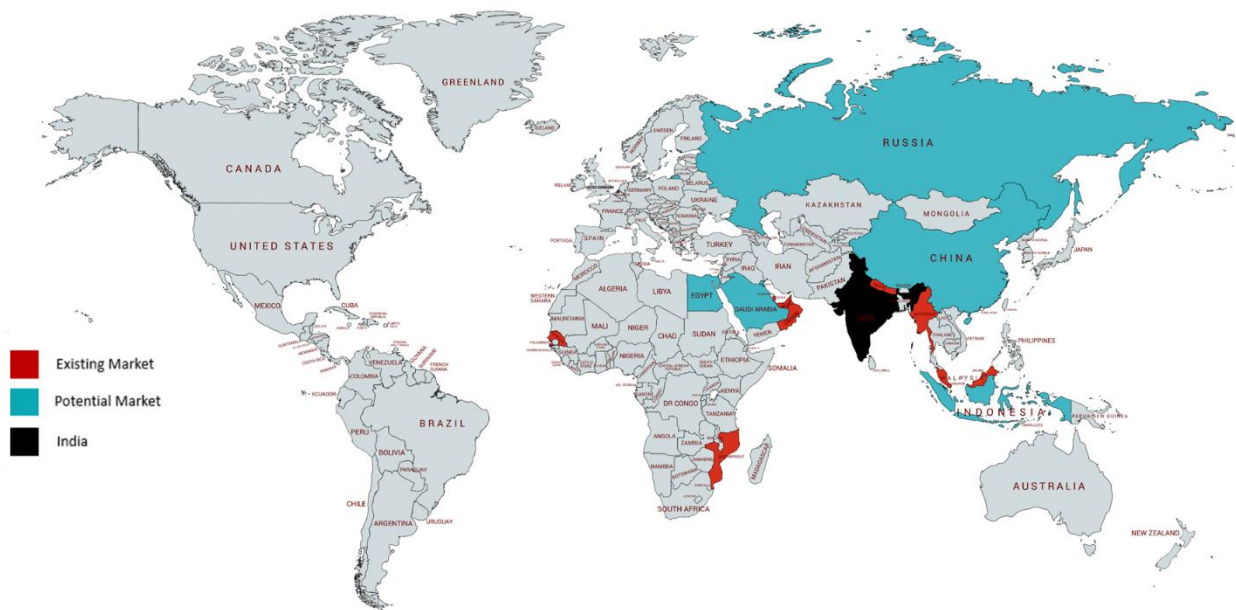
Ghee is another important product which India is exporting to various important markets and it is also in the competitively positioned category. In general, Ghee is targeted to the Indian Diaspora and is already being sent to countries like USA, Australia, Kazakhstan, Pakistan along with South East Asian and Middle-East countries. Other potential countries where India may expand using the Indian diaspora route could be Ukraine, Poland, Tunisia, Georgia and Laos.



*Figure 9. 5 Ghee: Expandable and Existing Markets*

### **9.3.3. Whole Milk Powder (WMP)**

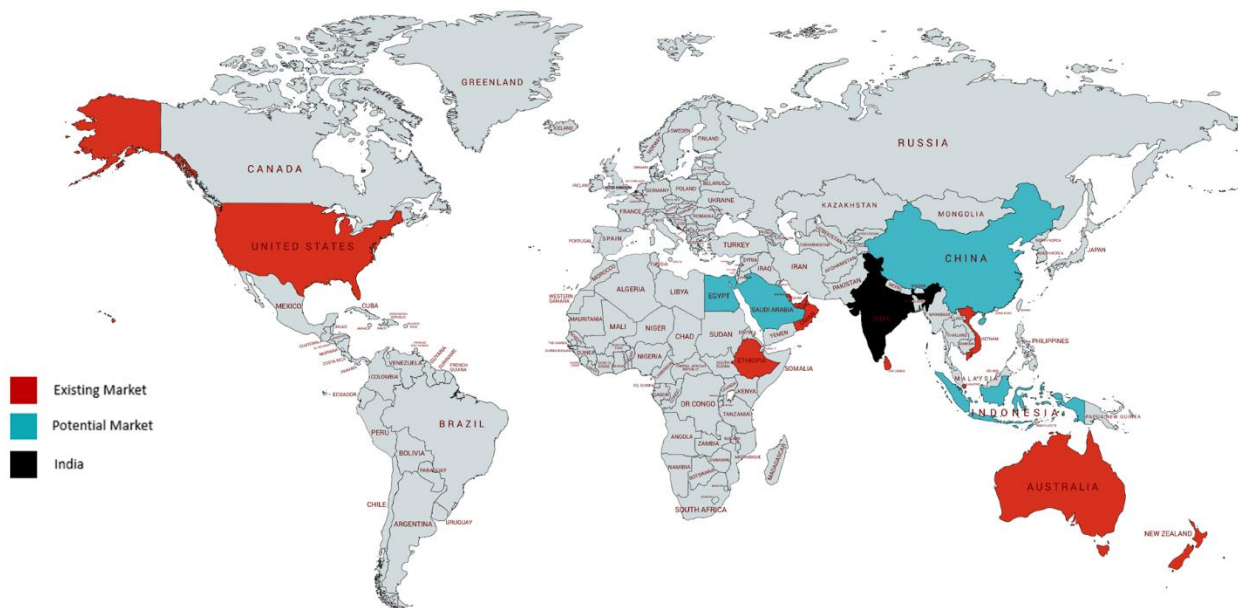
WMP is widely used all over the world due to its wide application and its nutritional value owing to protein, fat and other nutrients constituted in it. WMP is soluble in water and acts as a substitute of fresh milk. It can also be used in chocolates, soups, sweetened condensed milk, cultured milk, confectionery, ice cream, and bakery products. The major firms which produces WMP are: Arla Foods, Dairy Farmers of America, Danone, Fonterra and Nestle. Presently India is exporting to MENA and South East Asian countries. India may also export to unexplored markets of China, Saudi Arabia, Kuwait, Egypt, Indonesia and Russia since these countries have huge potential in trading WMP. In order to do so, some unique NTM barriers also has to be met.



*Figure 9. 6 WMP: Expandable and Existing Markets*

### **9.3.4 Whey Powder**

Indian currently exports Whey Powder to major countries like USA, Australia, New Zealand and other countries like Ethiopia, Vietnam and Oman. There is a huge scope of expanding its market to some Asian and MENA markets: including China, Indonesia, Saudi Arabia and Egypt. However, it is observed that the world trend for non-concentrated whey powder is stagnating and concentrated whey products like WPC 80, Isolates and Hydrolysates are increasing. The strong growth in this category is due to the high demand in energy nutrition and sports products. USA and EU are the major importers of Whey and Asia is also catching up. As suggested the major focus could be on the Asian, Middle East and African countries.

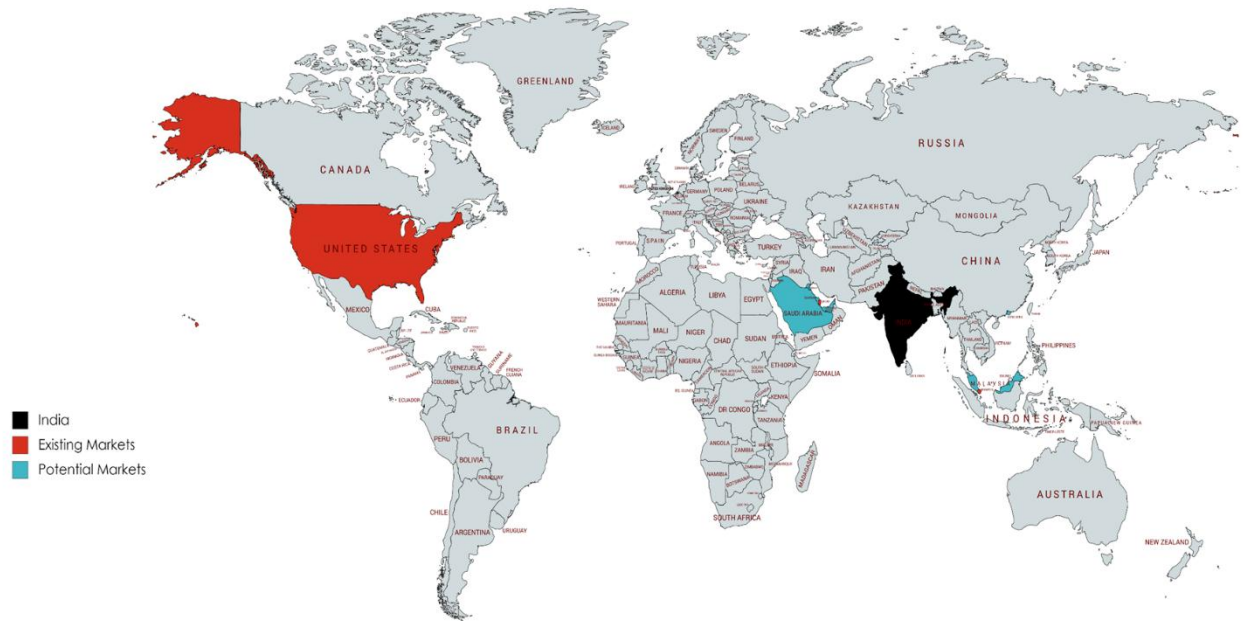


*Figure 9. 7 Whey Powder: Expandable and Existing Markets*

### **9.3.5 Cream**

Cream has three codes depending on the fat content. The world demand of cream with a fat content between 0 to 10 % are not in very high demand. Cream with fat content more than 10 % is more accepted worldwide and India is also performing good in the category. India's current export of cream is only restricted to USA, Myanmar and Middle Eastern countries. Cream in this category can be used in many forms: Manufacturing Cream, Long life Cream (UHT), Heavy Whipping cream, Half-and-half (coffee cream), Flavoured creams, clotted cream etc. India may expand to South East Asian markets and Middle Eastern Markets.

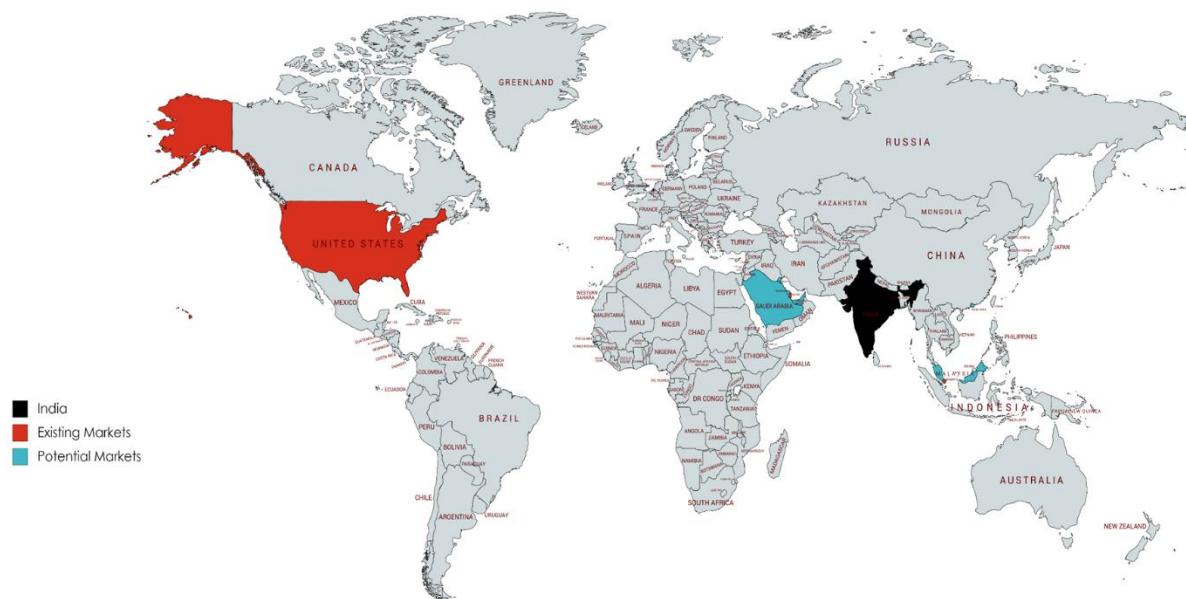




*Figure 9. 8 Cream: Expandable and Existing Markets*

### ***9.3.6 Yoghurt***

Regular Yoghurt is a popular product all over the world. As per our primary survey and from various secondary sources it is found that Yoghurt is not only consumed during breakfast but also an important part of snacks and dinner. Majorly Yoghurt is classified into plain and flavoured types. Though the demand is increasing, India's current export is only restricted to UAE, Singapore, Hong Kong, Bangladesh, Nepal, Bhutan and Pakistan. As potential markets, India may expand to China, Russia, Philippines and Oman.



*Figure 9. 9 Yoghurt: Expandable and Existing Markets*

### ***9.3.7 Bulk and Pack Milk***

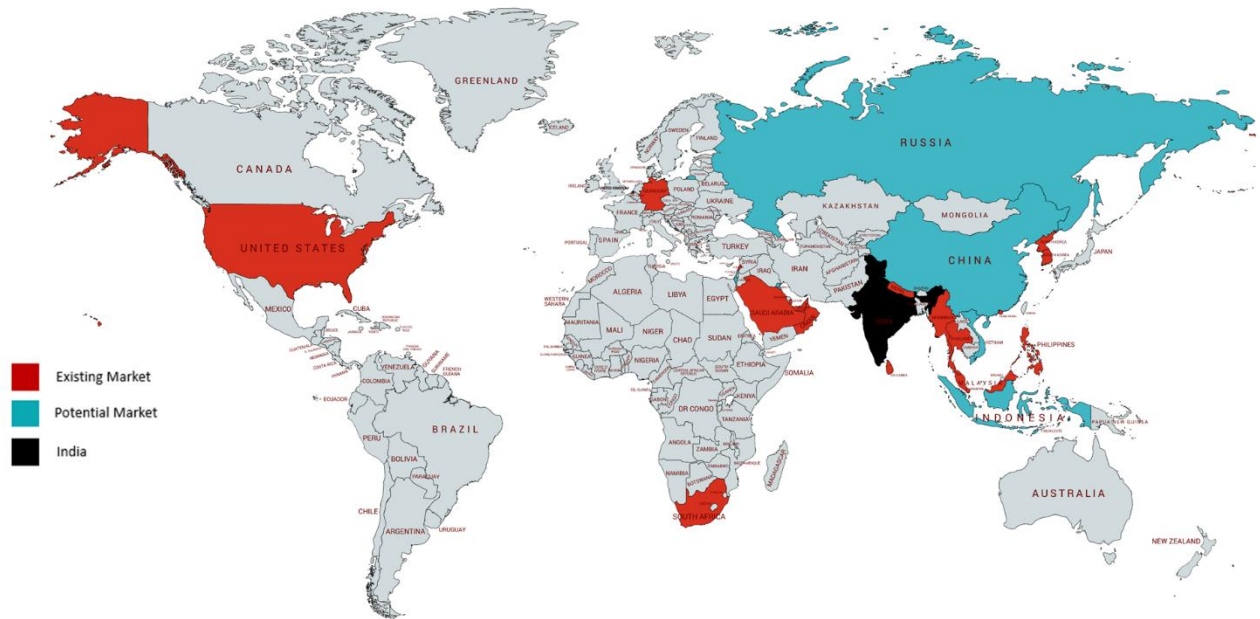
Bulk and Pack milk, which has fat content of 1-6% has high demand in the world market. India is already exporting to markets like Myanmar, Ghana, Malaysia, Qatar, Singapore, Sri-Lanka, Philippines and some countries in the African continent. Indian dairy companies may expand to countries like Oman and It may expand to Russia as well as China if major NTMs are fulfilled.



Figure 9.10 Bulk & Pack Milk: Expandable and Existing Markets

### 9.3.8 Cheese

Out of 5 categories of cheese, 3 are in high demand. 040690 (excluding fresh cheese, incl. whey cheese, curd, processed cheese, blue-veined cheese and other cheese containing veins produced by "*Penicillium roqueforti*", and grated or powdered cheese), 040610 (Fresh cheese "unripened or uncured cheese", incl. whey cheese, and curd) and 040630 (Processed cheese, not grated or powdered). India is exporting cheese to some of the countries in South East Asia, Middle East and Africa. India may increase the existing export to these countries or may expand to new markets like Vietnam, Kuwait, Indonesia and if some additional NTM Requirements are met, India could also enter into new markets like China, Israel and Russia. Cheese in terms of milk origin can be classified into cow milk, sheep milk, goat milk, and buffalo milk. Demand of goat cheese is observed in the South East Asian market. Also, cheese can be segmented into natural cheese, hard cheese, soft cheese, processed cheese, spreadable cheese, and block cheese. Indian is in the emerging category in case of processed cheese, however, other forms of cheese used for cooking and as spread are in great demand.



*Figure 9. 11 Cheese: Expandable and Existing Market*

### ***9.3.9 Skimmed Milk Powder (SMP)***

SMP like WMP has variety of use: as alternative to drinking milk, confectionary, caramel confectionary, milk chocolate, bakery and ice creams. India exports to markets like: Russia, MENA countries and South East Asian countries. Since India has already captured major markets such as the United states, South East Asia and Middle East; India may expand to China in this category. In order to do so, bilateral trade relation with China has to be strengthened and also some unique NTM barriers has to be met according to the requirements of Chinese market.

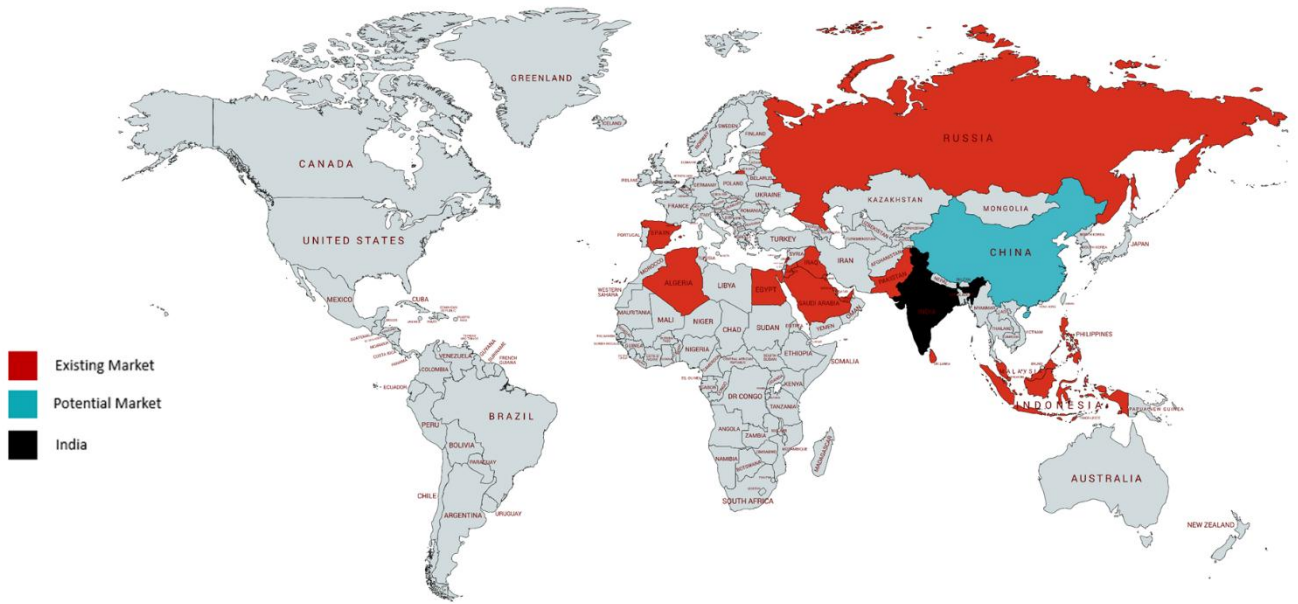


Figure 9. 12 SMP: Expandable and Existing Markets

### 9.3.10 Infant Milk/ Malted Milk Product

Infant milk food is typically powdered /Liquified/ ready to eat form of milk fortified with extra nutritional elements. India is already exporting infant milk food to Russia, Scandinavia, Middle East, South East Asia and Middle East regions. Additional markets that could be explored for Infant Milk food/Malted milk food includes Algeria and Kazakhstan,

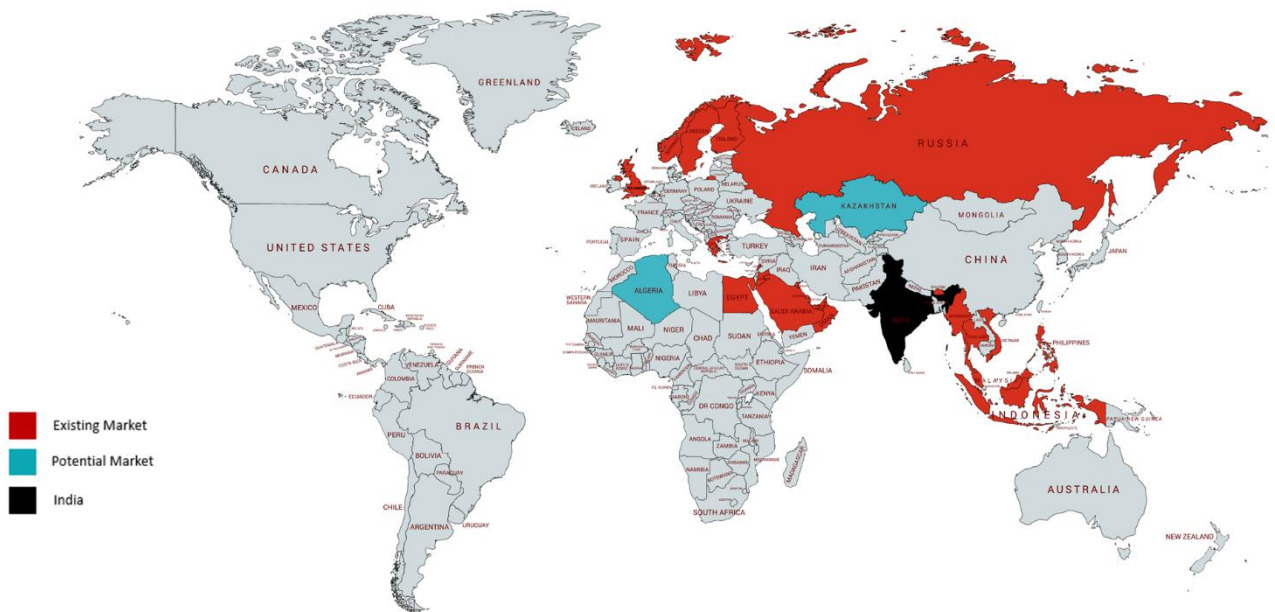


Figure 9. 13 Infant Milk Food: Expandable and Existing Markets

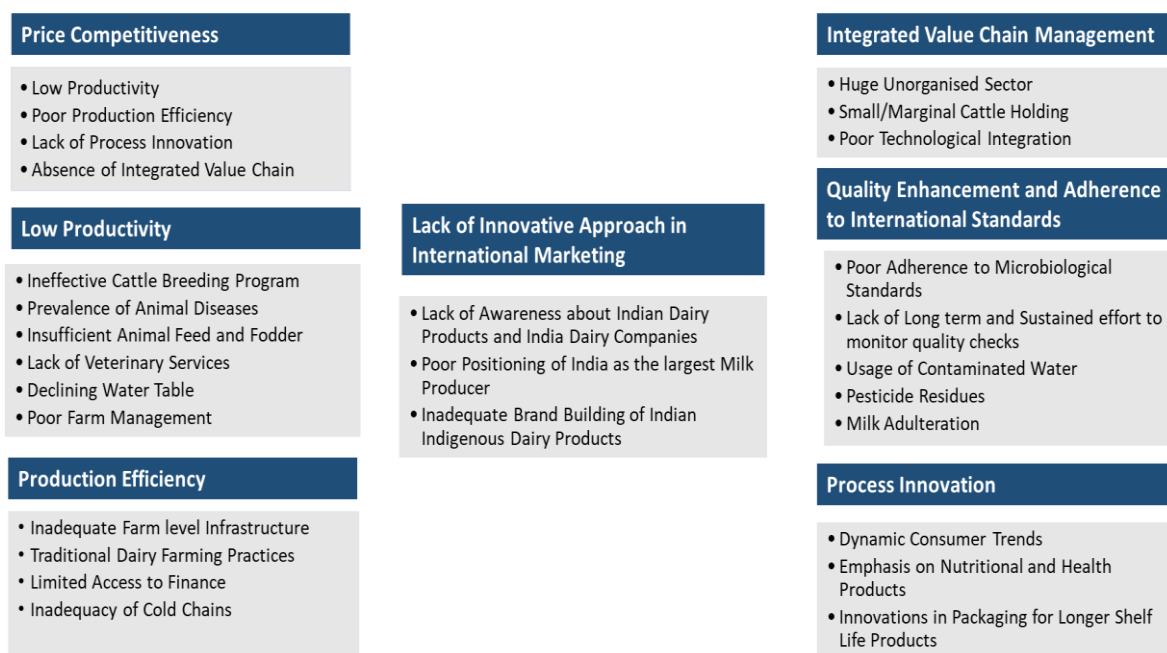
## 9.4 Indian Dairy Exports: Domestic Challenges Inhibiting International Opportunities

In order to cater to the recommended markets export requirements with consistent export supply, Indian Dairy industry needs to overcome the challenges impacting the Indian domestic dairy sector. The challenges looming over dairy sector which inhibits India from leveraging opportunities in the export market are described in the ensuing Figure 9. 14



*Figure 9. 14. Major Challenges Looming the Indian Dairy Sector*

Each of the challenges can be elaborated by means of the issues that need to be addressed to overcome the overarching challenge. The issues that need to be tackled under each of the challenges are further elaborated in the Figure 9. 15.



*Figure 9. 15. Issues Governing the Challenges of Indian Dairy Sector*

### **9.4.1 Price Competitiveness**

India's price in most of the product categories is not comparable with the world price. In three products i.e. Cheese (040690), Infant Food (190110) and WMP (040221) which is the most traded category, India's price is less than the world average unit price (US dollar/ton). However, cheese and infant food is weakly positioned by India. Whole Milk Powder is an important product where India's export is progressing and also, the price is less than the world average unit price.

For all other product categories like Cream (04015), Whey Powder (04410) Yoghurt (040310) India's FOB average unit price is higher than the world average price. products based on their product positioning i.e. Competitively positioned, emerging product or weakly positioned and price competitiveness is given in Annexure IV.

India's milk and milk product prices are not in line with the world price due to various reasons such as low productivity, poor production efficiency, lack of process innovation & efficiency and absence of an integrated value chain.

### **9.4.2 Low Productivity**

Though India is the largest milk producer of the world, it's productivity per animal is very low. Milk productivity and the overall production essentially depends on the quality of the animals. The low productivity is a result of ineffective cattle and buffalo breeding programmes, Genetics, animal diseases,

insufficient animal feed and fodder, lack of adequate veterinary & breeding services, a declining water table, less land due to urban sprawl, and poor farm management. Among the 43 breeds of registered cattle, the average milk yield stands at 2.46 litres. This is substantially less than the global standards (UK, US and Israel are at 25.6, 32.8 and 38.6 litres per day). Even cross breeds between indigenous varieties and exotic cows like Jersey or Holstein Friesian (which do not thrive well in Indian climate) yields at 7.4 litres per day is much less.

Government initiatives to improve cattle yield via genetic augmentation includes National Project on Cattle & Buffalo Breeding (NPCBB), which have contributed significantly to strengthening artificial insemination (AI) services. Unfortunately, AI services cover only 25% of Indian dairy animals. Lack of focus on progeny testing due to unavailability of technical manpower, small herd size and inefficient implementation has been an impediment. Further, over the years, emphasis has been on crossbreeding, with limited attention to improvement of indigenous breeds. For developing sustainable breeding strategies, it is also necessary to have comprehensive national level mapping and database development on number of species of livestock and their breeds, available animal genetic resources, breeding infrastructure and development facilities. In addition, compound cattle feed can also increase the milk production. Initiatives to increase the awareness regarding the importance of scientific feeding like nutrition balancing for cattle amongst the dairy farmers are taken under NDP-1.

### ***9.4.3 Production Efficiency***

Inadequate Farm Management, lack of awareness or scarcity of financial resources at times lead the marginalised farmers to provide poor shelter facilities to their cattle. It includes sheds without any proper shedding facility or at times without a proper flooring done in the shed. Such kind of improper infrastructure exposes the cattle either to extreme climatic conditions or makes them a host to vector borne diseases. Unhygienic and unkempt cattle sheds and milking yards causes mastitis conditions due to negligence related to udder and teat washing.

Cold chain is the most integral part in the supply chain of perishable commodities like milk, which is primarily responsible for increasing the shelf life of perishable products and also an important component to increase production efficiency. Developing countries have been categorized with a critical absence of strong cold chain.

The cold chain in India consists of numerous stakeholders like manufacturer, wholesaler, retailer and farmers, making it very complex in structure. These stakeholders work in isolation as they do not have a very well-connected information network. The already low yielding products when combined with



inadequate preservation system lead to an increased cost of the end product. The various inhibitors to the cold chain result in loss of quality and hygiene of the product. These inhibitors in case of the Indian cold chain for milk and milk products are:

- *High cost of installation and operation:* high capital costs involved in setting up of a cold chain in India is a major challenge. Even after installation, cold storages require a steady high-power supply and because of frequent power cuts, the companies have to invest separately in power backups which further increases the cost of cold chain.
- *Inadequate infrastructure:* the inadequacy in infrastructure and logistics system leads to a difficulty in transporting goods to the consumers. The technical infrastructure is also quite unsuitable which results in failure in achieving optimum performance of standard refrigerating systems.
- *Inadequate knowledge by labours/ farmers:* Inadequate knowledge and experience of the workers in the cold chain leads to problems like cooling system failures and milk spoilage which further increases the cost of production. Experts need to be pointed for aspects like temperature control, the abuse of which can lead to growth of pathogenic bacteria in the milk.<sup>14</sup>

#### ***9.4.4 Process Innovation and Efficiency***

Process innovation and efficiency required with respect to quality, product diversification and packaging. As India's dairy product export is challenged by many countries due to quality, it is essential to innovate process which can improve the quality of milk and milk products. Similarly, consumers are rapidly adopting healthy eating habits. Therefore, the need of the hour is to diversify the product categories and come out with nutritional and healthy products. Many innovative products like Crunchy Cheese, Protein packed curd and flavoured Yoghurt have been introduced by various Dairy companies all over the world. Development in packaging is another important innovation that is required to increase the shelf life and freshness of the products.

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<sup>14</sup> Joshi, Rohit, et al. "Indian Cold Chain: Modeling the Inhibitors." *British Food Journal*, vol. 111, no. 11, 24 Oct. 2009, pp. 1260–1283, 10.1108/00070700911001077. Accessed 6 June 2019.

#### ***9.4.5 Integrated Value Chain Management***

Milk and milk products pass through different stages in the value chain. Major stages of dairy value chain can be divided into: production, processing and marketing. All the activities in these stages are in certain order and with each activity the product gains value. To integrate all the activities of dairy value chain is little difficult as this major part of this industry is still an unorganized sector. However, major state co-operatives have attempted to integrate the production and distribution of milk products, it is still critical and challenging to cope up with the existing complexity in the value chain. One of the major complexities is the number of stakeholders involved in the production, processing and distribution process. The number of stakeholders increases if it is an unorganized sector. Second important complexity is due to the small size farms in this sector. It is difficult to integrate the complete process as typically each family in a village owns 2-3 cows. The third level of integration is required at the technological level, as the market demand of new types of dairy product increases and quality requirements become more stringent.

#### ***9.4.6 Quality Enhancement and Adherence to International Standards***

Major quality issues prevailing in the Indian dairy sector is related to the use of contaminated water, milk adulteration, use of veterinary drugs, heavy metals, mycotoxins and pesticides. Also, due to small dairy herd size and low economies of scale, it is challenging for dairy farmers to invest in infrastructure required to maintain quality standards.

Quality of water (microbiological as well as chemical) used for cleaning utensils for milking, milking machines, for bathing animals, cleaning udders, offered for drinking to animals is also important source of contamination to milk should be checked. Like human beings, the standards should be laid down for water for animal usage and drinking.

Milk adulteration in certain pockets of India is very rampant and there is inadequate mechanism for regular & continuous check on this by statutory agencies, which needs to be in place. A recent Rajya Sabha 110th Report (2018) on “Functioning of Food Safety and Standards Authority of India (Ministry of Health and Family Welfare)” by Department-Related Parliamentary Standing Committee on Health and Family Welfare also noted some grave concerns/observations regarding adulteration of milk and milk products in India.

Antibiotic residues in dairy is a perennial quality related problem which is due to the use of unprescribed veterinary drugs. Availability of antibiotic drugs without prescription is inadequately monitored by the

competent authorities. Incidental evidence of presence of antibiotic residues in milk have been found in different parts of the country. FSSAI has notified around 103 veterinary and antibiotic residues in food products including milk and milk products. However, the mechanism to monitor these antibiotic residue levels is still under process.

Heavy metals through the soil - plant continuum reaches to human or animal & to animal products-milk & meat, and interfere with the biological process in the animal/human body. Even at their exposure at minute level, heavy metals can have carcinogenic effect on human, animals and negative effect on soil microorganisms & crop plants. FSSAI has notified standards for heavy metals in food products including milk and milk products, however surveillance and monitoring data is lacking.

Mycotoxins including aflatoxins are detrimental for the health of milk animals, if they are fed mouldy feed. Aflatoxin B1 is secreted in milk in form of aflatoxin M1. FSSAI has notified standards for aflatoxin in milk and milk products, however surveillance and monitoring data is lacking. Efforts needs to be made in harmonization & acceptance levels of Aflatoxin M1 for milk and milk products for international dairy trade.

Contamination of milk and dairy products with pesticide residues is a matter of serious public health concern, since they are widely consumed by infants, children and adults. FSSAI has notified maximum limits for more than 200 pesticide residues in food, however, surveillance and monitoring data is lacking.

As far as animal welfare is concerned, some constraints are observed due to rearing of milch animals by landless & marginal farmers in India, which can become NTBs for export of milk and milk products from India. These are related with: allocated space per animal, associated to their restricted movement, feed & fodder requirements, water quality, hygienic environment, veterinary treatment & care, vaccination, animal husbandry practices etc., which may not be in accordance with laid down “international standards”.

One of the big challenges for exporting milk and milk products is traceability issue, often cited as NTB for export of milk and dairy products from India, due to lack of data related to animal (breed, genetics, lineage, milk production, diseases, vaccination, movements etc.) may not be properly recorded and available.

## 9.5 Roadmap and Recommendations for Indian Dairy Sector: 2030

The aim of the Indian Dairy Sector for 2030 must be to increase India’s world dairy exports from 1% to 5%. In order to achieve this ambition, it essential that a time bound systematic approach be followed that will help the Indian dairy sector overcome the domestic challenges inhibiting international opportunities and rise to become not just the world’s largest milk producer but known for becoming the world’s largest internationally renowned quality milk producer.

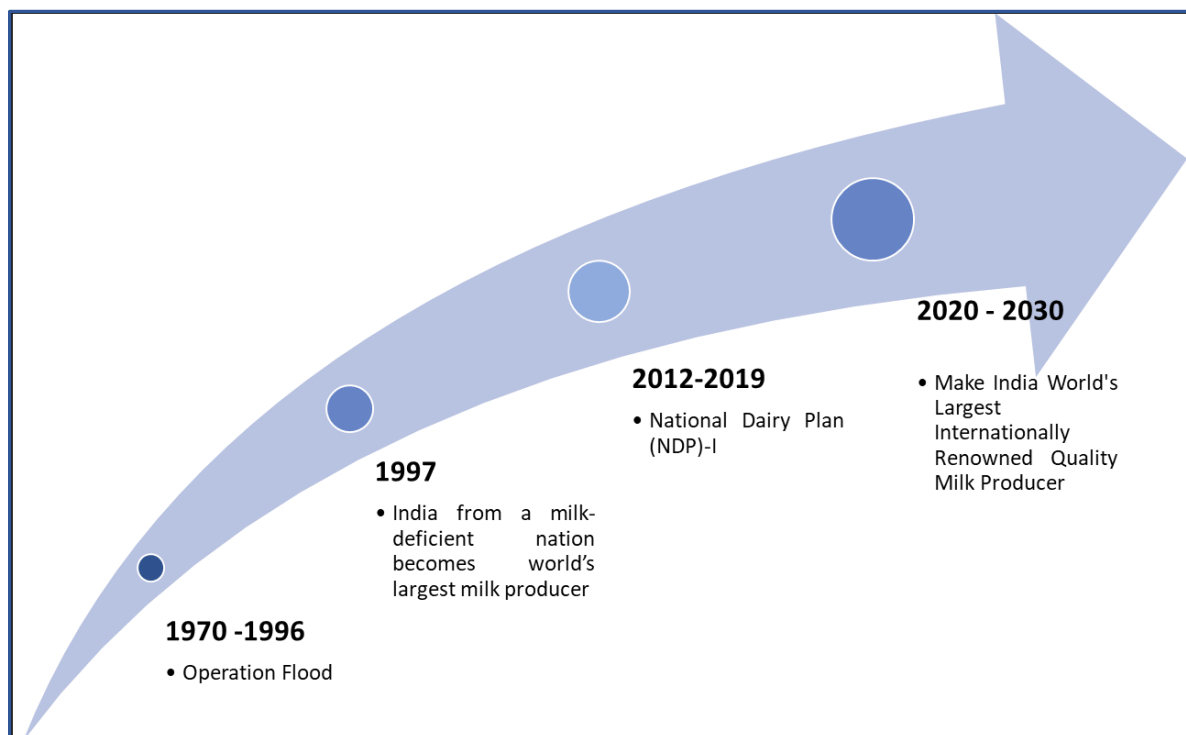


Figure 9. 16. Indian Dairy Sector Mission – 2030

The world dairy market is projected to grow at the rate of 1-1.5 % by 2030 and as suggested, if India aims 5% of the world market (current share is .38%), the export value stands at \$5.5 billion. Year wise projections are given in Table below.

Table 9. 1: Targeted 10-year growth strategy for Indian Dairy Exports: Overall Numbers (000’US Dollar)

| Product                    | Market Details        | Metric | Targeted 10-Year Export Growth Strategy for India’s Dairy Export: Overall numbers (000’US Dollar) |                 |                 |                |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|----------------------------|-----------------------|--------|---|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                            |                       |        | 2018  | 2019            | 2020            | 2021           | 2022            | 2023            | 2024            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            |
| Overall World Dairy Market | Current Size          |        | \$ 9,74,95,095  | \$ 10,01,28,484 | \$ 10,17,23,686 | \$ 9,92,68,919 | \$ 9,98,06,554  | \$ 10,14,82,249 | \$ 10,28,66,802 | \$ 10,52,59,046 | \$ 10,71,54,031 | \$ 10,82,69,269 | \$ 10,81,82,334 | \$ 10,93,57,759 | \$ 11,05,34,732 |
|                            | Projected Growth Rate |        | 5.04%   | 2.70%           | 1.59%           | -2.41%         | 0.54%           | 1.68%           | 1.36%           | 2.33%           | 1.80%           | 1.04%           | -0.08%          | 1.09%           | 1.08%           |
|                            | Market Size Projected |        | \$ 10,01,28,484   | \$ 10,17,23,686 | \$ 9,92,68,919  | \$ 9,98,06,554 | \$ 10,14,82,249 | \$ 10,28,66,802 | \$ 10,52,59,046 | \$ 10,71,54,031 | \$ 10,82,69,269 | \$ 10,81,82,334 | \$ 10,93,57,759 | \$ 11,05,34,732 |                 |
| Overall India Dairy Export | Export %              |        | 0.37%   | 0.53%           | 0.70%           | 0.86%          | 1.02%           | 1.18%           | 1.34%           | 1.50%           | 2.20%           | 2.90%           | 3.60%           | 4.30%           | 5.00%           |
|                            | Target Export         |        | \$ 5,35,263   | \$ 7,07,468     | \$ 8,50,123     | \$ 10,15,320   | \$ 11,95,656    | \$ 13,77,485    | \$ 15,78,886    | \$ 23,57,389    | \$ 31,39,809    | \$ 38,94,564    | \$ 47,02,384    | \$ 55,26,737    |                 |

To reach \$ 5.5 billion worth of exports, India has to strategically plan and execute market expansion. Product specific expansion plan is further elaborated in section 9.5.1.

The Figure 9. 17 indicates the concrete steps that the Indian Dairy Sector can implement in order to enhance India’s world exports share in dairy products from 1 to 5 percent globally.

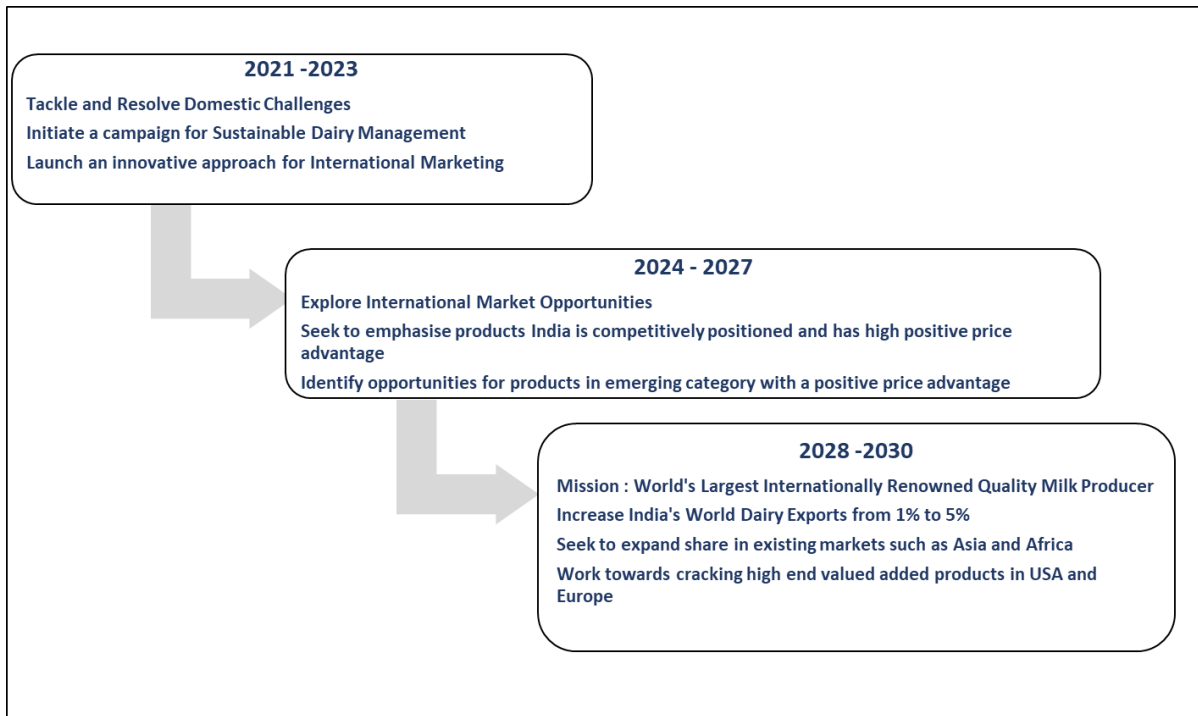


Figure 9. 17. Indian Dairy Sector Roadmap 2030

One of the fundamental criteria that Indian dairy sector has to fulfil is creating a substantial exportable surplus across product categories. This is essential for dairy exports, as continuous supply of products helps to build a sense of reliability and trust towards Indian suppliers among international buyers. The next important step to further improve the buyer's confidence is to create a sustainable dairy management system in the country, primarily by focusing on Production and Productivity enhancement, Integrated Value Chain Management, Process Innovation and Efficiency, and finally lifting the Quality Standards of Indian dairy products as per the demands of potential overseas markets. The inter-relationship between each factor in sustainable dairy management that can tackle and resolve domestic challenges in order to become export competitive is given in Figure 9. 18.

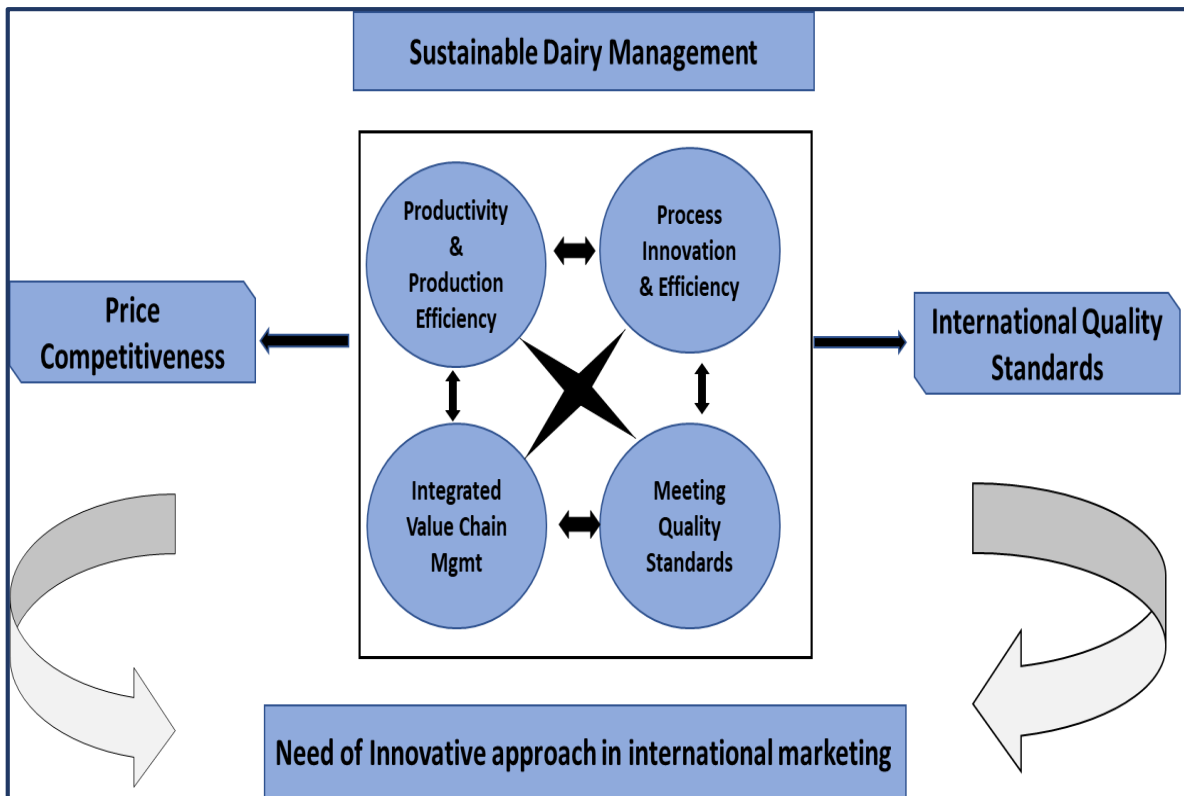


Figure 9. 18. Steps in Sustainable Dairy Management for 2020-2025

When a sustainable dairy management process has been implemented nation-wide, the Indian Dairy sector will be poised to explore international market opportunities. The strategy could first begin with products where India is competitively positioned and has a positive price advantage. Then the export strategy can enlarge to products in emerging category with a positive price advantage. Capturing these two segments can enable India gain a sizable portion of the world export market.

Figure 9. 19 provides a comprehensive overview of the strategies to enhance exports of Indian dairy products by the year 2030.

A carefully chalked out international strategy is quintessential for smooth market entry for dairy products whether it is Retail, Bulk or Indigenous category. Exporter should closely monitor their internal strengths as well as the competitive landscape. Moreover, identifying the trends and patterns in the potential market will help to formulate optimal marketing strategies including effective international marketing campaigns. Indian dairy industry should make the most out of the taste buds of Indian diaspora which is among the largest in the world. This is one of the important marketing strategies that should be adopted when exporting indigenous dairy products such as ghee, dahi, desi sweets etc. International Marketing campaigns for indigenous products can be done by putting emphasis on the goodness of indigenous products and its Indian identity.

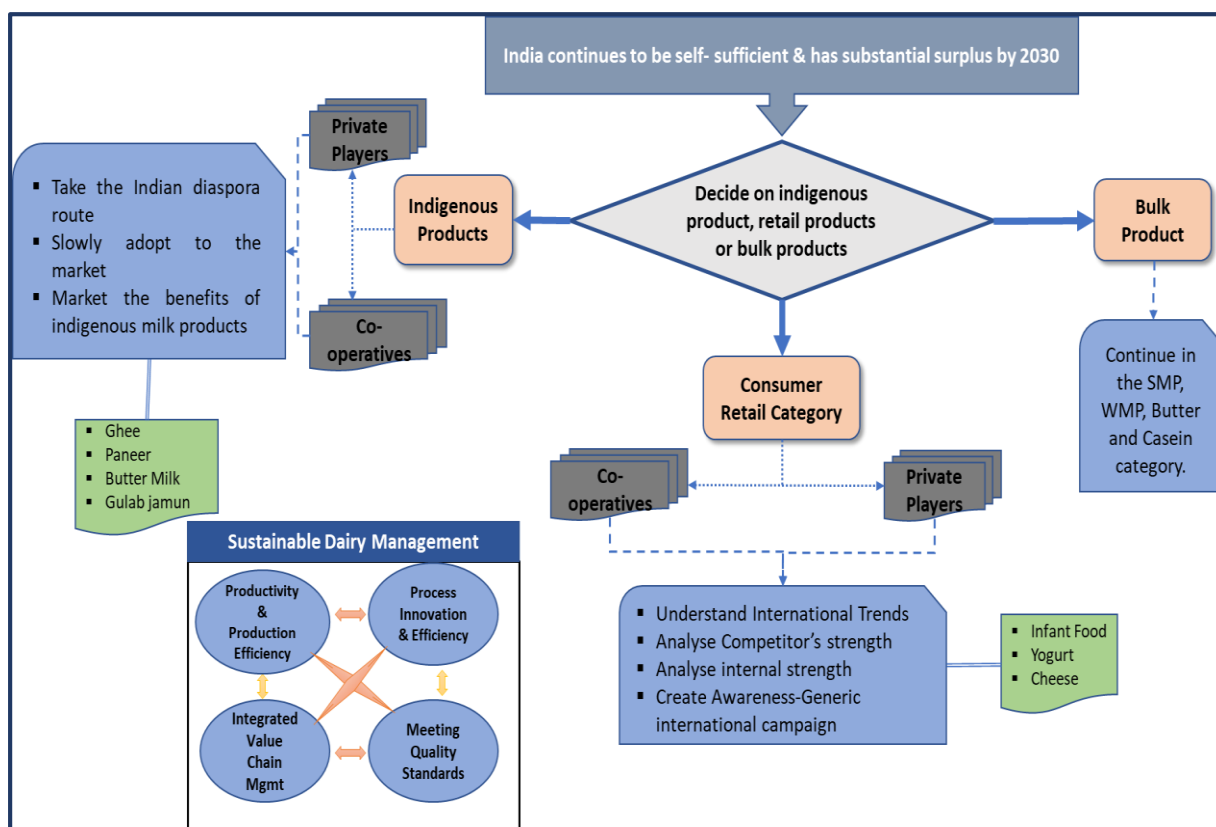


Figure 9. 19. Strategies for Export Promotion of Indian dairy products

Indian dairy sector should further strengthen the momentum of bulk product exports such as Skimmed Milk Powder, Whole Milk Powder, and Butter. Even though these products are already being exported, there are certain fundamental issues such as in-frequent supply, incompetent prices and substandard quality. All these issues should be addressed in a sustainable way in order to strengthen the international market position of these products.

### 9.5.1 Product Export Roadmap 2021-2030

The product export plan can be divided into three phases;

- Phase 1: Initiation Phase- 2021-2023
- Phase 2: Transition Phase-2024-2027
- Phase 3: Expansion Phase-2028-2030

In the initiation phase, the objective is to export potential products to the existing markets and at the same time focussing on strengthening the remaining product categories. During this phase additional markets with low NTM and high trade score can also be targeted. In the transition phase, markets with relatively moderate NTM barriers can be explored. Expanding to such markets would be successful only when the

industry starts preparing to meet the adequate measures to comply with various international quality standards from Phase 1. Similarly, an adherence to quality standards and price competitiveness would expand the market further by the 3<sup>rd</sup> Phase of the expansion stage.

There are 12 categories of product that are to be focused during these phases. These product categories are selected based on primary and secondary analysis. Similarly, there are different sets of markets for each product category which are to be focused during the various stages of the expansion strategy.

We are competitively positioned in the Ghee category and are exporting to various markets; the first step would be to continue export in this category and slowly expand to Mexico and Poland in the second and third phase. Similarly, WMP, Butter, Bulk and Pack Milk and Cheese are the other category of products where the price is competitive and therefore the requirement is to improve the quality gradually.

There is a potential and immediate category of products namely: Cream, Whey Powder and Yoghurt that can help capture the market share, if it acquires a competitive price in the world market as well as improve the quality standards gradually.

India is weakly positioned in Cheese (040690) and Infant Milk food category. As the India's average price is lower than the world average unit price, India should capitalize the price advantage and improve the quality standards. Cheese (040610) and SMP are the product categories experiencing price fluctuations in the global market. To expand these two products a continuous monitoring of the price and trends are recommended. However, constraints related to capacity building in case of cheese needs to be addressed to take the advantage of future potential that it will offer in the export market.

Expanding to markets like China and Russia would take time as Indian Dairy Industry has to prepare to cross their NTM barriers which are as high as 166. A detailed work plan for the expansion of the above-mentioned product categories are given in Table 9. 2.



Table 9. 2 Product Export Roadmap 2021-2030

| Action  | Product Position-India | Product Categories             | Phase 1: Initiation Phase   |      |      | Phase 2: Transition   |      |      |      | Phase 3: Expansion                           |      |      |      |
|---|------------------------|--------------------------------|---|------|------|---|------|------|------|--|------|------|------|
|   |                        |                                | 2020  | 2021 | 2022 | 2023  | 2024 | 2025 | 2026 | 2027   | 2028 | 2029 | 2030 |
| Focus on Quality Improvement Gradually                      | Comeptitive            | Ghee (040590)                  | Existing Market   |      |      | Phase 1 Markets+Poland+Mexico                                       |      |      |      | Phase 2 Markets                              |      |      |      |
|   | Emerging               | WMP(040221)                    | Existing Market+Bhutan+Mauritius                                  |      |      | Phase 1 Market + Kuwait + Egypt + Russia                            |      |      |      | Phase 2 Markets+Indonesia+Saudi Arabia+China |      |      |      |
|   |                        | Butter (040510)                | Existing Market+Cambodia+South Korea+Macau                        |      |      | Phase 1 Markets+Japan   |      |      |      | Phase 2 Markets+Russia+China                 |      |      |      |
|   |                        | Bulk & Pack Milk (040120)      | Existing Markets+Vietnam  |      |      | Phase 1 Markets+Oman  |      |      |      | Phase 2 Markets                              |      |      |      |
|   |                        | Cheese (040630)                | Existing Markets+Jordan   |      |      | Phase 1 Markets + Indonesia + Lebanon + Phillipines                 |      |      |      | Phase 2 Markets+China                        |      |      |      |
| Focus on Price Immediatly and Quality Gradually             | Emerging               | Cream(040150)                  | Existing Markets+Mauritius+Maldives                               |      |      | Phase 1 Markets + Russia + Malaysia + Bahrain + Vietnam + Indonesia |      |      |      | Phase 2 Markets+China                        |      |      |      |
|   |                        | Whey Powder (040410)           | Existing Markets  |      |      | Phase 1 Markets+Egypt+Saudi Arabia+Russia                           |      |      |      | Phase 2 Markets+China                        |      |      |      |
|   |                        | Yoghurt (040310)               | Existing Markets+Malaysia   |      |      | Phase 1 Markets + Oman + Russia + Phillipines                       |      |      |      | Phase 2 Markets+China                        |      |      |      |
| Increase Quality Gradually & Capitalize the Price Advantage | Weak                   | Cheese (040690)                | Existing Markets  |      |      | Phase 1 Markets + Russia + Israel + Vietnam                         |      |      |      | Phase 2 Markets                              |      |      |      |
|   |                        | Infant Food/Malt food (190110) | Existing Markets  |      |      | Phase 1 Markets + Algeria+Kazhakstan                                |      |      |      | Phase 2 Markets                              |      |      |      |
| Follow World Price Trend & Improve Quality                  | Weak                   | Cheese (040610)                | Existing Markets+Phillipines+Macau                                |      |      | Phase 1 Market+Indonesia  |      |      |      | Phase 2 Market+China                         |      |      |      |
|   |                        | SMP (040210)                   | Existing Markets  |      |      | Phase 1 Markets   |      |      |      | Phase 2 Markets+China                        |      |      |      |
| Continue Exports  | Emerging + Weak        | All Other Products             | Continue Export and focus less on high fat content dairy products |      |      |   |      |      |      |  |      |      |      |

In addition to the product export roadmap, export value projections have been done to reach the target of \$5.5 billion by 2030 (5% of Global market). The aggregate export projections<sup>15</sup> are given in Table 9. 3 and product and country wise export projection till 2030 are given in Annexure V. This year wise projections can be used as a guide to plan dairy exports. Adequate capacity building and inventory planning based on the given projections would give an edge to the monitoring and implementing agency to keep track of the export performance.

The projection table shows that product categories: Butter, SMP and Cream will be the driving force to reach our target of \$ 5.5 billion by 2030. However, China where India is expecting to enter by 2028 (refer Table 9. 2) will play a major role due to its market size and growth. Even if India aims to capture 3-4% of Chinese dairy market the overall projection can reach to \$ 10 Billion by 2030.

<sup>15</sup> The assumptions to project the targets available in Annexure V.

Table 9.3 Targeted 10-Year Product Specific Export Growth Strategy: Export Values (000'US Dollar)

| Product & Market           |                          | Current     | Targeted 10-Year Product Specific Export Growth Strategy: Export Values (000'US Dollar) |             |             |             |             |             |             |             |              |              |               |
|----------------------------|--------------------------|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|
|                            |                          | 2019        | 2020  | 2021        | 2022        | 2023        | 2024        | 2025        | 2026        | 2027        | 2028         | 2029         | 2030          |
| Over all Dairy Projections | Target: 5% Global Market | \$ 5,35,263 | \$7,07,468  | \$8,50,123  | \$10,15,320 | \$11,95,656 | \$13,77,485 | \$15,78,886 | \$23,57,389 | \$31,39,809 | \$38,94,564  | \$47,02,384  | \$ 55,26,737  |
|                            | Product Aggregate        | \$ 4,23,027 | \$5,65,998  | \$7,05,406  | \$ 8,52,414 | \$10,16,837 | \$12,21,692 | \$14,98,158 | \$23,58,501 | \$33,59,501 | \$49,56,849  | \$72,07,799  | \$1,03,20,165 |
| Ghee                       | Existing Market Target   | \$ 80,289   | \$ 1,06,120   | \$ 1,27,518 | \$ 1,52,298 | \$ 1,79,348 | \$ 2,06,623 | \$ 2,36,833 | \$ 3,53,608 | \$ 4,70,971 | \$ 5,84,185  | \$ 7,05,358  | \$ 8,29,010   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ 1,139    | \$ 2,529    | \$ 4,244    | \$ 6,381    | \$ 9,065    | \$ 12,458    | \$ 16,770    | \$ 22,270     |
|                            | Total                    | \$ 80,289   | \$ 1,06,120   | \$ 1,27,518 | \$ 1,52,298 | \$ 1,80,487 | \$ 2,09,151 | \$ 2,41,076 | \$ 3,59,989 | \$ 4,80,036 | \$ 5,96,643  | \$ 7,22,128  | \$ 8,51,281   |
| WMP                        | Existing Market Target   | \$ 5,353    | \$ 7,075  | \$ 17,002   | \$ 20,306   | \$ 23,913   | \$ 27,550   | \$ 47,367   | \$ 94,296   | \$ 1,25,592 | \$ 1,55,783  | \$ 2,35,119  | \$ 2,76,337   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ 81       | \$ 1,517    | \$ 6,312    | \$ 13,030   | \$ 22,321   | \$ 1,23,943  | \$ 2,59,321  | \$ 4,37,274   |
|                            | Total                    | \$ 5,353    | \$ 7,075  | \$ 17,002   | \$ 20,306   | \$ 23,994   | \$ 29,067   | \$ 53,678   | \$ 1,07,326 | \$ 1,47,914 | \$ 2,79,725  | \$ 4,94,441  | \$ 7,13,611   |
| Butter                     | Existing Market Target   | \$ 42,821   | \$ 56,597   | \$ 68,010   | \$ 81,226   | \$ 95,652   | \$ 1,10,199 | \$ 1,26,311 | \$ 1,88,591 | \$ 2,51,185 | \$ 3,11,565  | \$ 3,76,191  | \$ 4,42,139   |
|                            | New Market Target        | \$ -        | \$ 363  | \$ 904      | \$ 1,691    | \$ 2,813    | \$ 26,341   | \$ 76,822   | \$ 1,78,171 | \$ 3,73,336 | \$ 8,33,918  | \$ 16,43,173 | \$ 30,50,879  |
|                            | Total                    | \$ 42,821   | \$ 56,960   | \$ 68,914   | \$ 82,917   | \$ 98,466   | \$ 1,36,540 | \$ 2,03,132 | \$ 3,66,762 | \$ 6,24,521 | \$ 11,45,483 | \$ 20,19,363 | \$ 34,93,018  |
| Bulk & Pack Milk           | Existing Market Target   | \$ 16,058   | \$ 21,057   | \$ 33,595   | \$ 39,856   | \$ 46,586   | \$ 53,086   | \$ 60,121   | \$ 89,917   | \$ 1,50,846 | \$ 1,86,271  | \$ 2,23,639  | \$ 2,60,916   |
|                            | New Market Target        | \$ -        | \$ 167  | \$ 410      | \$ 756      | \$ 1,241    | \$ 2,014    | \$ 3,035    | \$ 4,379    | \$ 6,144    | \$ 8,458     | \$ 11,480    | \$ 15,421     |
|                            | Total                    | \$ 16,058   | \$ 21,224   | \$ 34,005   | \$ 40,613   | \$ 47,826   | \$ 55,099   | \$ 63,155   | \$ 94,296   | \$ 1,56,990 | \$ 1,94,728  | \$ 2,35,119  | \$ 2,76,337   |
| Cheese (040630)            | Existing Market Target   | \$ 26,763   | \$ 35,373   | \$ 42,506   | \$ 50,766   | \$ 59,783   | \$ 68,874   | \$ 78,944   | \$ 1,17,869 | \$ 1,56,990 | \$ 1,94,728  | \$ 2,35,119  | \$ 2,76,337   |
|                            | New Market Target        | \$ -        | \$ 23   | \$ 47       | \$ 72       | \$ 98       | \$ 503      | \$ 944      | \$ 1,422    | \$ 1,940    | \$ 7,844     | \$ 15,398    | \$ 24,964     |
|                            | Total                    | \$ 26,763   | \$ 35,397   | \$ 42,553   | \$ 50,838   | \$ 59,881   | \$ 69,378   | \$ 79,888   | \$ 1,19,291 | \$ 1,58,930 | \$ 2,02,573  | \$ 2,50,517  | \$ 3,01,301   |
| Cheese (040690)            | Existing Market Target   | \$ 22,989   | \$ 30,838   | \$ 37,601   | \$ 45,559   | \$ 54,417   | \$ 63,576   | \$ 73,883   | \$ 1,11,824 | \$ 1,50,952 | \$ 1,89,735  | \$ 2,32,105  | \$ 2,76,337   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ -        | \$ 3,651    | \$ 7,801    | \$ 12,522   | \$ 17,899   | \$ 24,030    | \$ 31,032    | \$ 39,040     |
|                            | Total                    | \$ 22,989   | \$ 30,838   | \$ 37,601   | \$ 45,559   | \$ 54,417   | \$ 67,227   | \$ 81,684   | \$ 1,24,346 | \$ 1,68,851 | \$ 2,13,765  | \$ 2,63,137  | \$ 3,15,377   |
| Cheese (040610)            | Existing Market Target   | \$ 7,011    | \$ 10,452   | \$ 13,984   | \$ 18,391   | \$ 23,585   | \$ 29,227   | \$ 35,695   | \$ 59,815   | \$ 86,889   | \$ 1,15,573  | \$ 1,48,368  | \$ 1,83,789   |
|                            | New Market Target        | \$ -        | \$ 545  | \$ 1,309    | \$ 2,357    | \$ 3,772    | \$ 5,660    | \$ 8,154    | \$ 11,419   | \$ 15,667   | \$ 21,160    | \$ 28,228    | \$ 37,280     |
|                            | Total                    | \$ 7,011    | \$ 10,997   | \$ 15,293   | \$ 20,748   | \$ 27,358   | \$ 34,887   | \$ 43,849   | \$ 71,235   | \$ 1,02,556 | \$ 1,36,734  | \$ 1,76,595  | \$ 2,21,069   |

| Product & Market           |                          | Current     | Targeted 10-Year Product Specific Export Growth Strategy: Export Values (000'US Dollar) |             |             |             |             |             |             |             |              |              |               |
|----------------------------|--------------------------|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|
|                            |                          | 2019        | 2020  | 2021        | 2022        | 2023        | 2024        | 2025        | 2026        | 2027        | 2028         | 2029         | 2030          |
| Over all Dairy Projections | Target: 5% Global Market | \$ 5,35,263 | \$7,07,468  | \$8,50,123  | \$10,15,320 | \$11,95,656 | \$13,77,485 | \$15,78,886 | \$23,57,389 | \$31,39,809 | \$38,94,564  | \$47,02,384  | \$ 55,26,737  |
|                            | Product Aggregate        | \$ 4,23,027 | \$5,65,998  | \$7,05,406  | \$ 8,52,414 | \$10,16,837 | \$12,21,692 | \$14,98,158 | \$23,58,501 | \$33,59,501 | \$49,56,849  | \$72,07,799  | \$1,03,20,165 |
| SMP                        | Existing Market Target   | \$ 1,17,556 | \$ 1,57,330   | \$ 1,91,402 | \$ 2,31,399 | \$ 2,75,800 | \$ 3,21,547 | \$ 3,72,920 | \$ 5,63,307 | \$ 7,58,940 | \$ 9,52,131  | \$ 11,62,610 | \$ 13,81,684  |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 80,464    | \$ 1,97,941  | \$ 3,65,202   |
|                            | Total                    | \$ 1,17,556 | \$ 1,57,330   | \$ 1,91,402 | \$ 2,31,399 | \$ 2,75,800 | \$ 3,21,547 | \$ 3,72,920 | \$ 5,63,307 | \$ 7,58,940 | \$ 10,32,595 | \$ 13,60,551 | \$ 17,46,886  |
| Infant Food                | Existing Market Target   | \$ 80,289   | \$ 1,06,120   | \$ 1,27,518 | \$ 1,52,298 | \$ 1,79,348 | \$ 2,05,952 | \$ 2,35,434 | \$ 3,51,419 | \$ 4,67,926 | \$ 5,80,213  | \$ 7,00,385  | \$ 8,22,957   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ -        | \$ 670      | \$ 1,399    | \$ 2,189    | \$ 3,045    | \$ 3,971     | \$ 4,973     | \$ 6,053      |
|                            | Total                    | \$ 80,289   | \$ 1,06,120   | \$ 1,27,518 | \$ 1,52,298 | \$ 1,79,348 | \$ 2,06,623 | \$ 2,36,833 | \$ 3,53,608 | \$ 4,70,971 | \$ 5,84,185  | \$ 7,05,358  | \$ 8,29,010   |
| Yoghurt                    | Existing Market Target   | \$ 962      | \$ 2,442  | \$ 4,342    | \$ 6,865    | \$ 10,063   | \$ 13,873   | \$ 18,514   | \$ 31,544   | \$ 47,209   | \$ 65,002    | \$ 86,266    | \$ 1,10,535   |
|                            | New Market Target        | \$ -        | \$ 63   | \$ 141      | \$ 248      | \$ 392      | \$ 2,261    | \$ 4,807    | \$ 8,220    | \$ 12,737   | \$ 42,810    | \$ 89,151    | \$ 1,58,744   |
|                            | Total                    | \$ 962      | \$ 2,505  | \$ 4,482    | \$ 7,113    | \$ 10,455   | \$ 16,135   | \$ 23,322   | \$ 39,764   | \$ 59,946   | \$ 1,07,813  | \$ 1,75,417  | \$ 2,69,278   |
| Whey Powder                | Existing Market Target   | \$ 6,878    | \$ 10,193   | \$ 13,574   | \$ 17,795   | \$ 22,820   | \$ 28,438   | \$ 35,058   | \$ 56,019   | \$ 79,508   | \$ 1,04,692  | \$ 1,33,740  | \$ 1,65,802   |
|                            | New Market Target        | \$ -        | \$ -  | \$ -        | \$ -        | \$ -        | \$ 366      | \$ 783      | \$ 1,256    | \$ 1,793    | \$ 10,559    | \$ 20,546    | \$ 31,883     |
|                            | Total                    | \$ 6,878    | \$ 10,193   | \$ 13,574   | \$ 17,795   | \$ 22,820   | \$ 28,804   | \$ 35,840   | \$ 57,275   | \$ 81,300   | \$ 1,15,251  | \$ 1,54,286  | \$ 1,97,685   |
| Cream                      | Existing Market Target   | \$ 16,058   | \$ 21,224   | \$ 25,504   | \$ 30,460   | \$ 35,870   | \$ 41,325   | \$ 47,367   | \$ 70,722   | \$ 94,194   | \$ 1,16,837  | \$ 1,41,072  | \$ 1,65,802   |
|                            | New Market Target        | \$ -        | \$ 16   | \$ 38       | \$ 70       | \$ 114      | \$ 5,911    | \$ 15,413   | \$ 30,581   | \$ 54,351   | \$ 2,30,519  | \$ 5,09,816  | \$ 9,39,509   |
|                            | Total                    | \$ 16,058   | \$ 21,240   | \$ 25,542   | \$ 30,529   | \$ 35,984   | \$ 47,235   | \$ 62,779   | \$ 1,01,303 | \$ 1,48,545 | \$ 3,47,356  | \$ 6,50,887  | \$ 11,05,311  |

### **9.5.2 Recommendations**

It is expected that the Indian dairy sector will face tremendous challenges during the process of foraying into the global markets. This tedious task can be done in a better way if the fundamentals of the entire industry is transformed in a pragmatic and future oriented manner. The following are some of the general suggestions:

- An export orientation could be in the form of developing specific dairy export zones to meet barriers related to large herd size. These specific zones may be developed as exclusive regional zones for exports of dairy products as well as to overcome NTM barriers related to traceability, and quality management. Dairy Export Zones (DEZ) can be envisioned as an alternative model to expand dairy exports without affecting the welfare of small scale and marginal dairy farmers.
- Encouraging players in the organized dairy sector to enhance their commitment and contribution in the input services such as infrastructure, animal health and farmer welfare. This endeavour will lead to increase the share of organized dairy sector.
- Focus on strengthening the indigenous breed to help significantly enhance productivity.
- Integration and upgradation of technology across the value chain stages of dairy production for performance optimization.
- Feeding is as important as breeding therefore promoting nutritional feed and fodder availability to the dairy farmers is recommended. This will help improve animal health, productivity and quality of milk.
- Improving availability and access to credit finance for small dairy farmers to improve infrastructure and farm management practices.
- Integration and upgradation of technology across the value chain stages of dairy production is recommended.

Apart from these general suggestions, major recommendations are proposed based on the following components

- Strict Quality Adherence across the Value Chain
- Innovative Approach in International Marketing
- Ensuring Price Competency across Product categories and Destination Markets
- Implementing Internationally Compatible and Future Oriented Policies at National Level

### *Enforcing Strict Quality Adherence Across the Value Chain*

Throughout the study, it is clearly visible that the Indian dairy sector has to focus enormously on improving quality of the dairy products across the value chain. Needless to say, this is one of the chief components for enhancing smooth market entry to the countries with relatively large number of NTMs. The issues related to quality of milk (microbiological, chemical, adulteration & chemical contaminants) animal health, adopting & harmonization with international standards, traceability, animal welfare, mixing of buffalo milk with cow milk etc. are some of the major concern which requires immediate attention.

Up-gradation of dairy value chain would ensure increase in productivity and also maintain quality and food safety standards required to make milk product export ready. Integrated value chain management at the farm level should focus on acquiring technology, market and institutional capacity building resulting in innovation and increased competitiveness. Transportation time, water availability, humidity levels, distance, efficient distribution channels and packaging are all important considerations to develop an integrated value chain model for dairy for long term sustenance of the industry.

Implementing a national level program for education, training and seminars for clean milk production and adopting HACCP at farm level, detection of common & important animal diseases, animal nutrition etc will help to build a synergy to accomplish this tedious task. Moreover, availability of quality medicines & vaccines should be ensured by strengthening regulatory framework for quality.

Traceability of the dairy products up to farm level is also to be ensured in order to gain buyers confidence in developed markets. This will also eliminate a number of trade barriers; India is currently facing in many of the potential markets. Traceability facilitation initiatives such as NDDDB's Information Network for Animal Productivity & Health (INAPH) is definitely a stepping stone towards achieving this task. Such programmes should be implemented across the country with a sufficient support system. Moreover, such initiatives should cover the entire value chain of all the dairy products that are being exported.

### *Innovative Approach in International Marketing*

Primary survey insights clearly indicated that despite India being the largest producer of milk, it has failed to create awareness about its dairy industry or dairy products. Generic campaign to position India as world's largest milk production country with most ancient traditional knowledge and use of milk is the need of the hour. New Zealand & Australia has created its own brand in this space while India or Indian companies have failed to mark their position in the consumer market. Also, indigenous milk products

(Paneer, Lassi, Dahi and Indian Sweets) are to be marketed with the help of special international campaigns. This is clearly reflecting in the dairy product categories where India is price competitive but its reach in terms of quantity and number of countries is low. On the other hand, New Zealand and Australia despite having a high unit price are exporting more quantity than India.

If a general awareness or branding is not done at a mass level, it will be difficult for India to export its product to the world market despite international quality standards and competitive price by 2030. To generate awareness and register its presence pro-active measures are to be taken by government and more specifically by the Indian companies. Indian companies are fairly unknown in the international market. Encouraging firms to invest abroad (outward FDI) could also be a strategy to increase exports by 2030. Indian companies should also be made ready for new product development by understanding and doing research on the upcoming consumer trends. One of the rising consumer trends is the growing consumption of A2 milk and its products, as it is found to have numerous health benefits and primarily sourced from buffalos. India has a tremendous potential to export A2 Milk and therefore needs to promote and position itself as a leading supplier in the global market.

### *Ensuring Price Competency across Product categories and Destination Markets*

Prevailing market prices for existing and potential markets are analysed and appropriate price ranges are proposed for different dairy products which should be maintained while exporting to the destination markets. Future prices as well as the price competency of Indian dairy exports are calculated on the basis of existing as well as historic market prices across countries and product categories (Data regarding price has been extracted from ITC Trade map database). Additionally, the most appropriate action in order to maintain the price competency during future exports is elaborated in Table 9. 4.

*Table 9. 4; Price Competency and Recommended action for Existing Markets*

| <i>Product</i>            | <i>Existing Markets</i> | <i>Price Competency</i> | <i>Recommended Action</i>                            |
|---------------------------|-------------------------|-------------------------|--|
| <b>Bulk and Pack Milk</b> | Malaysia                | Competitive             | Maintain the existing price                          |
|                           | Qatar                   | Competitive             | Maintain the existing price                          |
|                           | Singapore               | Competitive             | Scope of gradual increase in price up to 80% by 2030 |
|                           | Sri Lanka               | Competitive             | Maintain the existing price                          |
|                           | Philippines             | Competitive             | Maintain the existing price                          |
|                           | Myanmar                 | Competitive             | Maintain the existing price                          |
| <b>SMP</b>                | UAE                     | Competitive             | Maintain Existing Price                              |
|                           | Malaysia                | Competitive             | Maintain Existing Price, Price<\$2450/tonne by 2030  |
|                           | Oman                    | Competitive             | Maintain Existing Price                              |
|                           | Qatar                   | Inconsistent Pricing    | Dynamic Price monitoring required                    |

| <i>Product</i>          | <i>Existing Markets</i> | <i>Price Competency</i>               | <i>Recommended Action</i>  |
|-------------------------|-------------------------|---------------------------------------|--|
|                         | Singapore               | Competitive                           | Maintain the Price, Price range \$1830/Tonne- \$2260/Tonne (2021-2030)   |
|                         | Bahrain                 | Inconsistent Pricing                  | Maintain price \$1500/Tonnes to \$2300 Tonnes (2021-2030)  |
|                         | Hong Kong               | HKG is less sensitive to price change | Dynamic Price monitoring required  |
|                         | Lebanon                 | Competitive                           | Maintain Existing Price  |
|                         | Kuwait                  | Competitive                           | Maintain Existing Price  |
|                         | Indonesia               | Inconsistent Pricing                  | Price Range \$2000/Tonne-\$2500 Tonne (2021-2030)  |
|                         | Philippines             | Inconsistent Pricing                  | Price Range \$1500/Tonne-\$2200 Tonne (2021-2030)  |
|                         | Russia                  | No Recent Export                      | If export resumes during 2024-2025 the price range would be \$1700/Tonne-\$2000/Tonne  |
| <b>Ghee</b>             | Saudi Arabia            | Competitive                           | Maintain Existing Price  |
|                         | UAE                     | Market is not price sensitive         | Price can be increased at least by 50% to 70%  |
|                         | Australia               | Scope to be competent                 | Immediate requirement to decrease the price by 7-10% and then maintain a range of \$6000/Tonne to \$8000/Tonne (2021-2030)                   |
|                         | Singapore               | Scope to be competent                 | Immediate requirement to decrease the price by 5-7% and then maintain a range of \$6000/Tonne to \$8000/Tonne (2021-2030)                    |
|                         | Hong Kong               | Competent                             | Scope of increasing the price by 15 to 20%   |
|                         | China                   | Inconsistent Price                    | Price range could be \$7000/Tonne to \$9000/Tonne (2021-2030)  |
|                         | Oman                    | Competitive                           | Maintain Existing Price  |
|                         | Russia                  | No Recent Export                      | If Exports Resumes during 2024-2025, the price range could be \$7000/Tonne to \$8000/Tonne   |
| <b>Fresh Cheese</b>     | Singapore               | Under Priced                          | Value addition of the product and better product positioning required. If done the price range could be between \$4500/Tonne to \$5000/Tonne |
|                         | Qatar                   | Competitive                           | Maintain Existing Price  |
|                         | Philippines             | Inconsistent Pricing                  | Price Range could be \$3500/Tonne to \$4000/Tonne  |
|                         | Kuwait                  | Competitive                           | Maintain Existing Price  |
|                         | Sri Lanka               | Under Priced                          | Value addition of the product and better product positioning required. If done the price range could be between \$4500/Tonne to \$5000/Tonne |
|                         | UAE                     | Competitive                           | Maintain Existing Price  |
|                         | Oman                    | Competitive                           | Maintain Existing Price  |
|                         | Hong Kong               | Inconsistent Pricing                  | Price Range could be \$5000/Tonne to \$7000/Tonne  |
|                         | Thailand                | Inconsistent Pricing                  | Price Range could be \$4000/Tonne to \$5000/Tonne  |
| <b>Processed Cheese</b> | UAE                     | Competent                             | Price can be increased by 10-15% if value addition is done adequately  |
|                         | Singapore               | Competent                             | Price can be increased by 15-20% if value addition is done adequately  |
|                         | Qatar                   | Competent                             | Maintain Existing Price  |
|                         | Oman                    | Competent                             | Maintain Existing Price  |
|                         | Hong Kong               | Competent                             | Price range could be \$5000/Tonne to \$6000 Tonne  |
|                         | Saudi Arabia            | Competent                             | Maintain Existing Price  |

| <i>Product</i>          | <i>Existing Markets</i> | <i>Price Competency</i> | <i>Recommended Action</i>  |
|-------------------------|-------------------------|-------------------------|--|
|                         | Malaysia                | Not Competent           | A price range of \$4000/Tonne to \$5000/Tonne can be followed  |
|                         | Myanmar                 | Inconsistent Pricing    | Price range of \$5000/Tonne to \$6000/Tonne can be followed  |
|                         | Thailand                | Competent               | Maintain Existing Price  |
| <b>Other Cheese</b>     | UAE                     | Under Priced            | Price can be increased by 20-40% if value addition is done adequately  |
|                         | Singapore               | Under Priced            | Price can be easily increased by 40-50%. Price Range \$7000/Tonne to \$9000/Tonne. Adequate value addition is required |
|                         | Qatar                   | Competitive             | Maintain Existing Price  |
|                         | Bahrain                 | Competitive             | Scope to increase the price by 5 to 7 %  |
|                         | Saudi Arabia            | Competitive             | Maintain Existing Price  |
|                         | Hong Kong               | Competitive             | Price can be maintained at \$5000/Tonne to \$7000/Tonne  |
|                         | Philippines             | Competitive             | Maintain Existing Price  |
|                         | USA                     | Under Priced            | Price can be increased by 20-40% if value addition is done adequately  |
|                         | Oman                    | Competitive             | Maintain Existing Price  |
|                         | Malaysia                | Competitive             | Maintain Existing Price  |
| <b>Butter</b>           | UAE                     | Under Priced            | Price can be increased by 50-60% and be in the price range of \$6000/Tonne to \$7000/Tonne                             |
|                         | Singapore               | Competitive             | Price Range \$6000/Tonne to \$7000/Tonne   |
|                         | Qatar                   | Competitive             | Maintain Existing Price  |
|                         | Oman                    | Competitive             | Maintain Existing Price  |
|                         | Hong Kong               | Competitive             | Price could be increased by 5-15%  |
|                         | Saudi Arabia            | Competitive             | Maintain Existing Price  |
|                         | Australia               | Inconsistence           | A price range of \$5000/tonne to \$7000/tonne can be maintained (2021-2030)  |
|                         | Philippines             | Inconsistence           | Dynamic Price monitoring required  |
|                         | USA                     | Competitive             | The price can be increased by 15-20 %  |
| <b>WMP</b>              | Qatar                   | Inconsistent pricing    | Focus should be on retail WMP and price range \$4000/Tonne to \$5000/Tonne   |
|                         | Singapore               | Competitive             | Focus should be on bulk product with a price range of \$700-\$800/Tonne  |
|                         | Oman                    | Inconsistent Export     | Price Range \$3000/Tonne to \$4000/Tonne   |
|                         | Malaysia                | Inconsistent Export     | Price Range \$2000/Tonne to \$3000/Tonne   |
| <b>Infant Milk Food</b> | UAE                     | Competitive             | Maintain the existing Price  |
|                         | Malaysia                | Competitive             | Improve quality and maintain a price range of \$2000/Tonne to \$3000/Tonne   |
|                         | Thailand                | Inconsistent Pricing    | Maintain a price range of \$4000/Tonne to \$5000/Tonne   |
|                         | Vietnam                 | Inconsistent Pricing    | Maintain a price range of \$4000/Tonne to \$5000/Tonne   |
|                         | Indonesia               | Inconsistent Pricing    | Maintain a price range of \$4000/Tonne to \$5000/Tonne   |
|                         | Qatar                   | Under Priced            | Dynamic Price monitoring required  |
|                         | Bahrain                 | Under Priced            | Dynamic Price monitoring required  |



| <i>Product</i>     | <i>Existing Markets</i> | <i>Price Competency</i> | <i>Recommended Action</i>   |
|--------------------|-------------------------|-------------------------|---|
|                    | Russia                  | Inconsistent Export     | when export resumes maintain a price range of \$4000/Tonne to \$5000/Tonne              |
|                    | Saudi Arabia            | Under Priced            | Dynamic Price monitoring required   |
|                    | Philippines             | Competitive             | Improve quality and maintain a price range of \$3000/Tonne to \$4000/Tonne              |
|                    | Myanmar                 | Inconsistent Pricing    | Improve quality and maintain a price range of \$3000/Tonne to \$4000/Tonne              |
|                    | Oman                    | Under Priced            | Dynamic Price monitoring required   |
| <b>Yoghurt</b>     | UAE                     | Competent               | Maintain the existing price   |
|                    | Singapore               | Inconsistent Pricing    | Identify the Yoghurt variety and maintain a price range of \$3000/Tonne to \$4000/Tonne |
|                    | Hong Kong               | Inconsistent Pricing    | Identify the Yoghurt variety and maintain a price range of \$3000/Tonne to \$4000/Tonne |
| <b>Whey Powder</b> | UAE                     | Competitive             | Maintain the price range at \$3000/Tonne to \$3500/Tonne                                |
|                    | Qatar                   | Inconsistent Pricing    | Dynamic Price monitoring required   |
|                    | Australia               | Inconsistent Pricing    | Maintain the price range at \$3000/Tonne to \$4000/Tonne                                |
|                    | Bahrain                 | Inconsistent Pricing    | Maintain the price range at \$3000/Tonne to \$3500/Tonne                                |
|                    | Viet Nam                | Inconsistent Pricing    | Maintain a price range of \$1500/Tonne to \$2000/Tonne                                  |
|                    | Sri Lanka               | Inconsistent Pricing    | Maintain a price range of \$1500/Tonne to \$2000/Tonne                                  |
|                    | Ethiopia                | Inconsistent Pricing    | Maintain a price range of \$1500/Tonne to \$2000/Tonne                                  |
| <b>Cream</b>       | UAE                     | Competitive             | Maintain a price range of \$3000/Tonne to \$4000/Tonne                                  |
|                    | Singapore               | Competitive             | Maintain a price range of \$3000/Tonne to \$4000/Tonne                                  |
|                    | Qatar                   | Under Priced            | Maintain a price range of \$3000/Tonne to \$4000/Tonne                                  |
|                    | USA                     | Inconsistent Pricing    | Maintain a price range of \$2000/Tonne to \$3000/Tonne                                  |
|                    | Hong Kong               | Inconsistent Pricing    | Maintain a price range of \$3000/Tonne to \$4500/Tonne                                  |
|                    | Myanmar                 | Inconsistent Pricing    | Maintain a price range of \$2000/Tonne to \$3000/Tonne                                  |

Source: Author's Analysis based on Trade map quarterly Import data ([www.trademap.org](http://www.trademap.org))

Table 9. 5. Additionally, recommended actions in order to achieve the price competency in potential markets.

*Table 9. 5.Recommended Actions for Potential Markets*

| <i>Product</i> | <i>Potential Markets</i> | <i>Projected Price Range/Recommended Actions</i> |
|----------------|--------------------------|--|
| <b>Ghee</b>    | Mexico                   | \$7000/Tonne to \$8000/Tonne                     |
| <b>WMP</b>     | Bhutan                   | \$2000/Tonne to \$3000/Tonne (Retail)            |
|                | Mauritius                | \$3000/Tonne to \$4000/Tonne (Retail)            |
|                | Kuwait                   | \$4000/Tonne to \$5000/Tonne (Retail)            |
|                | Russia                   | \$3000/Tonne to \$4000/Tonne (Retail)            |
|                | Indonesia                | \$2000/Tonne to \$3000/Tonne (Retail)            |

| <i>Product</i>            | <i>Potential Markets</i> | <i>Projected Price Range/Recommended Actions</i>                                      |
|---------------------------|--------------------------|---|
|                           | China                    | \$3000/Tonne to \$4000/Tonne (Retail)   |
| <b>Butter</b>             | Cambodia                 | Price Range-\$2000/Tonne to \$3000/Tonne  |
|                           | South Korea              | Continue the existing bulk price and maintain\$5000/Tonne to \$6000/Tonne for retail  |
|                           | Macao                    | Continue the existing bulk price and maintain \$6000/Tonne to \$7000/Tonne for retail |
|                           | Japan                    | Price Range of \$5000/Tonne to \$6000/Tonne   |
|                           | Russia                   | Price Range of \$5000/Tonne to \$6000/Tonne   |
|                           | China                    | Price Range of \$5000/Tonne to \$6000/Tonne   |
| <b>Bulk and Pack Milk</b> | Vietnam                  | Improve branding and maintain a price range of \$1000/tonne to \$1500/Tonne           |
|                           | Oman                     | Improve branding and maintain a price range of \$1000/tonne to \$1500/Tonne           |
| <b>Processed Cheese</b>   | Jordan                   | Price Range of \$5000/Tonne to \$6000/Tonne   |
|                           | Indonesia                | Price Range of \$4000/Tonne to \$5000/Tonne   |
|                           | Lebanon                  | Price Range \$5000/Tonne to \$5500/Tonne  |
|                           | Philippines              | Price Range \$2000/Tonne to \$3500/Tonne  |
|                           | China                    | Price Range if \$5000/Tonne to \$6000/Tonne   |
| <b>Cream</b>              | Mauritius                | Improve branding/quality and maintain a price range of \$3000/Tonne to \$4000/Tonne   |
|                           | Russia                   | Maintain a price range of \$2000/Tonne to \$3000/Tonne                                |
|                           | Malaysia                 | Maintain a price range of \$2000/Tonne to \$3000/Tonne                                |
|                           | Bahrain                  | Maintain a price range of \$1000/Tonne to \$1500/Tonne                                |
|                           | Viet Nam                 | Improve branding/quality and maintain a price range of \$1000/Tonne to \$1500/Tonne   |
|                           | Indonesia                | Improve branding/quality and maintain a price range of \$1000/Tonne to \$1500/Tonne   |
|                           | China                    | Price Range \$3000/Tonne to \$4000/Tonne  |
| <b>Whey</b>               | Russia                   | Price range to be maintained at \$1000/Tonne to \$1500/Tonne                          |
|                           | China                    | Price range to be maintained at \$1000/Tonne to \$1500/Tonne                          |
| <b>Yoghurt</b>            | Malaysia                 | Price Range of \$1500/Tonne to \$2000/Tonne   |
|                           | Oman                     | Price Range of \$1500/Tonne to \$2000/Tonne   |
|                           | Russia                   | Price Range of \$1500/Tonne to \$2000/Tonne   |
|                           | Philippines              | Price Range of \$1500/Tonne to \$2000/Tonne   |
|                           | China                    | Price Range of \$1500/Tonne to \$2000/Tonne   |
| <b>Other Cheese</b>       | Russia                   | Price Range \$4000/Tonne to \$5000/Tonne  |
|                           | Vietnam                  | Price Range \$4000/Tonne to \$5000/Tonne  |
| <b>Infant Milk Food</b>   | Kazakhstan               | Price Range of \$5000/Tonne to \$5500/Tonne   |
| <b>Fresh Cheese</b>       | Philippines              | Price Range of \$3000/Tonne to \$4000/Tonne   |
|                           | Macao                    | Price Range of \$3000/Tonne to \$4000/Tonne   |
|                           | Indonesia                | Price Range of \$3000/Tonne to \$4000/Tonne   |
|                           | China                    | Price Range of \$3000/Tonne to \$4000/Tonne   |
|                           | Viet Nam                 | Price Range of \$3000/Tonne to \$4000/Tonne   |
| <b>SMP</b>                | China                    | Maintain price Range of \$2000/Tonne to \$3000/Tonne                                  |

*Source: Author's Analysis*

To tackle the global price fluctuation and the inconsistency in setting export prices, a comprehensive system in the form of a business and marketing intelligence unit may be developed. The role of this unit is to capture and analyse data related to:

- Prevailing global market prices of leading players
- International commodity exchange (CME, NZX, EEX, GDT, CLAL, IFCN, USDA) prices
- Ocean freight and Insurance charges
- Overhead cost related to obtaining international quality certification

### *Framing Internationally Compatible and Future Oriented Policies*

Efficiency of the policy ecosystem greatly influences the competency of domestic products in the International markets. Due to the dynamic nature of policy set-up in the country, it is challenging to propose a particular policy for dairy. This statement becomes more pertinent due to the recent experiences of policy failure in WTO which directly affects exports originating out of India

In the coming years, the re-structuring of export promotion schemes should benefit farmers and MSMEs at large rather than channelling a large part of the benefits to MNCs. This happened to be one of the major short comings of India's previous export promotion schemes. Many developed countries disguise the subsidies in the form of assistance given at farm level rather than providing direct subsidies that are contingent to export performance. India should follow similar path that will be valuable to the country's dairy export ambitions for a longer time period.

Integration of activities of various export related agencies using Information and Communication Technology can contribute towards reduced lead time for Indian dairy exports by enabling seamless transfer of trade documents, SPS/TBT related document etc, across government agencies resulting in reduced export documentation time.

Following types of assistance in the form of subsidies are proposed based on a careful introspection of existing policy framework along with their adherence to international norms.

- I. Subsidies for covering marketing costs of exports (until 2023)
- II. Subsidies for covering transport costs for agriculture exports (until 2023)
- III. Subsidies for R&D (Research and Development)
- IV. Subsidies for Modernising and Up-gradation

V. Actionable Subsidies which does not exceed 5 percent of total ad volerum

In addition to this the Government of India’s recently proposed scheme of income support to farmers can also act as a viable alternative to the looming issue of incompatibility of schemes with WTO.

The following table is an attempt to map the recommendations with the export related problems faced by the exporter (Table 7. 33) in given in table

*Table 9. 6: Mapping Recommendations with the Export Related Problems*

| S. No | Export Market Problems  | Percentage of Dairy exporters | Major Recommendation to overcome Export Problems   |
|-------|---|-------------------------------|--|
| 1     | Unable to compete with the lower prices of competitors                                      | 23%                           | Ensuring Price Competency across Product categories and Destination Markets  |
| 2     | Difficulty in timely delivery of export order due to delays in transportation and logistics | 13%                           | Integration and upgradation of technology across the value chain stages of dairy production is recommended.  |
| 3     | Difficulty in Securing new orders   | 10%                           | To tackle the global price fluctuation and the inconsistency in setting export prices, a comprehensive system in the form of a business and marketing intelligence unit may be developed |
| 4     | Difficulty in timely sourcing/procurement and production                                    | 10%                           | Integration and upgradation of technology across the value chain stages of dairy production is recommended   |
| 5     | Difficulties in sourcing good quality raw materials   | 8%                            | Enforcing Strict Quality Adherence Across the value chain  |
| 6     | Difficulty to compete with the Innovative products in International Markets                 | 8%                            | Innovative Approach in International Marketing   |
| 7     | Non-Tariff barriers in the destination country  | 8%                            | Strict Quality Adherence across the value chain, Development of DEZ  |
| 8     | Rejection in importing country due to quality issues  | 8%                            | Strict Quality Adherence across the value chain  |
| 9     | Tariff barriers in the destination country  | 6%                            | Implementing Internationally Compatible and Future Oriented Policies at National Level   |
| 10    | Rejection in importing country due to Packaging/ Labelling issues                           | 4%                            | Strict Quality Adherence across the value chain  |
| 11    | Bad Perception on Indian Dairy products in International Markets                            | 2%                            | Innovative Approach in International Marketing   |
| 12    | Rejection in importing country due to Contaminates  | 2%                            | Strict Quality Adherence across the value chain  |

## 9.6 Concluding Remarks

Since the White Revolution in the 1970, Indian Dairy industry has come a long way from being a milk deficit country to achieving the target of the world’s largest milk producer. Currently India’s contribution in world’s milk production is 22% and is expected to have an annual growth rate of 6 % while the rest of the world’s annual growth rate is expected to be stagnate at 1%. This scenario offers a golden opportunity for Indian organized dairy sector to enhance the share in export market.

Carefully crafted policies have helped the country to improvise primary activities associated with the industry such as breeding, production and procurement. Even though the Indian dairy industry is capable of meeting the domestic market demands it fails to have the necessary competence to make a notable impact in overseas markets. Constant efforts of policy makers to improvise Indian dairy industry has helped in developments of primary dairy farming related segments such as rearing and breeding, production and procurement and basic cold chain management. Even though these accomplishments are satisfactory from the context of domestic market, it is still far from fulfilling the market demands of many foreign countries especially in pricing and quality aspects. This peculiar situation makes it imperative for Indian dairy sector to transform its operational approaches towards an international market-oriented perspective rather than confine to meeting domestic needs, especially in terms of quality control, traceability and marketing (including pricing). As suggested by this report, Indian dairy industry has to broaden its horizon by planning, organizing and implementing step by step enhancements towards increasing its market share to 5% in international markets by the year 2030. A handcrafted marketing strategy for different types of dairy products according to their identified potential backed by a meticulous quality control and traceability system implemented across India is considered as the central component to achieve this vision.

