INDIAN DAIRY BUSINESS: A POLICY ANALYSIS

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POST GRADUATE INSTITUTE OF AGRI-BUSINESS MANAGEMENT

JUNAGADH AGRICULTURAL UNIVERSITY

JUNAGADH- 362001

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INDIAN DAIRY BUSINESS: A POLICY ANALYSIS

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DEDICATED TO MY

RESPECTED GUIDE

AND

MY FAMILY

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POST GRADUATE INSTITUTE OF AGRI-BUSINESS MANAGEMENT
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Name of the student — Advisor

Ravi Madariya — **Dr. Kalpesh Kumar**

"INDIAN DAIRY BUSINESS: A POLICY ANALYSIS"

ABSTRACT

***Key words*:** India's dairy export, India's dairy import, Stipulation, Policy analysis

India has 57 per cent of the world buffalo population and 16 per cent of the cattle population. The dairy sector occupies a dominant place in providing food, income, employment and foreign exchange to the Indian economy. The share of dairy sector to the agricultural GDP was tremendous and it has been showing upward trend.

India's ghee and butter oil and skimmed milk powder exports were decreased during period I but ghee and butter oil, milk food for babies; butter and whole milk powder were drastically increased after WTO implementation. However, milk food for babies and butter were increased in both periods due to more domestic demand with the changing consumption pattern and life style. In over all period, except whole milk powder, exports of all the selected dairy products were increased. Similar results were obtained in case of imports. However, the policies were mainly concerned with domestic market, import regulations as well as import substitutions during period I (2000- 2010). But in period II (2011-2020) the concern was on export quality control and import of dairy products in the country. In case of ghee and butter oil. export was found to be Increasing non-significantly period I with the time variation (16%) in export while in period I. It was decreased significantly revealed 93 per cent fluctuation in data due to time only. The negative impact was seen in case of government policies on export of ghee and butter oil. All the selected countries removed the import restriction on ghee and butter oil, except for USA, where quota was converted into Tariff Rate Quota.

To explore the export potential of the country, it should support domestic producers as well as traders within the frame work of WTO era based on the dynamics of international markets.

POST GRADUATE INSTITUTE OF AGRIBUSINESS MANAGEMENT
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CERTIFICATE-I

This is to certify that the project work report entitled **"INDIAN DAIRY BUSINESS : A POLICY ANALYSIS"** submitted by **RAVI MADARIYA** in partial fulfillment of the requirements for the award of the degree of **MASTER OF BUSINESS ADMINISTRATION IN AGRI-BUSINESS** to the Junagadh Agricultural University is a record of bonafide project work carried out by him under my guidance and supervision and the project work has not previously formed the basis for the award of any degree, diploma or other similar title. The candidate had fulfilled all prescribed requirements. The assistance and help received during the course of investigation have been fully acknowledged. He has successfully completed the comprehensive/preliminary examination held on **July 30, 2021** as required under the regulation for post-graduate studies. He has submitted kachha bound project work report on **July 31,2021.**

Place: Junagadh
Date: / /

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CERTIFICATE-II

Date: / /2021

This is to certify that the project work report entitled **"INDIAN DAIRY BUSINESS: A POLICY ANALYSIS"** submitted by **Mr. RAVI MADARIYA** to Junagadh Agricultural University, Junagadh in partial fulfillment of the requirements for award of the degree of **MASTER OF BUSINESS ADMINISTRATION IN AGRI-BUSINESS** after recommendation by the project evaluation committee were defended by the candidate before the following members of the evaluation committee. The performance of the candidate in the oral examination was satisfactory. We, therefore, forward with recommendation.

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TO WHOM IT MAY CONCERN

This is certify that ***Mr. Ravi Madariya***, a student of Post Graduate Institute of Agri-Business Management at Junagadh Agricultural University, Junagadh has successfully completed his project work from 01/05/2021 to 30/06/2021 in Vivan Dairy.

He has submitted the final report as per the guideline provided by the company and during the period of his project, he was found punctual, hardworking and inquisitive.

We wish him all the best for his future.

Vivan Dairy

Authorized Signature

VIVAN DAIRY G.I.D.C. SHIL TA.MANGROL

ACKNOWLEDGEMENT

In the accomplishment of this project successfully, many people have best owned upon me their blessings and the heart pledged support, this time I am utilizing to thanks all the people who have been concerned with this project.

This project report entitled **INDIAN DAIRY BUSINESS: A POLICY ANALYSIS** is not the product of exclusively my efforts. For the completion of this work, I received magnanimous support from many that, a comprehensive acknowledgement is almost impossible. Still, I would like to reckon from my inner heart, my deep gratitude and indebtedness to all.

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Words cannot enunciate the virtuous support and love given by my **Parents** for their long last belief, constant support, prayers and blessings which helped me to reach where I am today.

A word of apology to all those I have not mentioned in person and note of thanks to each and every one who have blessed me with their prayers.

Needless to say, I solely am responsible for any errors, which may remain…….

Place: Junagadh

Date: / /2020

(Ravi Madariya)

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LIST OF ABBREVIATIONS

AEZ	Agriculture Export Zone
AGMARK	The Grading on Agriculture Marketing Produce
AMUL	Anand Milk Union Ltd.
AOA	The Agreement on Agriculture
AOS	Air and Ocean Shipment
BIS	Bureau of Indian Standards
BR	Barometric Reading test
CAC	Codex Alimentarius commission
CF	Cost and Freight
CIF	Cost and Insurance Freight
DEPB	Duty Entitlement Passbook
DFRC	Duty Free Replenishment Certificate
EC	The European Commission
EIC	The Export Inspection Council
EPCG	Export Promotion Capital Goods
EU	The European Union
FAO	Food and Agriculture Organization
FDA	Food and Drug Administration
FFA	Free Fat Average
FOB	Free on Board
GATT	The General Agreement on Trade and Tariff
GCMMF	Gujarat Co-operative milk Marketing Federation, Anand
GDP	Gross Domestic Product
GOI	The Government of India
HACCP	Hazard Analysis and Critical Control Point
HILL	Hindustan Liver Ltd.
INR	Indian Rupees
IPO	Import Policy Order
ISO	International organization for standardization
LC	Letter of Credit
MMPO	Milk and Milk Products Order

MPSP	Milk Price Capital Support Programme
NDDB	National Dairy Development Board
NTBs	Non- Tariff Barriers
OECD	Organization of Economic Cooperation and Development
OF	Operation Flood
OGL	Open General License
PFA	Prevention of Food Adulteration
PIS	Pre-Shipment Inspection
PMO	Pasteurized Milk Ordinance
QMS	Quality Management System
QRs	Quantitative Restrictions
RM	Recto Meter Value
SIL	Special Import License
SMP	Skimmed Milk Powder
SPS	Sanitary and Phyto Sanitary measures
TBT	Technical Barriers to Trade
TQM	Total quality Management
TRIP	Trade Related Intellectual Property Rights
TRQ	Tariff Rate Quota
UPC	Universal Product Code
UR	The Uruguay Round
WTA	World Trade Agreement
WTO	World Trade Organization
RCA	Revealed Comparative Advantage
TPS	Trade Potential score

INTRODUCTION

CHAPTER I

INTRODUCTION

1.1 INDIAN DAIRY SECTOR: AN OVERVIEW

The livestock segment constitutes an important segment of the Indian economy which in 2017-2018, contributed 4.9 per cent of GDP and 28.4 per cent of agricultural and allied GDP in 2017-18. The livestock sector helps ease inequality and poverty in the country's rural areas, in addition to creating jobs for Indian farmers. Dairy is an important sub-sector in India's rural economy within the livestock sector. The livelihood of the country's nearly 8.47 million people is dairying, 71per cent women. Crop production offers 90-120 days of work a year; the remainder provides alternate work opportunities for the dairy sector (Labour Market Information System on Dairy, Agriculture Skill Council of India). According to the National Account Statistics (2017), milk accounts for 67 per cent of livestock share.

The data indicate a 32 per cent rise in milk production over the combined paddy and wheat yield. The monthly average revenue from the farm household was 2604, of which 69 per cent was generated from the sales of milk between July 2012 and June 2013. This sector is expected to help double farmers' incomes by 2021-22.

In addition to its value to the Indian economy, India is the world's leading milk producer contributing 22 per cent of global milk production in 2017 (Food and Agriculture Organization, 2018). Milk production and per-capita availability in India were 55.6 million tonnes and 178 g/day in 1991, which grew to 187.7 million tonnes and 394 g/day in 2018. The milk production CAGR was 4.4 per cent in 2018. It was expected to increase to 254.55 MMT by 2021-22 and 300 MMT by 2023-24. In rural areas, 48 per cent of overall milk supply is either producer-level self-consumed or marketed to non-producers. The remaining 52 per cent of milk is available to urban consumers. Of the 52 per cent, around 40 per cent is managed by the organised sector (20 per cent by dairy co-operatives and 19 per cent by private dairies), with the remaining 60 per cent regulated by the unorganised sector. Antecedents like higher per capita income, higher urbanisation, population growth, and changing food habits are responsible for increasing India's milk production and demand. Elements like improved village dairy co-operative networks and government initiatives including Rastriya Gokul Mission (RGM), National Dairy Plan (NDP) (Phase-I), and Intensive Dairy

Development Programme (IDDP), not to mention government expenditure on dairy sector development, serve to push up milk production in India.

The Indian dairy industry faces numerous challenges despite being a world leader in milk production. These challenges hinder milk production growth, milk producers' exposure to the organized market, milk processing, milk-related value-added commodity production and finally consumer access to quality milk and milk products. The Indian dairy industry's major challenges include low productiv-ity, imbalanced feed, technological adaptation and lack of village supply chain facilities among other things. Hence, we assess the Indian dairy industry's success in milk production and the value of the Indian economy's milk market. We also examine employment trends and the output of the organized dairy industry.

1.2 OVERVIEW OF MILK PRODUCTION AND CONTRIBUTION OF INDIAN ECONOMY

India is the world's leading milk producer contributing 22 per cent to global milk supply followed by the US (20%), Pakistan (5.5%), China (4.3%), Brazil (4.2%), Germany (4.1%), and so on. In 2018, these six countries contributed about 52 per cent to global milk production (Table 1.1). Fifteen countries now contribute 71 per cent of the overall global milk supply. Between 2001 and 2018, India's milk production grew about nine-fold reflecting a compound annual growth rate of around four per cent per year. Multiple factors including Operation Flood, the existence of organized milk co-operatives, improved transportation, superior distribution networks, and a higher cattle population are responsible for enhancing the milk production. Another component is equally responsible for expanding the demand for milk and milk products in India

Table 1.1 Global milk production of top fifteen milk producing countries

Country	2001-02 (Million Tonnes)	Share (%)	2018-19 (Million Tonnes)	Share (%)
India	83.6	14.2	186	22.06
USA	75	12.7	167	19.81
Pakistan	26.3	4.5	46	5.46
Brazil	21.4	3.6	36	4.27
China	14.5	2.5	32	3.8
Russia	32.9	5.6	31.2	3.9
Germany	28.2	4.8	32.7	4.1
New Zealand	13.1	2.2	21.4	2.7
Turkey	9.5	1.6	20.7	2.6
UK	14.7	2.5	15.3	1.9
Netherlands	11	1.9	14.5	1.8
Poland	11.9	2.0	13.7	1.7
Italy	12.3	2.1	12.0	1.5
Mexico	9.7	1.6	12.0	1.5
Ukraine	13.4	2.3	10.5	1.3
Top 15 countries	**377.6**	**64**	**570.9**	**70.9**
Rest of the World	**212.5**	**36**	**234.3**	**29.1**

(Source: Anonymous, 2021b)

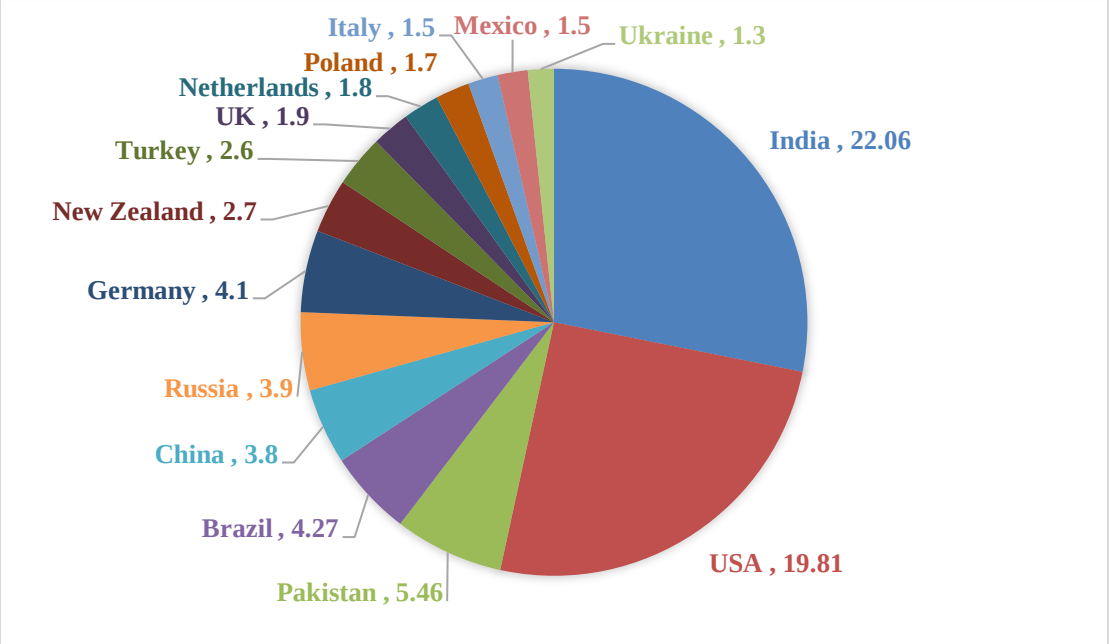

Fig. 1.1 Major milk producing countries

(Source: Anonymous, 2021b)

India's milk production witnessed growth from 20 million tonnes in 1961 to 176 million tonnes in 2017. In the same period, India's contribution to global milk production significantly increased by 6 per cent to 22 per cent with an annual growth rate of 4 per cent. In the context of state-wise milk production, Uttar Pradesh contributed 17 per cent of all India's milk production, followed by Rajasthan (13%), Madhya Pradesh (8%), Gujarat (7.7%), Andhra Pradesh (7.4%), Punjab (6.8%), Maharashtra (6%) and Uttarakhand (1%) which figured the lowest of India's 19 states. A few states like Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat, Andhra Pradesh, and Punjab perform better in terms of milk production compared to other states in India. These six states contributed around 59 per cent to milk production nationally in 2018 (Table 1.2). India's 19 states contributed about 97 per cent of the country's milk. The per capita milk availability (gram/day) of nine states namely Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh, Andhra Pradesh, Himachal Pradesh, Uttarakhand, and J&K are above the national per capita milk availability while the remaining states and UTs figure are below the national average.

Table 1.2 State wise milk production

States	2001-02		2018-19	
	Milk (Million tonnes)	**Share (%)**	**Milk (Million tonnes)**	**Share (%)**
Uttar Pradesh	14.6	17.36	30.5	16.26
Rajasthan	7.7	9.19	23.7	12.61
Madhya Pradesh	5.2	6.26	15.9	8.47
Andhra Pradesh	5.8	6.95	15.0	8.01
Gujrat	5.2	6.89	14.5	7.72
Punjab	7.9	9.40	12.6	6.71
Maharashtra	6.0	7.22	11.7	6.21
Haryana	4.9	5.90	10.7	5.71
Bihar	2.6	3.16	9.8	5.23
Tamil Nadu	4.9	5.91	8.4	4.45
Karnataka	4.7	5.68	6.5	3.97
West Bengal	3.5	4.16	5.83	3.13
Telangana	NA	0.00	4.6	2.83
Kerala	2.7	3.22	2.5	1.52
Jammu and Kashmir	1.3	1.61	2.3	1.44
Odisha	9.29	1.10	2.0	1.21
Jharkhand	9.4	1.11	1.8	1.14
Uttarakhand	10.0	1.26	1.6	1.02
Top 19 states	**81.34**	**96.38**	**160.80**	**97.26**
Rest of the states and Union Territories	30.59	3.63	4.53	2.73

(Source: Anonymous, 2020)

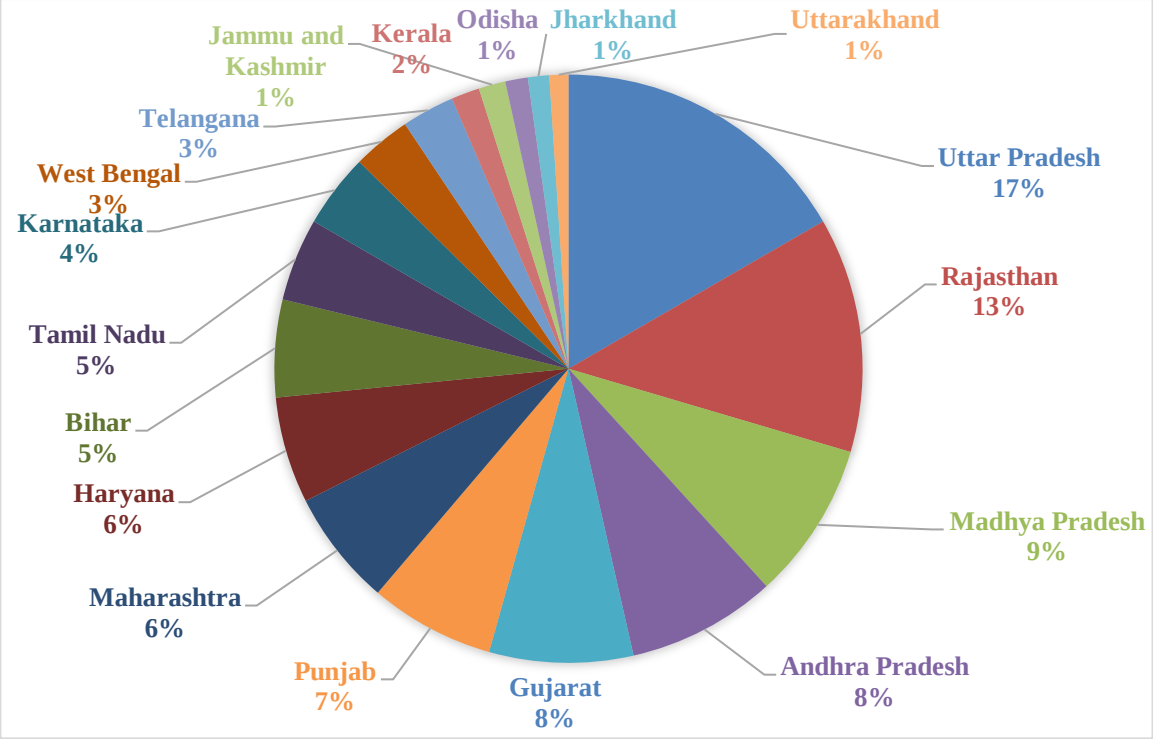

Fig. 1.2 Top milk producing states in India (2018-19)

(Source: Anonymous, 2020)

Livestock is an important segment of the Indian economy within the agriculture and allied sector. In 2019, livestock accounted for 4.11 per cent of GDP, while ten states contributed as a percentage of GSDP compared to the nation. The livestock sector contributed 9.5 per cent of GSDP in Andhra Pradesh, followed by Rajasthan (9.2%), Punjab (8.4%) and Goa (0.4%) which contributed the least. Within the livestock sector, the share of milk and milk products represents 67 per cent of total livestock production followed by meat (21%), dung (5.5%), eggs (3.2%), silkworm cocoons and honey (0.8%) and wool and hair (0.1%) which had the lowest share among all livestock products in 2016. This sector stimulates poverty reduction and food security for millions of rural farm households. The sector also generates employment opportunities for the landless and the marginal and small farmers, particularly women. Crop production generates rural jobs for 90 to 120 days; dairying provides alternate employment opportunities for the rest of the year. In 2016, milk grabbed the highest share, *i.e.* 67 per cent of the total livestock products. Milk and its products contribute over 32 per cent of paddy's and wheat's combined output.

1.3 COMPANY INTRODUCTION

Vivan Dairy first started Bulk milk chilling center to collect milk near villages and supply other dairy in November, 2017 and then milk pouch packing started in April, 2018. Now a

day's Vivan dairy product range are gold, tazza and tea special milk verity, dahi, butter-milk. ghee and supply in Junagadh and Gir-Somnath district through dealers and retailers to cover local market. Company started with aims provide adulteration free and best quality milk to their loyal consumers. Company located at near Mangrol Porbander high way Shil village Shil GIDC, Mangrol taluka of Junagadh district.

In beginning company collecting milk from 15 villages of Junagadh and transported to chilling center. Total 4000 liter per day of milk collected in November 2017; After that at the time of packing started in April, 2018 company collecting around about 9000 liter of milk per day from 28 villages. Now a day company collected more than 10,000 liters per day of milk processing and packaging than distributed in local market and Junagadh and Gir-Somnath districts. Company aim is within one year reach to one lakh liter per day processing capacity cover up and Junagadh district number one quality milk producers.

1.3.1 Company Profile

Name of the company	Vivan Dairy
Corporate office	PLOT NO.39 G.I.D.C MANGROL PORBANDAR HIGHWAY AT-SHIL TA-MANGROL DIS-JUNAGDH(GUJ)
Logo of the company	
Year of establishment	2017
Company Director	Mr. Nayan Patel
E-mail	vivandairy@gmail.com
Contact No.	7499999938

1.3.2 Products of the company

- Vivan Tazza
- Vivan Gold
- Vivan Tea-special
- Vivan Butter-milk
- Vivan Ghee
- Vivan dahi

1.4 PRACTICAL UTILITY OF THE RESEARCH

Indian dairy industry was facing emerging challenges and also had a great opportunity in global trade. Overall studies in this regard gave pictures of the Indian temporal dairy trade policies and what was the impact of particular policies on export and imports of selected dairy products. This study would be helpful for both traders and government policies makers/advisory members and in accordance to the international trade, safeguarding the domestic market, framing new policy after appraising an earlier policy. So that the Indian dairy industry prospers further generate employment, compete in the international market and convert challenges into opportunities by providing suitable trade policy to the Indian dairy industry. Hence, it was felt necessary that to know the different policies implemented and their impact on Indian dairy trades.

1.5 OBJECTIVES OF THE STUDY

1. To document the existing government policies on imports and exports of dairy products in India.
2. To study the trends in exports and imports of selected dairy products from India.
3. To study the impact of changes in government policies on exports and imports of selected dairy products in India.
4. To study the existing stipulation in selected importing countries on selected dairy products.
5. To study India's export potential - Dairy products and market identification.

1.6 LIMITATION OF THE STUDY

The present study is based on secondary data regarding Indian government policies on imports and exports of dairy products which was collected from various published sources. The study area is limited only to India. Hence, the conclusion may not be applicable to other countries and results obtained from the study have a chance of flexibility.

REVIEW OF LITERATURE

CHAPTER- II

REVIEW OF LITERATURE

Review of literature gives the guidelines from the past researchers and provides a foundation to the theoretical framework for present investigation. The review of past literature makes the investigator to get an insight into the methods and procedures to be followed. Since the available literature relevant to the objectives of the present study were rather limited, studies related to other products were also reviewed and highlighted under the following headings.

2.1 Document the existing government policies on imports and exports of dairy products in India

2.2 Trends in exports and imports of selected dairy products in India

2.3 Impact of changes in Government policies on Exports and imports of selected dairy products in India

2.4 Existing stipulations in selected importing countries on selected dairy products

2.5 India's export potential - Dairy products and market identification

2.1 DOCUMENT THE EXISTING GOVERNMENT POLICIES ON IMPORTS AND EXPORTS OF DAIRY PRODUCTS IN INDIA

Chaudhuri (1996) in this study documented early attempts (1890-1924) in a agricultural development in India such as the Royal Commission on Agriculture, the Bombay plan, the Milk Producers Cooperative at Anand, other post-independence dairy development plans. the intensive cattle development project, the fourth five-year plan, the National Dairy Development Board; canalization of imported dried milk, and milk pricing policy.

Alagh (1997) covered changes in activities and policies of the Indian agricultural sector particularly dairying in recent years and measures that should be taken to develop a vibrant dairy economy.

Kulkarni *et al*. (1997) presented the review of present food laws relating to milk products in India. Subjects discussed included in his study were milk standards, standards for milk products, tailor-made products, additives, sampling, publicity, quality certificates and licensing.

Vyas (1997) listed the documents on dairy policies and summary of the world dairy scenario in an overview for the Indian dairy industry. The list includes demographic, socio-economic, technological and legal aspect, measures to be taken to enhance production and quality of milk were discussed and an agenda for achieving improvements were presented.

Bhasin (1998) identified the Trade Related Intellectual Property Rights (TRlPs) Agreement, set out in the text of the Uruguay Round of GATT and the policies adopted by the World Trade Organization. The study covered patents, copyrights, trademarks, industrial designs, layout designs of integrated circuits, undisclosed information and geographical indications. These aspects of the Agreement were discussed in relation to existing Indian legislation and their implications for the Indian dairy industry.

Singh and Singh (1998) studied India's experience with dairy development in the post-independence period and documented analysed and lessons were drawn which might be useful for India as well as other developing countries in improving the design and implementation of future dairy development projects. The rational of major policy measures that have been used since 1970 to promote dairy development were examined which includes cross breeding policy, modern technology (milk and cattle feed processing plants), marketing of liquid milk and milk products, producer and consumer prices and price policy, organizational and institutional policies, public investments, grants and subsidies, inter-state variations in dairy development, dairy science education, training and research. The effect of India's New Economic Policy announced in 1991 and the new world-trading regime were also discussed.

Vyas (1999) presented India's attitudes to the second round of WTO negotiations from the standpoint of an emerging dairy nation. The main issues that India wished to be raised in the negotiations were import duties, particularly in relation to dried milk and dried skim milk. Special Safeguards, export subsidies. Sanitary and Phyto Sanitary measures and the multi-functional role of dairying.

Bhalla (2001) discussed the challenges of the dairy industry in terms of quality which includes Quality Management Systems (QMS), Total Quality Management (TQM), lSO-9000 series, food safety standards. Environmental Management System (ISO: 14000), quality of raw milk, combating adulteration of milk and upgrading quality of testing and analytical laboratories.

Mechamache *et al*. (2001) Identified the dairy trade policy reforms with a general objective of increasing farm income in EU. The EU dairy policy was rather complex and involves use of many policy instruments. The document listed includes the price support programme (implemented through Government purchases) for butter and skimmed milk powder, import taxes and export subsidies that have been in place since the 1960s. It also includes production quota since 1984-85, as well as a lowering of trade barriers following the Uruguay Round trade negotiations in the 1990s.

Sareen (2001) described export certification procedures, particularly for dairy products in India. Issues concerned to exports as well as some activities of the Export Inspection Council to facilitate exports of food products were highlighted.

Chadha (2003) dealt with the existing regulations in quality assurance of milk and milk products. The following topics were covered in his article were: food laws and its implementation effects, proposed draft amendment to PEA Act drafted by the Ministry of Health, proposed changes by the industry (Integrated Food Laws), Hazard Analysis Critical Control Point (HACCP) and its importance in the international trade, and Codex Alimentarius Commission (CAC).

Chawla (2003) presented the policies needed in improving India's global daily position. The National Agriculture Policy including the technological, environmental, and economic sustainability; regulations for imports, and compulsory export inspection were discussed. Apart from this the following policy imperative for global positioning were also discussed: setting up of high-powered monitoring and steering task force, enactment of central prevention of infectious and contagious diseases in animals bill, mandatory HACCP for all export oriented dairy units, integrating and restructuring the enforcement machinery and making it accountable, incentive for clean milk production, subsidy for technological enhancement and diversification. Tit and Tat policy etc.

Choudhary (2003) gave a brief account of the present scenario of milk production in India and the policies that influence the milk producers in this country. The policies for importing and exporting milk and milk products as well as the taxation of these commodities were discussed in the study.

Sharma *et al*. (2003) studied the document of dairy trade policy reforms. In the early nineties, the Government of India introduced major trade policy reforms which favored dairy sector was no exception to this. The dairy industry was de-licensed in 1991 with a view to encourage private investment and flow capital and new technology in the sector. However, in 1992 the milk and milk products order (MMPO) were

promulgated under the essential commodities Act 1955 to regulate milk and milk products production and export import regulation in the country. India adopted import substitution policy, where protection to domestic dairy sector through imposing QRs and other non- tariff barriers such as canalizing of imports and exports of dairy products.

Katti (2005) studied the facilitating technology and infrastructure up gradation of all the sectors of the Indian economy. Especially through import of capital goods and equipment, thereby increasing value addition and productivity, while attaining internationally accepted standards of quality removal of exports cess on all agricultural and plantation commodities. Export of value added dairy and poultry products facilitated and measures to make EPCG Scheme more attractive to exports. Amendment policy has relaxed the export obligation norms under EPCG, for the farm sector, earlier proposal to allow duty free import of capital goods export units in Agri-Export Zone.

Chand (2005) studied the document of trade policy for 1992-1997. The main feature of the policy was that trade was free except for a small negative list of imports and exports. Imports of three items was banned, 80 items restricted and Eight items canalized. In the very first year of this policy a number of policy initiatives were Liberalized exchange rate management systems, Liberalization of import licensing, Export Promotion Capital Goods Scheme, Extension of Export Oriented Units and Export Processing Zone Schemes, Adequate export credit at low interest rate and measures to encourage foreign investments.

Deepa (2012) reported that the dairy industry is one of the largest industries in India. Although India is the largest producer of milk in the world, it is a very minor player in the world dairy market, accounting for a miniscule 0.08% of the world dairy exports. The Asian countries are the major destination of our exports. The demand for dairy products is expected to increase at a rapid rate in the Asian countries. The exports were made to 105 countries in the world. Among these 40 are Asian countries. Although the number of non-Asian countries is comparatively more than the Asian destinations, yet the percentage share of all Asian countries together is much more than the rest of the world export partners. Skim Milk Powder, Whole Milk Powder, Milk food for babies, Butter & ghee are the main products of Indian basket of dairy exports. The present paper focuses on export trend & export potential of India for dairy products.

2.2 TRENDS IN EXPORTS AND IMPORTS OF SELECTED DAIRY PRODUCTS IN INDIA

Bandopadyaya (1982) analyzed the trend of India's share in world tea exports using simple linear trend equation the results revealed that India's share in total world exports of tea had been constantly declining during the study period 1964-65 to 1978-79. One of the causes that contributed to this trend was strut in demand for tea in domestic market due to population boom. Other associated problems were low productivity, high-cost production and scarcity of suitable land and capital.

Dass *et al*. (1985) reported the trend in coffee export in relation to general exports from India for the period 1956-57 to 1982-83. The annual trend of export in general had fallen during the period 1972-73 to 1982-83 in spite of buoyant world demand and high domestic production. The share of coffee export in total exports in value terms, had increased in the period 1956-57 to 1971-72 and 1972-73 to 1982-83. However, unit values, quantity and export value recorded chronic instability during the same period.

Jalajakshi (1994) analyzed the trend of shrimps from India for the period 1966 to 1991. Exponential model of the type $Y=ab^t$ was used to workout the trend. Shrimps export recorded a positive trend due to high demand in the importing countries. The negative trend observed for dried and canned Shrimps were attributed to declining demand in the importing countries and increased cost of production in India

Mamatha (1995) estimated the trends of production and export of selected spices for the period from 1970-71 to 1991-92. The spices considered were pepper, chilies, turmeric and ginger. She founded that positive trends in respect to production and export of the selected spices were due to increase in domestic production and demand for these spices in the international market. The increased domestic production and export were attributed to several measures taken by the Spice Board such as improved methods of production, assistance for the export of spices by setting up of facilities for upgrading quality and technical advice on scientific post-harvest operation and processing.

Singh (1995) studied the trends in export of dairy products from India during 1990-91 the country exported the dairy products worth of Rs. 2.40 crores and Rs. 13 crores in 1993-94, which shown the increasing trend in export. In the post-GATT era, WTO is going to create favourable export conditions and the dairy industry of the country has the opportunity to emerge as important player in international market.

Sah (1998) examined the import of dairy products such as butter, cheese, baby food, skim milk and whole milk powder. He concluded that decreasing trend of these products was due to under Operation Flood phase-I, II and III. The creation of large co-operative milk production and marketing systems will greatly enhance infra- structure for dairy development.

Kumar and Anjali (2001) studied the trends in the trade of livestock products in 1974-75 to 1998-99 their agricultural products growth trend was less than 5 percent, while livestock was 11 per cent, export of egg registered the highest annual growth rate (26%) followed by the daily products (21%) and meat and meat preparations (12%). Remaining products did not witness significant growth of exports of livestock products has accentuated in the nineties after trade reforms. The total imports of livestock products registered a negative growth rate. Among various items of imports, hides and skin presented most striking growth; their imports showed an annual growth of 25 per cent, it followed by imports of live animals (10%) during the period of 1974-98. Imports of dairy products and animal fats showed a negative rate of growth. Imports of hides and skin slowed in the nineties (12%) as compared to the earlier period (24%). This may be attributed to the various measures taken to enhance the domestic available of raw hides and skins.

Guledgudda *et al*. (2002) studied the trend in world tea production and export. India's share in the world tea production has slipped gradually from 38.12 per cent in 1961 to 28.83 per cent in 1990-91 and further marginally come down to 27.45 per cent in 1999-2000. Whereas, its share in world tea export has been similarly decreased gradually from 36.41 per cent in 1960-61 to 18.83 per cent in 1990-91 and further decreased to 17.86 per cent in 1998-99.

Sujata and Vasudev (2003) in their study focused on present status of export. The total period was divided into two parts *i.e.*, 1989-90 to 1994-95 (pre-WTO) and 1995 to 2001-02 (post WTO) to know the effect of WTO on export of mangoes. Analysis of trend was estimated by compound growth rates. The method of index was used for pre- and post-WTO periods. They concluded that during the pre- and post-WTO periods, the export value index increased from 93.73 and 92.23 to 187.14 and 193.89, respectively.

Kumar (2004) attributed the trends of exports growth of meat and poultry products. India was net exporter of meat products and its share in meat export was gradually increasing especially after the liberalization process started in 1991. India's

exports of animal products grew with 12 per cent growth rate during the 1990s. Among the exports of animal products, buffalo meat contributed the biggest share followed by dairy and poultry products. Poultry products observed the highest growth of 23 per cent. Dairy products were next with a trend growth of 19 per cent followed by buffalo meat with a growth rate of 13 per cent during 1990-91 to 2002-03. Growth rate of other products like insignificant while sheep and goat meat observed 5 per cent negative growth rate.

Namasivayam and Paul (2004) estimated the trend in area, production and productivity of coconut in India. The entire analysis was done separately in three phases for the overall study period 1977-78 to 1986-87 was 1 phase, 1987-88 to 1996-97 was 11 phases, 1997-98 to 2001- 2002 was 11 phases. The trend in growth rate analysis revealed that the growth in area, production and productivity over the years were positive in the first two periods while in the third period productivity was negative.

Shibu *et al*. (2004) studied the trend analysis of cashew nuts in Kerala, using trend analysis based on index number and growth rates, which gave comparable results. A result revealed that growth rate in area was positive for entire period with stagnant production and declining productivity.

Singh (2004) studied the trend of import of total milk (condense +dry + fresh) reduced by 18.3 per cent per year during 1981-01 the reduction was more pronounced during 1981-91. Butter also achieved negative growth in its import value in which import decelerated from US$ 79841 thousands in 1981 to US$ 4071 thousands in 2001. Between 1981 and 1991, the import value of butter reduced by 39 per cent/year. However, between 1992 and 2001 the import of butter increased by 28 per cent per year. It was mainly due to deceleration in international prices of butter during that period and lifting of quantity restrictions on its import.

Palanisingh et. al (2017) studied that a, the dairy sector plays vital role in the development of socio-economic, and it constitutes an important segment of the rural economy. Dairy industry provides livelihood to millions of homes in villages, ensuring supply of quality milk and milk products to people in both urban and rural areas. In this paper, a modest attempt has been made to study the growth of production, per capita availability of milk, and Country wise and product destination of Indian Dairy products. Milk production is registered a CAGR of 3.99 percent and per capita availability of milk is registered a CAGR of 3.05 per cent during the period of 2011-12 to 2015-16.

Punjab is the highest per capita availability of milk and it is registered a CAGR of 1.78 per cent.

2.3 IMPACT OF CHANGES IN GOVERNMENT POLICIES ON EXPORTS AND IMPORTS OF SELECTED DAIRY PRODUCTS IN INDIA

Kathuria (1996) studied the India's import substituting industrialization strategy which was accompanied by a heaver dose of export pessimism, which was reinforced by the poor export performance in the early years of planned development. Effective protection rates for domestic production were much higher for export. Domestic protection was also protected by severe QRs on import. Export promotion policies took on export growth rate in the new Uruguay Round, especially in 1980s, and were rewarded by significant increase in the export growth rate in the second half of the decade. Policies were such that export incentives relied primarily on product-specific rebates and imports entitlement licenses, which were marketable at a premium.

Phillips (1997) studied the recent trends in the Asian dairy markets, which included the effects of trade policy, population and income on the demand for milk products and factors that are likely to put constraints on market growth. The prospects for market development in Japan, Taiwan, Republic of Korea, Hong Kong, China, Vietnam, Thailand, Malaysia, Philippines, Singapore, Indonesia and India were briefly reviewed.

Vyasulu (1997) justified a discussion of agricultural developments in Indian states only from the start of the New Economic Policy (NEP), launched in July 1991. The focus was on external trade, if the Government encourages the export of agro Industrial products rather than agricultural exports total quantity, then several constraints might arise such as lack of expertise in processing, entry for the multinationals, lack of existing links between agriculture and food processing. Dairy industries nationwide and sugar Cooperatives in Maharashtra state were cited, however as optimistic pictures. The paper finished by dealing with three questions such as what is globalization, how is globalization different from foreign trade and why do globalization and GATT go together. It argued that GATT, leading to food dependence on foreign powers, may not be in India's interests, but states that the outcomes of globalization were not inevitable.

Munjial (1998) predicted that the removal of the nontariff trade barriers from the global dairy trade, taking effect by the year 2000 would result in an increase in the export of Indian dairy products. In order to the Indian dairy industry must confirm to

internationally recognized quality standards. The implications of ISO 9000, the HACCP system and two European Union Directives, EC 92/46 (regulating the production and marketing of milk products) and EC 93/43 (governing the hygiene of foods) for the Indian dairy industry were discussed.

Sharma and Datta (1999) studied the impact of a reduction in domestic support; improvement in market access and reductions in export subsidies. The major trends in global production, trade and prices of milk products were reviewed and the competitiveness of the Indian dairy industry was highlighted.

Singh (1999) studied the impact of WTO trade agreements on India's dairy industry. The study was discussed in terms of production, terms of trade, quality standards, product mix, prices and investment. It was argued that India would benefit from trade liberalization as it does not subsidize the export of its milk and milk products and should therefore benefit from increased access to world markets However, technical developments in the industry must continue if global competition was not to wipe out these gains.

Kumar (2000) studied the trade policy reforms, which had been affected since 1991. The results of the study reviewed that the import licensing systems has been dismantled, all non-tariff barriers (NTBs) had been phased out from all treadles except consumer goods, the pick tariff rate has been brought down to maximum 50 per cent from up to 335 per cent. It also shows the progressive declining in average tariff rates applicable to imports conforming major reforms. The trade with south Asia
on faster track than all trade India had unilaterally removed all quantitative restrictions on imports on around 2300 items from SAARC countries in 1998.

Kurien (2000) examined the impact of globalization on agriculture in poorer countries with particular reference to the WTO, the convention on biodiversity, and trade liberalization, which must focus on current technoeconomic conditions of the dairy industry. The study examined the growth in milk production in India since 1971, the role of research and development in this and possible future directions of research to ensure increased productivity of Indian dairy livestock.

Sharma (2001) studied the effect of Exim policy on dairy sector like after the removal Quantitative Restrictions (QRs), tariff rates was the only instrument for India's trade policy. The significant number of items which QRs had been dismantled in the new Exim policy. It was belonging to the agricultural sector and small-scale industries, which constitute very big section of the Indian economy. Given their small size, they

need more time and support to equip themselves in order to face the challenges of a QRs-free regime. Secondly, the developed countries, like USA and EU, were working on the principle that all barriers to their exports had to go. However, these countries were creating many non-tariff barriers for developing countries. If the USA and EU continue the subsidy for dairy sector at the present levels, then the Indian dairy farmers and processing industry would face a serious threat. Moreover, Indian tariff commitments for most of the dairy products in the Uruguay Round are very low. The government should identify the sensitive products and estimate the appropriate level of tariff rate and also use other non-tariff barriers like anti-dumping duties in accordance with the WTO provisions. The industry must have a close liaison with the standing group constituted by the government of India and give its feedback so that the government could take necessary actions.

Sirohi *et al*. (2001) looked into the structure and level of market access, domestic support, and export subsidies for dairy products and examine the implementation problems of those World Trade Organization provisions, which seek to reduce trade distortions in world dairy markets. The paper outlines emerging issues, which should be discussed in the future round of negotiations in the interest of the Indian dairy industry.

Suresha *et al*. (2001) studied the last three decades which showed that the Indian dairy sector has recorded a spectacular growth of more than 5 per cent per annum. By entering into a WTO agreement, which includes Technical Barriers to Trade (TBT), Sanitary and Phyto Sanitary (SPS) measures, and Codex Standards, it is almost imperative that India should produce products of international standards at internationally competitive prices to yield profit and to meet the growing competition as a result of globalization.

Sharma and Sharma (2002) studied the issues of efficiency and global competitiveness of the Indian dairy sector in an open economy environment. The findings of the study indicated that the Indian dairy industry (both production and processing sector) was technically highly efficient and the Indian dairy industry had achieved remarkable progress during the last three decades despite the restrictions on the imports and exports of dairy products. The major policy implication of the study was that the Indian dairy industry was globally competitive but must be protected from distorted and unfair trade competition from developed countries in a liberalized environment. The study also showed that the effects of commitments by developed

countries to reduce tariffs, domestic support and export subsidies had been minimal and unless these countries significantly reduce the trade distorting supports to their dairy sector it would be difficult for India to compete in the world market.

Mishra *et al*. (2003) studied the increase in agricultural export after economic reforms were initiated. Aggregate agricultural export increased from US$ 3.2 billion in 1992-93 to US$ 6.86 in 1996-97, but declined to US$ 5.5 billion in 1999-2000. Thus, during the nineties agricultural exports increased at 8.96 per cent per annum as compared to only 2.43 per cent during the eighties. Appreciable increase in exports has come about mainly because of devaluation of the economy due to significant reduction in import duties.

Patel (2004) analyzed the impact of specific measure, on exports of daily products which made were distortions in international trade. It was mainly due to the high levels of subsidies and tariffs apart from other import protection measures. The producer support estimate for milk in OECD countries was estimated to be US$ 41 billion in 2002-03 as compared to US$ 48 billion in 1986-88. It indicated only marginal downsizing. Export subsidies continue to be significant factor in world dairy trade with the eligible quantities close to 59 per cent of estimated world trade.

Chand (2005) studied the impact of trade policy on import and export of agricultural products. India initiated liberalization of its economy and trade with economic reforms in June 1991 as a part of these reforms India adjusted its exchange rate to market rate and relaxed restriction on agricultural exports. This created a favourable environment for agricultural exports. Since 1993-94, agricultural exports started increasing in leaps and bounds. Exports earning doubled in three ears between 1992-93 and 1995-96. Imports also increased from US$ 2 billion during 1992-93 to US$4.33 billion during 1995-96. Provisional figure for the year 2003-04 shows that agricultural export reached US$ 8 billion, which was about 30 percent higher than 2000-01.

Ohlan (2016) studied that India remains the world's largest producer and consumer of milk. The present study empirically evaluates the transformations in demand and supply of dairy products in India, identifying that the share of dairy products in the food basket has significantly increased among both rural and urban consumers. While demand for dairy products is highly elastic and related to income, the analysis also shows large regional disparities in production and per capita availability of milk in India. After examining various aspects of dairy consumption and

production patterns in India, the article also includes policy considerations to improve dairy production. It suggests that to stimulate dairy sector development and reduce inequality in dairy products consumption in India, milk and milk products should be included in the diet provided through the Midday Meal Schemes for primary education children. Overall, to meet the growing demand for dairy products, given their role in food security, the Government of India should continue to aim for sustained growth.

2.4 EXISTING STIPULATIONS IN SELECTED IMPORTING COUNTRIES ON SELECTED DAIRY PRODUCTS

Chawla (1998) studied the third session of the Codex Committee on milk and milk products held in Uruguay in May 1998. In the study he discussed about the amendments to the code of principle concerning milk and milk products; standardization of milk fat or milk protein in the draft general standard for use of dairy terms in labelling, restriction on the use of annatto, commonly used in Indian butter, maximum permissible lead levels in butter, use of anti-oxidants in fat-based products, use of bleaching agents and decolourants in cheeses, use of hydrogen peroxide for the preservation of milk; discrimination against use of buffalo milk in Codex Standards for cheeses; and use of nisin as a preservative in ripened cheeses. Responses of the Codex Committee were outlined.

Chawla (1999) viewed the stipulations of the agreement on application of Sanitary and Phyto Sanitary measures and the Agreement on Technical Barriers to Trade, both of which were drawn up under the auspices of the WTO. The constraints of these agreements were discussed with particular reference to their impact on the dairy industry in India.

Hatem *et al.* (2002) studied the stipulation on Egyptian law of safeguard measures under Egyptian Trade Legislation (Article 79 of law 161/1998), the Government can impose temporary import restrictions. When a significant increase of milk powder on imports threatens to created serious injury to domestic producers. Article 81 requires a causal link between the increased imports and serious injury. In article 83 provides that the provisional safeguards measures should take the form of tariff for a duration not to exceed 200 days which has to be refunded.

Singhal (2003) observed the stipulations on dairy products in USA. The bill called 'Farm Security and Rural Investment Act 2002' provides the continuation of the existing Milk Price Capital Support Programme (MPSP) under this act. The Commodities Credit Corporation of US Department of Agriculture was committed to

buy unlimited quantities of butter, cheese and skimmed milk powder from dairy plants at prices that enable them to pay a minimum support price for the milk supplied by the farmers. Earlier under the provisions of the Federal Farm Act of 1996 passed by the Clinton administration it was proposed to discontinue the MPSP with effect from Jan. 1, 2002 after reducing the support price from US$ 10.35 in 1996 to US$ 9.90 per 100 lb in 1999.

Kumar and Ansari (2016) studied that the rise of factory farming, milk is now almost an unnatural operation. The modern dairy farm can have hundreds, even thousands of cows. Today's average dairy cow produces six to seven times as much milk as she did a century ago. Currently, the United States is the largest producer of milk in the world, followed by India and China. India being one of the largest milk producers around the world, has to import a part of Milk products and its exports are negligible in the World Export Share. This paper tries to examine the issues regarding 'Export Performance of Dairy Industry of India': Trends, Challenges and suggestions for improving the trade situation. The existing Literature has been reviewed accordingly comprising Trade Exports, Imports and the factors which are affecting the Milk Production in country.

2.5 INDIA'S EXPORT POTENTIAL - DAIRY PRODUCTS AND MARKET IDENTIFICATION

Sareen (2004) studied the stipulations on dairy products in USA by US Food and Drug Administration regulation and production of grade. The milk safety branch of the FDA regulates dairy products. It covers product safety, labelling, packaging and other relevant issues. The FDA department are involved in products standards, labelling under the Fair Packaging and Labelling Act, and matters related to overall compliance. The Pasteurized Milk Ordinance (PMO) requirements for product and package includes the product must contain the word grade A, must contain the identity of the plant, product standards of identity must be met, temperature cooled to 45ºF or less and maintained the bacterial limits specified in the PMO etc.

Anjani *et al. (*2005) studied that the economic policy reforms triggered in India in 1991 were oriented towards liberalization and integration with the world economy. These policy initiatives of reforms and economic liberalization widened the market opportunities for international trade including the dairy products. In this context, this paper examined the issues of trade possibilities for India, in view of growing domestic consumption, augmented supply and growing international market for dairy products.

The study revealed that growth in Indian dairy sector has been impressive and if the existing growth rate can be sustained, India can pursue export of dairy products more vigorously. The projected demand scenarios for domestic requirement of dairy products lend credence to this optimism. It has been clearly brought out that the dairy production is competitive in comparison with other countries. India further has a geographical advantage to serve milk deficit areas in neighbouring countries. The demand for milk products in these deficit countries was expected to be growing. India would need to capitalize on these advantages by improving quality and hygiene standards of the dairy products and bringing more efficiency in milk production and processing. India would need to develop more competitiveness in products which are being imported in countries like Sri Lanka, Bangladesh and Nepal from other developed countries. For export to SAARC countries even some more liberal export policies may be explored.

Mondal (2005) studied the specification and requirement in case of for milk and milk products for export as per the notification shall be national standards for Codex Alimentarius Commissions or contractual specification agreed between the foreign buyer and exporter provided the same was not below the national standards of the importing countries. In the absence of either of the above two, the national standards specification as notified shall apply. Some important requirement for dairy products was microbiological criteria for milk products. Pathogenic microorganism should be about organisms indicating poor hygiene within prescribed limits, indicator organisms - within prescribed limits. EIC certification had been recognized by several of India's trading partners. While with others dialogue for seeking reorganization was presently in process.

Varshney (2005) studied the stipulation on tariff harriers maintained in the dairy sector by several developed economies which include: advolerum duties that often exceed 100 per cent specific duties that afford a higher level of protection as compared to advolerum duties. Special agricultural safeguards provision was used as additional protection in spite of some countries having high bound duties often measure the extent of market access e.g.-200 per cent bound duties on SMP, WMP, butter and butter oil in Bangladesh, but in USA 39 per cent for SMP, 81 per cent for butter and butter oil it was 90 per cent.

Ohlan (2014) investigated the pattern, trends, competitiveness, and determinants of the export of dairy products from India. Data show that exports of dairy

products from India have witnessed a remarkable growth in recent years. The estimates also established that India has price competitiveness and comparative advantage in the production of milk. Some instability was observed in the export markets of Indian dairy products, as notably shown by the high probabilities of Bangladesh and the UAE to gain market shares from the other importers of Indian dairy products. Furthermore, the results indicated that dairy export from India was elastic to the world market size, price divergence, exchange rate, and trade policy. Based on the findings, it was recommended that India should focus on improving the quality of its dairy products to get a premium price in the world market.

Sharma and Burark (2017) studied to measure the degree of diversification based on the shares of various importing countries in India's total dairy products export. India achieved an annual output of 146.3 million tones in milk production during 2014-15. The per capita availability of milk in India had increased from 176 grams per day in 1990-91 to 322 grams per day by 2014-15. It was more than the world average of 294 grams per day during 2013.

METHODOLOGY

CHAPTER – III

METHODOLOGY

It is understood that methodology is the strong foundation for systematic and scientific investigation. It is important to give the details of investigation and methods adopted by the investigator in finding out the problems. This chapter outlines briefly the nature and sources of data, the tools and techniques adopted in the analysis of data to get meaningful conclusions.

The detailed methodologies adopted are presented under following headings.

- Selection of the study area
- Description of the study area
- Nature and sources of data
- Collections of data
- Analytical techniques

3.1 Selection of the study area

The study was confined to India in Asian continent. India has vast livestock resources (57 per cent of the world buffalo population and 16 percent of the cattle population) and the dairy sector contributes a major share to the agriculture GDP. Over the years the sector has played a major role in the socio-economic development of millions of rural households, and in the national economy.

India is the leading producer of milk country in world with a production of 187.7 million tonnes (2018-19) and a share of 22 per cent in the world. The per capita availability in the country was 394 gms per day.

3.2 Description of the study area

India is situated between 20.5937° N and 78.9629° E. It is situated in both the eastern and northern hemispheres position in the Indian subcontinent in south- central Asia. India is a subcontinent, the largest democratic country in the world, a country so vast, spread over a landmass of 324 million sq. kms including 7000 km coastline with a population of 135 million, 22 major and 1600 minor languages. The land divided into 28 States and 8 Union Territories. In India, every state has its own cultural heritage reflected in their diversified dressing pattern, food habits, religious practices, customs, traditions and festivals. The Himalayas form the highest mountain range in the world,

and southern slope of India is much of fertile land. The highest point is Kanchenjunga 28,208 feet (8,598 m) and lowest point Indian Ocean of 00m.

3.3 Nature and sources of data

The research was based on secondary data which are mainly collected from NDDB Anand, GCMMF Anand, DGCIS Kolkata, Indian Dairy Year Book, Indian Dairy Man, Indian Journal of Dairy, FAQ Year Book, FAQ Library USA, NDDB Bimonthly News Letter, DGFT New Delhi, APEDA Bangalore, Dairy India 1997, Ministry of Agriculture and Ministry of Commerce, New Delhi, Others Agricultural and allied Journals.

3.4 Collection of data

3.4.1 Study period

Study period was divided into three sub periods because for trend analysis the data is fluctuating very high in specific year because of that for getting easy and convenient analysis we have divide it in periods by using 2000-01 to 2019-20 secondary data namely,

- Period I: 2000-01 to 2009-10
- Period II: 2010-11 to 2019-20
- Overall period: 2000-01 to 2019-20

3.4.2 Selection of dairy products

For export and import, the products selected are skimmed milk powder, whole milk powder, butter oil - ghee, milk food for babies and butter. For studying existing stipulations in importing countries, following countries were selected for different products for their higher import as compared to other. For skimmed milk powder, Bangladesh, UAE and Egypt and for butter oil + ghee, UAE, Kuwait and USA were selected.

3.5 Analysis of data

For analysing existing government policies on import and export of selected dairy products in India, the data collected from different sources were presented in tabular form. These Include imports and exports of dairy products regulations act, notification rules, amendments and requirements. For analysing existing stipulations In importing countries for selected dairy products, the countries such as Bangladesh, UAE and Egypt were selected. For products like skimmed milk powder and for butter oil + ghee, UAE,

Kuwait and USA were selected. It Includes imports requirements time to time like technical barriers to trade, sanitary and phyto sanitary measures, bound rate and tariff rate. Import license, documents and special requirements etc. which are divided into two period I and period II. For the study of impact of Government policies on import and export of dairy products such as import duty (bound rate, 2001 to 2010 and tariff rate from 2010-11 to 2019-20), sanitary and phyto sanitary measures (For low - 0, Medium-1 and High-2), quantitative restrictions (QRs) export/import license (For canalized and restricted quantity-1, open general license and restricted quantity-2. Open general license, without restricted quantity-3), domestic support given to dairy industry, dummy variable (For period I -0 and period II -1) using for the impact, data taken from 2000 to 2020 were used. The impact of these variables on imports and exports of selected dairy products analyzed by applied multiple linear regressions. For the study of trends of imports and exports of dairy products, data taken from Period I (2000-01 to 2009-10), Period II (2010-11 to 2019-20) and Overall period (2000-01 to 2019-20) were used.

3.5.1 Tabular analysis

The secondary data collected were presented in tabular form to facilitate easy comparison and understanding. The documents of existing Government policies and existing stipulations in selected importing countries of selected dairy products are presented in the form of a table. It was summarized with the help of compilation of data and documents with respect to period I and period II.

3.5.2 Trend analysis

For trends of imports and exports of dairy products Period I (2000-01 to 2009-10), Period II (2010-11 to 2019-20) and Overall period (2000-01 to 2019-20). (Sharma, 2018)

$$Y_t = a + bT + cT^2 + dT^3 + e_t$$

Where,

Y_t = Export/ import in time period t

a = Intercept

T = Time period

b, c and d = Regression coefficient to be estimated

e_t = Error term.

For testing of significant of the regression coefficient the student t test was used.

3.5.3 Multiple linear regression analysis

Multiple linear regression functions were run separately for selected daily products. In this model the combined effect of Government policies and WTO on export and import value was studied. Here some important independent / explanatory variables were selected viz. Sanitary and Phyto Sanitary measures (SFS), Quantitative Restrictions (QRs), import/export license, domestic support to dairy industry, import duty and WTO dummy variable. On the other hand, export/import value was selected as dependent variable to study the factors, which are mainly affecting the export/import value of selected dairy products. (Choudhary *et al.*, 2017)

The model fitted is of following type -

$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$

Where,

Y = Export/ import (Rs. Lakh)

X_1 = SPS (Sanitary and Phyto Sanitary measures)

X_2 = QRs (Quantitative Restrictions) (Metric tonnes)

X_3 = Export/Import License

X_4 = Domestic support given to dairy industry (Rs. Lakh)

X_5 = Import duty (bound rate and tariff rate), only for impact on imports (Rs. /q)

X_6 = Dummy Variable

b_0 = Intercept

b_1 to b_6 = Regression coefficients

3.5.4 INDIA'S DAIRY PRODUCT AND MARKET IDENTIFICATION

3.5.4.1 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. (Madhavan *et al.*, 2020)

Revealed Comparative Advantage (RCA) proposed for measuring the degree of trade specialisation of a particular commodity. In the event of the RCA's being more significant than unity for a country, then that country has a comparative advantage in terms of exporting certain products. In other words, there is a scope of trade with the rest of the world in a particular commodity. RCA measure is as follows:

$$RCA_{ik} = \frac{X_{ik}}{X_{it}} / \frac{X_{wk}}{X_{wt}}$$

Where,

$\frac{x_{ik}}{x_{it}}$=India's export share of product *k* over India's total export in value term,

$\frac{x_{wk}}{xwt}$= world's export share of product *k* over the world's total export in the value term.

Where RCA_{ik} is the revealed comparative advantage index for India. '*i*' exporting product '*k*', *i*k is the value of India's export of products *k*. $X\ it$ is the value of India's total export, Xwk is the value of the world's export of products *k* and Xwt is the value of the world's total export. The importance of the RCA's being more significant than unity confirms that India has a comparative advantage regarding exporting commodity (*k*). In other words, India's export share of product *k* exceeds. the world's export share of product *k.*

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.

RESULTS AND DISCUSSION

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CERTIFICATE-II

Date: / /2021

This is to certify that the project work report entitled **"INDIAN DAIRY BUSINESS: A POLICY ANALYSIS"** submitted by **Mr. RAVI MADARIYA** to Junagadh Agricultural University, Junagadh in partial fulfillment of the requirements for award of the degree of **MASTER OF BUSINESS ADMINISTRATION IN AGRI-BUSINESS** after recommendation by the project evaluation committee were defended by the candidate in the oral examination was satisfactory. We, therefore, forward with recommendation.

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CHAPTER – IV

RESULTS AND DISCUSSION

The results are presented under the following headings.

4.1 Documentation of the existing government policies on imports and exports of dairy products in India

4.2 Trends in exports and imports of selected dairy products in India

4.3 Impact of changes in Government policies on exports and imports of selected dairy products in India

4.4 Existing stipulations in selected importing countries on selected

4.5 dairy products

4.5 India’s export potential - Dairy products and market identification

4.1 DOCUMENTATION OF EXISTING GOVERNMENT POLICIES ON IMPORTS AND EXPORTS OF DAIRY PRODUCTS IN INDIA.

An attempt was made to know about the Government of India's various policies, laws, regulations and time-to-time notifications that govern the dairy industries, traders and consumers. The reason behind it was that the Indian dairy industry and export potential has grown and diversified enormously in the last few years. In view of the extensive potentiality, the industry needs appropriate production, marketing and trade policy periodically.

The Table 4.1 presents a summary of various existing Government policies on exports and imports of dairy products. It was found that the policies made as early as 1898 on Livestock Importation Act, which regulates import of dairy products as noteworthy to this effect. In the period I (2000 to 2010) the documents of policies were mainly concerned on domestic market and import regulation, as well as import substitutions during import liberalizations (1991-92). Later some concerns raised about export quality and import of dairy products were considered from the viewpoint of interest of domestic industries. On the other hand, during period II Government liberalized export and import policies by reducing tariff rate, removing the Quantitative Restrictions (QRs) and watching the international trade by maintaining quality standards of domestic products by various Rules, Act, Notifications and introducing new policies along with maintaining Importation Act amendments in the interest of domestic industries and country's concerns for the foreign currency.

Table 4.1 Documentation of the existing government policies on import and export of dairy products in India

Sr.No.	Name of Policy	Effective Year	Features
1	Livestock Importation Act	1898	The act makes it mandatory for importer of dairy products to get license for importing. It regulates import of dairy products and specifies appropriate procedures for importation of dairy products to India.
2	Agricultural Produce and Marking Act (AGMARK)	1937	It provides quality standards for grading, packing and marking. Three dairy products, viz; ghee, butter and fat spread are graded as per provision of the PFA Rules. Ghee in certain cases cannot be stored/sold without AGMARK certification.
3	Prevention of Food Adulteration Act and Prevention Food Adulteration Rules (PFA)	1954 and 1955	It protects the customer against impure, unsafe and fraudulently labelled domestic as well as imported dairy products. It is mandatory to prescribe minimum compositional standards and various other provision on usage of food additives, limits of some chemical contaminants like pesticides residues, heavy metals and aflatoxin in foods.
4	Export (Quality Control and Inspection) Act	1963	It promotes and regulates the commodity export system. Registration of dairy processing unit with the EICI has been made mandatory for undertaking exports of milk products.

5	Standards of Weights and Measures Act and Standards of Weights and Measures (Packaged Commodities) Rules	1976 and 1977	It ensures that the basic rights of consumers regarding vital information about nature of commodity, the name and address of the manufacture, the net quantity, date of manufacture and maximum sale price are provided on the label of products.
6	Exim policy (1985 to 1988)	1985	The import export passbook scheme was introduced with effect from October 3, 1985. It aims to streamline the import procedures for exporter by providing duty free access to imported inputs for exporters/manufacturers.
7	Bureau Indian Standards (BIS) Act	1986	It formulated standards and guidelines for various dairy products and process. It is voluntary standards. However, as per certain provision of the PFA Rules, several milk products (WMP, SMP, milk food for babies etc.) can be manufactured/stored/sold only under BIS certification.
8	67(RE-2008)/2004-2009	01.12.2008	Extension of the validity of prohibition on import of milk and milk products under Chapter 4 of ITC(HS) from China vide Notification No 46/(RE 2008)/2004-2009 dated 24.09.2008 by another six months from 24.12.2008 to 23.06.2009
9	22/2009-2014	23.12.2009	Prohibition on import of milk and milk products from China.
10	49/2009-2014	24.06.2010	Prohibition on import of milk and milk products from China

11	16(RE-2010)/2009-14	03.01.2011	Prohibition on import of milk and milk products from China.
12	23(RE-2010)/2009-14	18.02.2011	Prohibition on export of milk powders (including skimmed milk powder, whole milk powder, dairy whitener and infant milk foods), Casein and Casein products.
13	31(RE-2012)/ 2009-2014	04.02.2013	Exemption to processed and/or value-added agricultural products from the application of export restrictions/bans.
14	79 (RE-2013) / 2009-2014	30.04.2014	Export to Iran under Para 2.35(b) of Foreign Trade Policy, 2009-14
15	61/2015-2020	23.02.2016	Standard Input Output Norms (SION) in Food Product Group.
16	12/2015-2020	20.06.2018	Supply of essential commodities to the Republic of Maldives during 2018-19.
17	1/2015-2020	23.04.2019	Prohibition on import of milk and milk products from China.

The policies revealed that like exim policy for three years. Import export passbook scheme was introduced with effect from third October 1985. Its aim was to streamline import procedures for exporter providing with duty free access to Imported Inputs for exporters and manufacturers. The Bureau of Indian Standards (BIS) Act 1986 formulated standards and guidelines for various dairy products and process. Milk and Milk Products Order (MMPO) included rules for production, supply and distribution of milk and milk products with hygienic condition, packaging, labelling, marketing, penalty *etc*. The Infant Milk Substitutes Feeding Bottles Act, and Infant Foods (Regulatory of production, supply and distribution) Rules 1992 and 1993 provide for regulation of production, supplies and distribution of domestic as well as Imported Infant milk substitutes or Infant foods. The existing policies main concern was to the domestic market and Import regulation as well as Import substitutions after Import liberalizations 1991. Later concern was on export quality, which led to evolution of Export (Quality Control and Inspection) Act 1963 (Amendment in 1992), which promotes and regulates the commodities export system. Registration of dairy processing establishments with the EIC l had been made mandatory for undertaking exports of milk products and import of dairy products in the interest of domestic industries. It was due to the better capacity utilization of fixed resources. These results were similar to that of results obtained by the Chand (2005).

Looking into the great potential of export of dairy products, GOI moved to the export-based policies, which were taken to improve infrastructure facilities. Special incentives have been extended for the setting up and functioning of private bonded warehouses for both imports and exports. The Government would assist the industry in research and development, market research specific, market and product studies, and retail marketing, registration under export (Quality Control and Inspections) Act amendment in 2000. In overall when all the policies were analysed, it was noticed that, no incentives were provided to the producers as well as exporter for enhancing the growth in export (except in 2004 as a transport incentives) similar to other perishable products.

4.2 TRENDS IN EXPORTS AND IMPORTS OF SELECTED DAIRY PRODUCTS IN INDIA

Different trend equations are fitted depending upon their goodness of fit and their suitability to assess the trend in exports and imports in value tonnes of selected dairy products for all the selected products in the study. The data over the period 2000 to 2020 were considered. This was divided into three phases i.e., 2000-2010 (Period I) and 2011 to 2020 (Period II) and Overall Period 2000 to 2020. The cubic function was fitted for all the selected products due to its superiority over other functions in terms of coefficient of multiple determination (R^2).

Table 4.2 Trend in export quantity of dairy products

PERIOD	Estimated coefficient				R^2	F
	INTERCEPT	T	t^2	t^3		
Period I (2000-2010)	35260.05 (1.19)	-28293.77 (-1.27)	-8844.26 (1.93)	-598.24* (-2.18)	0.76	6.54
Period II (2011-2020)	-73604.09 (-1.02)	111377.31* (2.07)	-22147.52* (-1.99)	1222.29 (1.83)	0.48	1.65
Overall Period (2000-2020)	-499.37 (-0.014)	7967.14 (0.56)	21.09 (0.01)	-17.50 (-0.36)	0.28	2.16

Note: ***, ** and * indicate significance at 1, 5 and 10 per cent, respectively.
Figures are in parenthesis are 't' values

From the table 4.2 it observed that the export quantity of dairy product during the period I (2001-2010) in cubic function shown increasing trend R^2 value of 0.76 which was found statistically significant. From the table 4.2 it observed that the export quantity of dairy product during the period II (2011-2020) in cubic function shown decreasing trend R^2 value of 0.48 which was found statistically non-significant. From the table 4.2 it observed that the export quantity of dairy product during the overall period (2001-2020) in cubic function shown decreasing trend R^2 value of 0.28 which was found statistically non-significant.

Table 4.3 Trend in import quantity of dairy product

PERIOD	Estimated coefficient				R^2	F
	INTERCEPT	T	t^2	t^3		
Period I (2000-2010)	1946.04 (0.14	5659.09 (-0.55)	-881.76 (-0.42)	53.96 (0.42)	0.44	1.58
Period II (2011-2020)	101692.6 (3.37)	-41830.5* (-1.85)	6267.11* (1.34)	-293.71 (-1.05)	.63	3.50
Overall Period (2000-2020)	-1635.40 (-0.09)	5343.85 (0.76)	-267.32 (0.72)	1.64 (0.06)	.18	1.21

Note: * indicate significant at 10 per cent

Figures in parenthesis are 't' values

From the table 4.3 it observed that the export quantity of dairy product during the period I (2001-2010) in cubic function shown increasing trend R^2 value of 0.44 which was found statistically non-significant. From the table 4.3 it observed that the export quantity of dairy product during the period II (2011-2020) in cubic function shown decreasing trend R^2 value of 0.63 which was found statistically non-significant. From the table 4.3 it observed that the export quantity of dairy product during the overall period (2001-2020) in cubic function shown decreasing trend R^2 value of 0.18 which was found statistically non-significant.

4.3 IMPACT OF GOVERNMENT POLICIES ON EXPORTS AND IMPORTS OF SELECTED DAIRY PRODUCTS IN INDIA.

Multiple linear regression functions were run for selected dairy products to know the impact of Government policy on trade performance of dairy production. In this model the combined effect of Government policies and WTO on export and import value was studied. Independent/explanatory variables included in the analysis were Sanitary and Phyto Sanitary measures (SPS), Quantitative Restrictions (QRs), import/ export license, domestic support to dairy industry, import duty and dummy variable. On the other hand, export/ import value was selected as the dependent variable to study the factors affecting the export/import value of selected dairy products.

4.3.1 Impact of Government policies on exports of selected dairy products

From the table 4.4 it was observed that export value of whole milk powder the impact of independent variable contributed 55 per cent of total variation in export. The export value of skimmed milk powder the impact of independent variable contributed

54 per cent of total variation in export. The export value of Butter the impact of independent variable contributed 58 per cent of total variation in export. The export value of Butter + Ghee the impact of independent variable contributed 72 per cent of total variation in export. The export value of Milk food for babies the impact of independent variable contributed 92 per cent of total variation in export.

The policies were not much suitable for the export. The international price fluctuation due to the subsidies given by the developed countries to producer as well as exporters.

It could be concluded that the policy framework by government on export of selected dairy products shown bad negative and significant impact due to imposed policies on canalisation, restrictions and open general license with respect to the consumer and economy concern.

Table 4.4 Impact of Government policies on export selected dairy product

Name of Product	Intercept	SPS	QRs	Export license	Domestic support	Dummy variable	R^2	F
Whole Milk Powder	200.22*** (4.83)	6.16NS (0.306)	-0.001*** (-5.99)	-122.92*** (-5.99)	0.002* (1.66)	94.42*** (4.56)	0.55	2.66
Skimmed Milk Powder	4753.96*** (3.66)	-95.06NS (-0.15)	0.003*** (5.01)	-2416.53** (-3.726)	-0.003NS (-0.409)	2369.04*** (3.65)	0.54	2.59
Butter	72.76** (2.36)	6.422NS (0.428)	-2.53NS (1.60)	-37.19*** (-2.40)	0.004*** (3.69)	20.98NS (1.36)	0.58	3.08
Ghee + Butter oil	227.99 NS (1.75)	114.37* (1.81)	-0.001** (-2.10)	-130.69NS (0.625)	-0.001NS (0.23)	12.59NS (1.94)	0.72	5.69
Milk food For Babies	-249.28*** (-6.80)	293.53*** (16.52)	0.002NS (1.37)	11.07*** (6.06)	-0.002NS (1.09)	-308.45 (-1.70)	0.96	60.65

Note: ***, ** and * indicate significance at 1, 5 and 10 per cent, respectively.

Figures in parenthesis are 't' values

Table 4.5 Impact of Government policies on import of selected dairy products

Name of Product	Intercept	SPS	QRs	Export license	Domestic Support	Import Duty	Dummy variable	R^2	F
Whole Milk Powder	-253.56** (-3.00)	-18.27NS (-0.432)	7.16* (1.69)	25.84*** (6.10)	-5.54NS (-0.146)	0.037*** (4.26)	148.5*** (3.50)	0.75	5.39
Skimmed Milk Powder	648.01*** (5.88)	-9.768NS (-0.18)	-0.004*** (-8.40)	-436.53*** (-7.90)	8.679NS (0.01)	0.025*** (0.017)	475.50*** (8.62)	0.69	3.85
Butter	538.08*** (2.36)	-226.51* (-2.08)	-0.003*** (1.60)	-362.20*** (4.70)	0.009NS (1.38)	0.024NS (0.317)	766.59*** (9.95)	0.73	4.65
Ghee + Butter oil	1879.30*** (1.75)	157.98NS (.84)	-0.007** (-5.70)	-797.20*** (-6.00)	-0.002* (-1.85)	-0.167NS (-1.85)	251.41* (-1.25)	0.53	3.99
Milk food For Babies	7.75NS (1.17)	7.17** (2.20)	-6.49* (-1.96)	-2.52*** (-7.610)	-3.61 (-0.12)	4.21NS (0.009)	-7.08* (-2.13)	0.84	9.65

Note: ***, ** and * indicate significance at 1, 5 and 10 per cent, respectively.

Figures in parenthesis are 't' values

4.3.2 Impact of Government policies on Imports of selected dairy products

From Table 4.5, it was observed that import value of whole milk powder the impact of independent variable contributed 75 per cent of total variation in import. The import value of skimmed milk powder the impact of independent variable contributed 69 per cent of total variation in import. The import value of Butter the impact of independent variable contributed 73 per cent of total variation in import. The import value of butter oil + ghee the impact of independent variable contributed 53 per cent of total variation in import. The import value of Milk food for babies the impact of independent variable contributed 84 per cent of total variation in import.

It concluded that Domestic Support had negative and non-significant impact, since the support was not proper to help the production of product with quality and competitive price because his products was not given importance by the manufactures in the dairy industry and there were no product specific products given by GOI. Import duty had positive and non-significant impact, due to very less import duty and it's not dearer to imported products.

4.4 EXISTING STIPULATION IN SELECTED IMPORTED COUNTRIES ON SELECTED DAIRY PRODUCTS

An attempt was made to know the international requirement of selected major importing countries for major dairy products exported from India. For existence and competing in the global market. It is necessary to maintain standard of the products according to business partner requirement. For the present study, countries that were selected with respect to specific products like skimmed milk powder, the countries listed were Bangladesh, United Arab Emirate and Egypt and for Ghee + Butter oil the countries selected were United States of America (USA), United Arab Emirate (UAE) and Kuwait.

4.4.1 Existing stipulation in selected importing countries viz., Bangladesh, United Arab Emirate and Egypt on Skimmed Milk Powder

From Table No 4.6, it could be observed that stipulation on skimmed milk powder in selected importing countries viz., Bangladesh, United Arab Emirate and Egypt was Technical Barriers to Trade (TBT) like labelling, packaging, marking ingredients etc. These requirements, were almost same for all these countries except for United Arab Emirate and Egypt for which the label must be in Arabic language. The bound and tariff duty was higher in Bangladesh (bound duty was 200 per cent and tariff rate was

25 per cent) than in United Arab Emirates (bound duty was 10 per cent and tariff rate was 7 per cent) and Egypt (bound duty was 10 per cent and tariff rate was 4 per cent). Further, these were subjected to change from time to time. The TBT measures are almost same during I and II periods except documents requirement related to and health measures and Pre-Shipment Inspection had increased.

Sanitary and Phyto Sanitary measures in Bangladesh need special requirement of radioactive test report certificate by EIC (India) + certificate of analysis, whereas in UAE requires, cyclamates free and sanitary certificates, but Egypt requires only radiation inspection certificate issued by EIC (India). In the Phosphates test, cyclamates. Salmonella and Shingella must be negative in the UAE, Bangladesh and Egypt. The Saffrole must be checked and it should not exceed 10 ppm in UAE, but in Bangladesh and Egypt, it was not mentioned. In case of poisonous metals which are clearly mentioned in the table with respect to the countries, however, in Egypt these are not mentioned but it should not be harmful to the consumers. Over all it could be inferred that in period I, the international trade was mainly based on tariff barriers, quota systems, and canalized agencies involved and less importance was given to the nontariff barriers. But these things drastically changed in developed and developing countries after WTO implementation. barriers respect to policies major to non-tariff barriers and reduce the tariff barriers.

Table 4.6 Existing stipulation in selected importing countries on skimmed milk powder

Sr. No.	STIPULATION	DESTINATION		
		BANGLADESH	**UAE**	**EGYPT**
1	Import Restriction	Freely with L.C./import license	Only companies for import license	Freely with import card
2	Pre- Shipment Inspection (PSI)	Quality inspection mandatory (EIC from India)	Quality inspection mandatory by concern authority	Quality inspection mandatory by health, supply and agriculture authority.
3	Duty and other charges for opening L.C.	Bound duty: 200% Custom duty: 25% Advance income tax-3%. Development surcharge-3.5%. Supplementary duty -12%.	Bound duty: 10% Custom duty: 4%	Bound duty: 10% Custom duty: 7% Surcharge: 2%
4	Packing, marking And labelling	Packing-strong and should guard against climate, storage condition, handling (English/Symbols), disease free Indian origin written in large indelible letters (English) on label/container.	Packing–strong and should guard against climate, storage condition, handling. Labels must be in Arabic languages.	Packing–strong and should guard against climate, storage condition, handling and health certificate (EIC). Labels must be in Arabic languages.
5	Weights and Measures	Metric system	Metric system	Metric system
6	Insurance	Must be arranged by Importer	Must be arranged by importer	Must be arranged by importer

Sr. No.	STIPULATION	DESTINATION		
		BANGLADESH	**UAE**	**EGYPT**
7	Method of quoting And payment	Pro-forma invoices Quotes in US$/ INR. on CF Bangladesh port. C IF- separately shown. Payment must be by L.C.	Pro-forma invoices in US$/ Durham/INR. Payment through FOB and CF.	Pro-forma invoices Quotes in US$/INR. Payment through FOB and CF
8	Public health / Special certificate	Radioactive test report (EIC) and certificate of analysis	Cyclamates free Sanitary certificate	Radiation And inspection (EIC India)
9	Document require	Pro-forma invoice: Five copies full descriptions (goods, origin, gross and net weight and full C.F value/FOB freight charges) Commercial invoice: Three copies name and address of both shipper and consignee. Date and port of shipment, port of destination and name of vessel/ packaged. Bill of lading number and date. Marks, number, weights and measurements and type of package. Value of merchandise. L.C. No. and date. Fax signature is not acceptable. Certificate of origin and packing list (not compulsory) but it is recommended & will facilitate clearance.	Pro-forma invoice: Mention in contract. Full descriptions (Goods, origin, gross, net weight, selling and Price) Trade license. Commercial invoice: Three copies indicate full C.F value/FOB freight charge). Certificate of origin. Bill of lading (two original copies must furnish) and packing list (compulsory) but it is recommended and will facilitate clearance.	Pro-forma invoice: Mention in contract. Full descriptions (Goods, origin, gross, net weight and selling price) Commercial invoice: Three copies indicate full C.F value/FOB freight charges). Radiation Certificate and origin. Bill of lading and packing certificate (not compulsory). Must bear a statement the information is true and correct and goods being shipped and manufactured from India.

Sr. No.	STIPULATION	DESTINATION		
		BANGLADESH	**UAE**	**EGYPT**
10	Trade sample	Duty free	Duty free	Duty free
11	Fat(max)	1.5%	1.25%	1.5%
12	Moisture (max.)	4%	3%	4%
13	Titrable Acidity (max)	0.15%	0.15%	0.15%
14	Insolubility index (max)	1.25ml	1.25ml	1.25ml
15	Scorched Particle	-	Disc B or better	-
16	SPE (max.)	30000/gm	29000/gm	30000/gm
17	Coliform (max)	90/gm	90/gm	90/gm
18	Phasphatage test and cyclamates salmonella and Shingella	-ve	-ve	-ve
19	Safrole (ppm)max.	-	10	-
20	Poisonous metal (max)ppm	Tin (200), Hg (1.0), Zn (50.0)	Tin (150), Hg (0.05), Zn (50.0)	-

From the Table No 4.6, it could be observed that stipulation on skimmed milk powder in selected importing countries viz, Bangladesh, United Arab Emirate and Egypt, needs Technical Barriers to Trade (TBT) like labelling, packaging, marking ingredients etc. requirements were almost same but in United Arab Emirate and Egypt, the label must be in Arabic language. The bound and tariff duty was very high in Bangladesh (bound duty-200 per cent and tariff rate-25 per cent) than United Arab Emirate (bound duty-10 per cent and tariff rate-7 per cent) and Egypt (bound duty-10 per cent and tariff rate-4 per cent) and it was changed time to time because the Bangladesh domestic dairy industries performed well and were able to compete with the imported product with respect to quality and price and whenever required for safety for the domestic industries it imposed high tariff rates. Whereas in the case of UAE and Egypt there was scarcity in the production and not to meet the domestic demand so, it adopted liberalized policies to fulfil the domestic demand. But with regard to import license all the countries must possess the import license as the products are sensitive and any malpractice is noticed then it is necessary to take action against them.

4.4.2 Existing stipulation in selected importing countries *viz.*, United State of America (USA), United Arab Emirate (UAE) and Kuwait on ghee + butter oil

From the Table 4.7, it could be observed that stipulation on ghee + butter oil in selected importing countries viz. United States of America (USA), United Arab Emirate (UAE) and. Kuwait, indicated that the import restrictions were removed by all the countries. But in USA. the quota was converted into tariff rate quota up to 41050 MT. The imposed tariff was 117 per cent (TRQ), the bound duty was 90 per cent and basic duty was 8.5 per cent in 2004-05 and it was based on the specific duty of US$ 2300/tonne. In other countries like United Arab Emirate (UAE) and Kuwait there was no Tariff Rate Quota, but the bound duty and basic duty were quite lower than USA, which is given in the table. In the case of import license in Kuwait, the person must be Kuwaiti, while in UAE, it is only given to companies not individual persons, but in USA, the retailers require UPC bar code.

The Import restriction was open only after implementing of WTO earlier it was Quota systems in all the countries with high Bound /Tariff rate in USA than the United Arab Emirate (UAE) and Kuwait, which is given in the Table Sr.No.3 and it changed from time to time. Technical Barriers to Trade (TBT) like labelling, packaging, marking

ingredients etc. requirements are almost same except that in United Arab Emirate and Kuwait, the label must in Arabic language.

After WTO requirement of the Sanitary and Phyto Sanitary measures on ghee + butter oil was stringent in all the selected countries. In case of USA, UAE and Kuwait the product must be free from cyclamates the sanitary certificate tested by USFDA (United State Federation of Drugs and Administers) must be presented while exporting to USA. In USA, other chemical residues like pesticide, bacterial count (0.05ppm) and poisonous metallic containments which Is mention In Table Sr. No.20, 22, 24 and 25, must be followed by exporter, while In UAE and Kuwait, it was not specially mentioned but it should not be harmful to the consumers.

Table 4.7 Existing stipulation in selected countries on butter oil and ghee

Sr.No.	STIPULATION	DESTINATION		
		USA	**UAE**	**KUWAIT**
1	Import Restriction	41050 MT (TRQ) + Special import license (retailers require UPC barcode)	Only companies take import license	Import License + must be Kuwaitian
2	Pre- Shipment Inspection (PSI)	Quality inspection mandatory (US Food and Drug Administration regulation)	Mandatory Quality Test Certificate EIC from India)	Mandatory Quality Test Certificate
3	Duty & Other Charges for Opening L.C.	Bound duty: 90% Custom duty: 8.5% (Based on specific duty US$ 2300/tonne)	Bound duty: 10% Custom duty: 4%	Bound duty: 10% Custom duty: 6% Transit duty: 2% + 1% value on Goods
4	Packing, marking and labelling	Packing - strong and should guard against climate, storage condition, handling requirement, health, ingredients (English/symbols), disease free Indian origin written in large indelible letters (English) on label/container	Packing – strong and should guard against climate, storage condition, handling and Ingredients. Labels must be in Arabic languages	Packing – strong and should guard against climate, storage condition, handling, ingredients. Labels must be in Arabic languages

Sr.No.	STIPULATION	DESTINATION		
		USA	**UAE**	**KUWAIT**
5	Weights, Measures	Metric system	Metric system	Metric system
6	Insurance	Must be arranged by importer	Must be arranged by importer	Must be arranged by importer
7	Method of Quoting and Payment.	Pro-forma invoices Quotes in US$/1NR. Payment-FOB & CF.	Pro-forma invoices Quotes in US$ /Durham /INR. Payment-FOB and CF.	Pro-forma invoices Quotes in US$ /INR. Payment-FOB and CF.
8	Public Health /Special certificate.	Inspection always (US, FDA) Cyclamates free. Sanitary certificate.	Inspection always, cyclamates free. Sanitary certificate.	Inspection always must be cyclamates free.
9	Document Require	Pro-forma invoice: Mention in contract. Full descriptions (Goods, origin, gross, net weight, selling and Price) Trade license. Commercial invoice: Three copies indicate full C.F value/fob freight charges). Certificate of origin. Bill of lading (two original copies must furnish) and packing list (compulsory) but it is recommended and will facilitate clearance.	Pro-forma invoice: Mention in contract. Full descriptions (Goods, origin, gross, net weight, selling and Price) Trade license. Commercial invoice: Three copies indicate Full C.F value/FOB freight charges). Certificate of origin. Bill of lading (two original copies must furnish) and packing list (compulsory) but it is recommended and will facilitate clearance.	Pro-forma invoice: Mention in contract. Full descriptions (Goods, origin, gross, net weight, selling and Price) Trade license. Commercial invoice: Three copies indicate Full C.F value/FOB freight charges). Certificate of origin. Bill of lading (two original copies must furnish) and packing list (compulsory) but it is recommended and will facilitate clearance.

Sr.No.	STIPULATION	DESTINATION		
		USA	**UAE**	**KUWAIT**
10	Trade Sample	Duty free	Duty free	Duty free
11	Colour	Off white	Off white	Off white
12	Flavour and aroma	Clean, rich aroma, free from objectionable taint/rancidity	Clean, rich aroma, Free from objectionable taint/rancidity	Clean, rich aroma. Free from objectionable taint/rancidity
13	Texture.	Granular	Granular	Granular
14	Moisture% (Max.)	0.2 (butter oil) and 0.1 (ghee)	0.3 butter oil and 0.2 (ghee)	0.3 butter oil and 0.2 (ghee)
15	Protein %(min)	0.3 (butter oil) and 0.1 (ghee)	0.3 (butter oil) and 0.2 (ghee)	0.3 (butter oil) and 0.2 (ghee)
16	R.M. Value (min)	29	29	29
17	FFA (%) as oleic acid (max)	1.0	1.0	1.0
18	BR test (40^{o}c)	41-43	40-43	42-43
19	Baud in test	-ve	-ve	-ve
20	Phytosterol acetate test	-ve	-ve	-ve
21	Animal fat & Vegetable fat	-ve	-ve	-ve
22	Pesticide Residues	0.10 to 0.05 (fat basis)	0.10 to 0.05 (fat basis)	0.10 to 0.05 (fat basis)

Sr.No.	STIPULATION	DESTINATION		
		USA	**UAE**	**KUWAIT**
23	Shelf life (best before pack)	12 month	12 month	12 month
24	Bacterial count (ppm)	0.05	0.05	0.05
25	Metallic contaminant (Max)	Pb (1.5),As (0.5), Cd (1.0), Sn(20.0), Hg(0.05),Zn(2.0)		

From Table 4.8, it could be observed that stipulation on ghee + butter oil in selected importing countries *viz.* United State of America (USA), United Arab Emirate (UAE) and. Kuwait, attributed that import restriction were removed in all the above selected countries. But in the USA, quota was converted into Tariff Rate Quota (41050 MT). The imposed tariff was 117 per cent (TRQ) and the bound duty was 90 per cent and basic duty 8.5 per cent in 2004-05 and which was based on the specific duty of US$ 2300/tonne. As a result, the USA dairy industries were emerging more competitive in the world. In other countries like United Arab Emirate (UAE) and Kuwait, there was no Tariff Rate Quota but bound duty and basic duty was lower than USA. As the UAE and Kuwait were not fulfilled by the domestic production, they depended on imported products. In the case of import license in Kuwait, the person must be Kuwaiti, which shows the patriotism and given only to companies but not for individual persons as the responsibility was taken by the Government to ensure consumer health and safety. But in USA, retailers require UPC bar code due to proper distribution of products with responsibility at every stage which shows more conscious for health and safety of the consumer since they were in developed country. Technical Barriers to trade (TBT) like labelling, packaging, marking ingredients *etc*.

4.5 INDIA'S EXPORT POTENTIAL - DAIRY PRODUCTS AND MARKET IDENTIFICATION

Table 4.8 Identification of Potential Products: Using Revealed Comparative Advantage

Sr. 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

Table 4.9 Net Importing countries and their Trade Potential Score

Name of the country	**Trade potential Score**
Hong Kong	52.4
Philippines	47.6
UAE	87.8
Nepal	29.2

It is observed that 46 per cent of the potential markets are in African region. This is partly because most African countries are untapped whereas rest of the regions like Asia, Middle East and Oceania were currently being served by Indian dairy exporters. Following Africa, Asia is the second largest potential markets for exports of dairy products from India. 36 per cent 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 3rd most potential market for export of dairy products from India. Despite high quality measures, European region consists of 21per cent of the potential market. Middle East and America cover only about 1 per cent of the potential markets. No potential markets are identified in the Ocean region.

Table 4.10 Revealed Comparative Advantage

Year	India		World		RCA
	Qty	Share	Qty	Share	
2001	25778	3.26	19115488	3.47	0.94
2002	22561	2.85	19886322	3.61	0.79
2003	25986	3.29	20665523	3.75	0.87
2004	19860	2.51	21553382	3.91	0.64
2005	25634	3.24	25197886	4.57	0.70
2006	30189	3.82	26119823	4.74	0.80
2007	31459	3.98	22598612	4.10	0.97
2008	30125	3.81	23445986	4.25	0.89
2009	33169	4.20	24507118	4.45	0.94
2010	41793	5.29	28617017	5.19	1.01
2011	38866	4.92	29154388	5.29	0.92
2012	50184	6.35	30149508	5.47	1.16
2013	124608	15.78	32244192	5.85	2.69
2014	86544	10.96	34113262	6.19	1.76
2015	35377	4.48	33323224	6.05	0.74
2016	30397	3.85	36956901	6.71	0.57
2017	30293	3.83	37302216	6.77	0.56
2018	56025	7.09	34712248	6.30	1.12
2019	40245	5.09	35025955	6.36	0.80
2020	10295	1.30	15956348	2.89	0.45
TOTAL	789388	100	550645399	100	

It is evident from table 4.10, the coefficient of RCA of dairy products is less than unity, which implies that India does not have any comparative advantage in the context of exporting dairy products. The estimated results indicate that the RAC indices for the dairy product were found to be less than unity, suggesting that India does not enjoy a comparative advantage for exporting any or a particular dairy product from its dairy product portfolio. The situation could be attributed to various reasons. India's dairy exports are increasing over the period, thanks to the consistent rise of milk production. At the same time, there has been a trend in rising income levels in urban centres, where the demand for processed dairy products has gone up leaving few surpluses for exports.

CHAPTER- V

SUMMARY AND CONCLUSION

The daily sector occupies a dominant place in providing food, income, employment and foreign exchange to the Indian economy. It serves as a store of wealth for farmers and organic fertilizer for crop production. Although, the share of agricultural sector in GDP has been continuously declining, the share of dairy in agricultural GDP has been growing in upward trend.

India has vast livestock resources (57 per cent of the world buffalo population and 16 per cent of the cattle population). Over the years, the sector has played major role in development of millions of rural households and their socio-economic conditions. In the WTO era and globalization, the industry needs appropriate production, marketing and trade policies and its periodic revival to keep pace with the rest of world and to remain competitive to grab opportunities in international trade. In the early nineties, the Government of India introduced major trade policy, which favoured liberalization in of all the sectors of economy and dairy sector was no exception to this. The dairy industry was delicensed in 1991 with a view to encourage private investment for flow of capital and new technology in the sector. The competition from the organized private sector was immediate in the form of sharp increase in capacities for milk processing, especially in areas where milk availability was relatively significant. Within a year of de-licensing over 100 new dairy processing plants come up in the private sector. The WTO regime is now a reality as India is a signatory under the WTO rules has opportunity to expend its exports product base. It's become more open world trade regime where barriers to trade were reduced. The major dairy products exported from the country includes skimmed milk powder, whole milk powder, ghee, butter oil, milk food for babies, butter, milk for babies, milk and cream etc. The positive trend in export and negative trend in imports was observed due to the success full implementation of Operation Flood and set of Government policies regarding international trade.

The SPS and TBT agreement in the recent WTO have vastly changed the current international food trade scenario. The importing countries accepted Codex-intonational food standards and at the same time they imposed (specify) their own requirements on the basis of scientific information. With continuing changes in world

dairy production, composition of consumption and emerging challenges in food safety and quality shifts in consumer requirement of international trade and these complex things definitely necessitated periodic review and updating of national food control systems and infrastructure support. The various importing countries stipulates the measures in time to time on Indian exporters, which becomes necessary to fulfil their requirements otherwise returning the products costs more and hard to afford. It also affected the country's trades, which automatically affect the economy. So that the Indian dairy industry prospers further, generate employment, compete in international market and convert challenges into opportunities in WTO era by providing suitable trade policy to the Indian dairy industry. Hence, it was felt necessary that to know the different policies implemented and their impact on Indian dairy trades.

The present study was undertaken to study the temporal changes in Indian dairy industry with following specific objectives.

1. To document the existing government policies on imports and exports of dairy products in India.
2. To study the trends in exports and imports of selected dairy products in India.
3. To study the Impact of changes in Government policies on exports and imports of selected dairy products in India.
4. To study the existing stipulation in selected importing countries on selected dairy products.
5. To study India’s export potential - Dairy products and market identification.

5.1 MAJOR FINDING OF THE STUDY

5.1.1 Existing government policies on imports and exports

In Period I (2000-2010) the policies were mainly concerned with domestic market, import regulations as well as import substitutions. But after liberalization (1991-92), the concern was on export quality control and import of dairy products from the viewpoint of domestic industries. In Period II, policies implemented to enhance the competitiveness in the international market by maintaining sanitary and quality standards of domestic products as well as imported products and also monitoring the incentives provided to boost the export.

5.1.2 Trends in exports and imports of selected dairy products

In Period I & II export Quantity of dairy product recorded increasing growth significantly except in 2012 ,2016 and 2019. However, fluctuation in export value due to time factor was 76, 48 and 18 per cent respectively. Because of Operation flood

policy in Period II 48 percent variation was due to time factor and observed decreasing trend except in 2016 to 2019.

5.1.3 Impact of changes in Government policies on exports and imports

Multiple linear regression functions were run for selected dairy products to know the impact of Government policy on trade performance of dairy production. In this model the combined effect of Government policies and WTO on export and import value was studied. Independent/explanatory variables included in the analysis were Sanitary and Phyto Sanitary measures (SPS), Quantitative Restrictions (QRs), import/ export license, domestic support to dairy industry, import duty and dummy variable. On the other hand, export/ import value was selected as the dependent variable to study the factors affecting the export/import value of selected dairy products.

5.1.4 Existing stipulation in selected importing countries on Dairy products.

By removing policy distortions through negotiating the business partner countries regarding dismantling of trade we can artificially magnify economies of scale in dairy products production. Stipulation on skimmed milk powder in selected importing countries *viz*., Bangladesh, Arab Emirate and Egypt shows Technical Barriers to Trade (TBT) like labelling, packaging, marking ingredients etc. requirements are almost same except that in United Arab Emirate and Egypt, the label must in Arabic languages. In the case of bound and tariff duty it was very higher in Bangladesh (bound duty-200% and tariff rate-25%) than United Arab Emirate (bound duty-10% and tariff rate-7%) and Egypt (bound duty-10% and tariff rate- 4%) and it changed time to time.

5.1.5 India's export potential - Dairy products and market identification

It is observed that 46 per cent of the potential markets are in African region. This is partly because most African countries are untapped whereas 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 market for exports of dairy products from India. 36 per cent 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 3rd most potential market for export of dairy products from India. Despite high quality measures, European region consists of 21 per cent of the potential market. Middle

East and America cover only about 1 per cent of the potential markets. No potential markets were identified in the Oceania region.

5.2 CONCLUSION

Over all it can be concluded that in the Period I countries trade was based on the tariff barriers, quota systems, canalized and less important. It was drastically changed in developed and rich countries after Period I. Whereas the independent variables revealed that the QRs and the export license bad negative and significant impact due to imposed policies on Canalization, restrictions and Open General License with respect to the consumer and economy concern. The international requirement of selected major importing countries for major dairy products exported from India. For existence and competing in the global market, it is necessary to maintain standard of the products according to business partner requirement.