Chapter 2
Review of Literature

2.1. Introduction

The process of globalisation has revolutionized world agriculture. Innovations in communication technology provide instant access of market information to millions of farmers, processors and traders of agricultural produce. Most of the developing countries have undertaken a program of structural adjustment designed to liberalise both their internal economies and their trading relationship with other countries. The past twenty years have been marked by an accelerating trend towards globalization and liberalisation of economies and international trade. The GATT and several rounds of negotiations led to the establishment of WTO. More than 100 countries gathered in Marrakesh, Morocco, to sign the Uruguay Agreement. Almost all the countries have now committed themselves to the objectives associated with their membership of WTO.

A large proportion of the population of the developing countries is employed in agricultural production and associated activity than any other economic sector. Exclusion of agriculture in any serious discussion on structural reforms in the developing countries is not possible. It is the largest private sector in the developing economy and it produces tradable goods. Therefore, the export of agricultural products represents one of the most important sources of foreign exchange earnings for these countries. The liberalized trade provides global market to India as well. According to, the US Congressional Research, "Service developing countries in general are expected increase income from USD 36 Billion to USD 89.1 Billion annually as a result of WTO reforms."

2.2. Literature Review

For the purpose of systematic presentation to cover the objectives of the study, the studies reviewed so far have been divided into two parts namely Agricultural exports,

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and Agricultural exports and World Trade Organisation. Within each category the review is presented chronologically.

2.2.1. Agricultural Exports

Studies in this section have been reviewed in view of three objectives of the present study (a) Export performance of agriculture, (b) Problems in the growth of agriculture and (c) Alternative measures to promote agricultural export.

Ana I. Sanjuan-Lopez and P. J. Dawson (2010) study the contribution of agricultural exports to economic growth in developing countries. The study estimates the relationship between GDP and agricultural and non-agricultural exports for 42 countries using panel co-integration methods. Results show that there is a long-run relationship between agricultural export and development of these countries. The agricultural export elasticity of GDP is 0.07 whereas that of non-agricultural exports is 0.13. Structural differences exist in the relationship by broad income group. Balanced export-promotion polices are implied for the poorest countries, but, for those with higher incomes, higher economic growth is achieved from non-agricultural exports.25

Noelia Jimenez and Esther Martin (2010) analyse the extent to which changes in the market shares of the euro area and its member countries between 1994 and 2007 have been determined by genuine changes in their competitiveness, or whether they are rather the outcome of the particular geographical and sectoral composition of their exports. For this purpose they use the constant market share analysis. The results obtained are compared with those for the United States and the United Kingdom. The analysis uses the United Nations COMTRADE database, which has annual information on bilateral trade flows in nominal terms for the period 1993-2007. The one- and two-digit SITC classification is used for the sectoral breakdown, spanning 14 types of products (oil products and unclassifiable goods have been excluded) which, in turn, have been grouped into three categories, depending on their technological content: low, medium and high. At the same time, 14 regions have been considered as destinations.

The study finds that competitiveness had a very mixed effect on the euro area countries and that it is not possible to find a clear pattern regarding the influence of each of product categories and regions of destination separately. Although the size of the impact of the type of good and its sectoral composition have also been fairly heterogeneous, it is seen that lower specialisation relative to world trade in high-technology products has had an adverse impact in all the euro area countries. However the study does not mention the kind of adverse effects.26

Deshmukh (2009a) examines the export of horticulture, constraints and policy implications. He undertakes the export competitiveness of major horticultural crops of Maharashtra, based on the primary survey that covered the exporters, growers cum exporters, agency experts in the state of Maharashtra for the year 2005-06. The study provides an integrated view of the horticulture sector of the state. The study uses the primary and secondary data. The secondary data on export quantity and value of horticulture crops for India and Maharashtra is obtained from APEDA, Ministry of commerce, Government of India, Commissionaire of Horticulture, Government of Maharashtra, Pune. The study finds that export of horticulture corps has increased significantly in the post WTO period.

For boosting the horticulture exports the study suggests several measures such as – State owned and private enterprises should continue to play a large role in agricultural markets including seed production, fertilizer distribution, fruit processing and exports; continuous monitoring of international prices and appropriate tariff protection; Promotion of agri-information centers like www.phalbazar.com; Improve the infrastructure facilities like roads, water and power, refrigerated wagons; Intensify the market promotion efforts in SAARC and Middle East countries; Improve domestic market channels- increase efficiency and reduce cost; Agricultural Export Zones should adopt end to end approach i.e., integrating the complete process from export queries to dispatch of export consignment; Exporters need to recognize the professional management approach of deriving synergy to build competitiveness to emerge as

dependable suppliers on a sustained basis; Enlarge the market and concentrate more on traditional markets to gain more competitiveness.27

Deshmukh (2009b) in his paper liberalization and export competitiveness of Indian mango, examines the export competitiveness of mango during the 1991-92 to 2005-06 for India. The time series data for the study is from APEDA and FAO database of United Nations. The study has used the Nominal Protection Coefficient (NPC), Domestic Resource Cost (DRC) and Compound Annual Growth Rate (CAGR). The study reveals that Indian mango was competitive till 1995-96 (highly competitive in 1991-92 to moderately competitive during 2005-06), thereafter it has become uncompetitive. The largest share of Indian mangoes is exported to UAE. The study suggests that – there is a need to improve the quality and productivity of mangoes, provide incentives for mango production, promote national horticultural mission project India as more consistent and reliable trading partner by regular trade.28

Kumar N R, et al (2009) study the performance, competitiveness, major destinations and determinants of cucumber and gherkin export from India. Export performance ratio has been used to estimate the competitiveness, and log linear type of demand function has been used to determine the export determinants. Using the data from 1990 to 2005 collected from APEDA the study finds that the export of the products has increased by about 128.5 times with an impressive annual compound growth rate of 37.46 per cent, as against only 4.38 per cent in the world market. The major export destinations for cucumber and gherkin have been identified as France, USA, Russia, Belgium and Spain. An increasing and high value of revealed comparative advantage (RCA) and a positive and increasing value for revealed symmetric comparative advantage (RSCA) have indicated high potential in their export, particularly for the provisionally-preserved and prepared/preserved products. One per cent increase in volume of international trade in cucumber and gherkin may increase the demand from India by 5.96 per cent. The study indicates that India is highly competitive in export of cucumber and gherkin and has ample scope to further increase its export. However, the


exchange rate is a more dominant determinant of export from India than prices of these commodities.\textsuperscript{29}

\textbf{Goyal and Gupta (2009)} examine the status and growth in fruits and vegetables production capacity and growth and instability in exports. The study is based on secondary data from 1980 to 2006 collected from FAO, Economic Survey of India and APEDA. Using the instability index the study finds that there is a better performance of fresh fruits and vegetable in the post reform era compared to pre reform. But for processed fruits and vegetables the export growth declined. Globalisation and liberalisation has brought unprecedented challenges and severe competition to the industry. Thus there is need to improve quality, make the prices competitive and be innovative in anticipating the customer needs.\textsuperscript{30}

\textbf{Nageshwara et al (2009)} explore the direction and composition of Indian agricultural export. The study uses the data from FAOSTAT. The study period is 2003 to 2006. The study reveals that India is amongst top ten producers in the world for rice, buffalo milk, wheat, cow milk, fresh vegetables, sugar cane, potatoes, groundnut, pepper mint and buffalo meat. The technological developments, macro-economic reforms and Uruguay Round Agreement have contributed to the changes in agricultural trade. India is diversifying the rice export markets as it is negotiating free trade agreement with the EU and ASEAN. Agriculture holds the key position not only due to its contribution in GDP but also due to the dependence of a large population. The progress of agriculture has made a lot of changes in the net trading position of India. India had to depend on imports to feed its people but since 1990 we are exporting the agricultural products. Indian agriculture is so large and diverse that even a slight change in its trade can affect the world agricultural market.\textsuperscript{31}


Shinoj P et al (2009) study the export of fish and fishery products from India from 1995-96 to 2006-07. Using the secondary data from MPEDA, INFOFISH, FAO and GLOBEFISH, the instability in exports and prices was estimated using the Cuddy and Della value index. The findings of the study are – (i) India’s export basket has got diversified towards low value export market of South East Asian countries and Middle East countries, (ii) European Union is still the favoured destination, (iii) The sanitary and phyto sanitary Agreement and technical barriers to trade has been acting as a strong non-tariff barriers to trade, (iv) Due to inadequate infrastructure, processing, packaging and grading facilities and lack of proper attention towards hygiene practices Indian fisheries consignments are rejected innumerable times.32

Yadav et al (2009) in their study of export potential of major fruits examine India’s position in the world export of fresh fruits – banana, mango, grapes, orange, apple and mosambi. The data from 1990 to 2005-06 is considered and data source is FAOSTAT. They examine India’s share and position in fresh fruits export vis a vis other fresh fruits exporters in the world. In terms of production India’s share in the total world production of mangoes is 65 per cent and that of bananas is 11 per cent. As against this India’s share in the world export for these fruits is negligible i.e. less than 1 per cent. The importers of India’s fresh fruits are Bangladesh, Nepal, UAE, UK and Malaysia. Major exporters of fresh fruits are Spain, USA, Italy, Belgium, Netherlands and Chile. China is biggest competitor for Indian fresh fruits. The study finds out some major constraints for the fresh fruits export are-low crop productivity, limited irrigation facilities, underdeveloped infrastructure like cold storage, roads, transportation facilities etc,

However the study lists the opportunities for the sector too. They are-Long growing season, diverse soil and climatic conditions comprising several agro-ecological regions. Thus efforts are needed in the direction to capitalize on our strengths and remove bottlenecks to meet the goal of moving towards formidable horticultural growth. For improving the situation the study suggest that – improve productivity and use of low cost technologies in production of fruits crops, make farmers aware about the quality

standards and quality needed in the world markets, reschedule time of maturity to coincide with the shortage in the world markets, create essential market infrastructure facilities, identify more markets (European and US markets are major importers of the fresh fruits in the world), develop consumer preferred fruit products, establish efficient world and domestic market, introduce certification zoning system, and promotion of certification of organic farming for different horticulture crop.33

Arvind Awasthi, (2008) examines the issue of triggering development of horticultural crops acts as a viable option by analyzing three important aspects. Firstly, behavior of actual production of food and horticultural crops in relation to its trends, secondly, consumption and production of both food and horticultural commodities and thirdly, inter-temporal change in the percentage share of food and horticultural export in total value of agricultural exports. The analysis of three issues suggests that any attempt to promote horticultural development may create an imbalance in demand and supply of food grains as well as in horticultural crops due to reallocation of area between the two. The study finds that there is an improvement in the share of horticultural products in the total export value of agricultural products since 1991. Thus the promotion of horticulture development is not a hindrance in the growth of production and consumption of other food grains.34

Burange L. G. & Sheetal J. Chaddha (2008) evaluate the structure of comparative advantage in India and the change in the scene over a 10-year period from 1996 to 2005. Using the data as per the HS classification is used to compute the index for various levels of aggregation for exports as well as for imports for RCA. As per the HS


35 Harmonised Commodity Description and Coding System (HS) is the internationally standardized system of tariff nomenclature, under which the names and numbers of classifying traded products are developed and maintained by World Customs Organisation (WCO). They are numerical codes that describe what is being shipped to and from countries worldwide. The first 6 digits of HS is used universally. Each country then adds to the original 6 digits to suit to its own tariff and statistical needs, creating 8 or 10 or 12 digits national code.
classification, India enjoys comparative advantage in the exports of labour-intensive items like textiles and scale-intensive items such as chemicals and iron and steel.

The paper also evaluates India’s RCA in exports and imports in different type of goods categorized on the basis of their production. These include, ‘Ricardo’, ‘Heckscher-Ohlin’ (HO), ‘Product-cycle’ (PC) goods and ‘Others’. ‘Ricardo’ goods incorporate those goods which use natural resources for their production, such as wood, paper, ores, food, non-ferrous metals and oils. Thus, countries at lower levels of development generally export such goods since their production is based on what is naturally available in the economy. ‘HO’ goods are produced using standard technology and are characterized by lower costs in R&D. ‘PC’ goods essentially are technology intensive and are characterized by high R&D. Technology in case of ‘PC’ goods changes rapidly as innovation is the key to their existence. Results suggest that India enjoys a comparative advantage in the exports of Ricardo and HO goods. PC goods in contrast have not displayed any improvement in the exports of Ricardo and HO goods. On the import front, it is essentially Ricardo goods where India enjoys comparative advantage. All those goods for which standard technology is required for the production is shifting to developing economies like India as shown by absence of Revealed Comparative Advantage in imports of these goods.36

Shinoj P et al (2008) examine the comparative advantage of India in agricultural export vis-a-vis Asia in the post reform era. Recent developments in the international trade scenario and corresponding alterations in India’s foreign trade policies have depicted far reaching implications for India’s agricultural exports in particular. Using the data from various issues of FAO trade Year book from 1991 to 2004 ten major agricultural commodities group are studied. Revealed Comparative Advantage (RCA) is used for the identifications of international comparative advantage or disadvantage of India in the selected commodities. The study finds that India has been able to maintain comparative advantage in commodities like cashew and oil meals, but tea, coffee, spices, marine products have been negatively affected. However, India has been found

losing its comparative advantage in export of some of the agricultural commodities to other Asian competitors during the post reform period.  

Hazra P and S Sirohi (2007) examines export trends of India’s dairy products in Asian markets, analyses the import demand and relative price elasticity of Indian dairy exports and presents short term export forecast in select Asian destinations. The analysis is based on HS 4 and 8 digit level data of India’s export to 40 Asian countries during 1991-2004. The data are collected from electronic database of the Ministry of Commerce, Government of India and Commodity Trade Statistics (COMTRADE) of United Nations. The trends in dairy exports to each Asian country are examined in terms of market and product classification, export instability index, quantity and value gap and value elasticity. The findings of the study reveal that India has taken the advantage of the burgeoning Asian markets. There is a 32 per cent rise in Indian dairy exports to Asian markets during the study period. Even though new markets are added the export potential still lies in traditional dairy products like concentrated milk and cream based products.

The paper suggests that there is need for a comprehensive strategy for increased production of quality dairy products and intensification of efforts for diversifying the export basket towards whey based products, dairy spreads, butter oil, processed and powdered cheese and fermented products. The consistent trade policy is important in reducing instability because frequent changes in the government decisions act as the disincentives for the exporters and discourage investments.  

Kumar and Rai (2007) in their study revealed that export of tomato and its products has registered an impressive growth during the recent years, after the liberalisation of trade. Export competitiveness of Indian tomato and its products can be improved through socialization of improved techniques of production and processing and by providing adequate government support for making production and marketing of these products more economical. Establishment of infrastructure for various sanitary and


phyto-sanitary measures may also help in improving Indian competitiveness in the international market.  

\textbf{Mattoo et al. (2007)} A World Bank Report, pointed out that high cost of product delivery are today probably as big an impediment to exports as foreign protection and demanding standards. A large part of high cost is attributable to weakness in transport, storage and marketing infrastructure. The authors mention three major factors undermining India’s potential for reaching supermarkets around the globe. These were: (i) high cost of getting produce from farm to market, (ii) existence of huge gap between stringent health, safety and quality standards required by foreign governments and buyers especially richer countries, and (iii) the pernicious form of trade protection in horticulture such as those that discriminate against efficiency delivery, quotas that impose harsh tariffs on imports above certain low levels and a system of special safeguards that is a source of considerable uncertainty for successful exporters.  

\textbf{Mittal (2007)} found that the supply constraints, yield gaps and huge logistics costs affect our competitive and comparative advantage in world trade markets. In this study the nominal protection coefficient and revealed comparative advantage are computed to examine the existing status. The study identifies the potential states for the fruits and vegetables, for which India is globally competitive and has comparative advantage in production. These states should be targeted for enhancing the export potential of the country. On the basis of export quantity and share from the export data from 2001 to 2005-06, the study has identified commodity wise the potential competing countries.  

\textbf{Veeramani (2007)} examines the source of India’s export growth in pre and post reform era. The merchandise data have been taken from COMTRADE-WITS. The data set consists of total world exports and Indian exports from 1962 to 2005. The pace of India’s export growth has not been distinctly high during the larger part of the post

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reform period (1993-2005), though it has accelerated since 2002. In contrast to the pre-reform period (1950-90), the actual growth of exports in the post-reform period has been above the potential offered by the growth of world demand. The gap between the actual and potential is mainly explained by an improvement in the overall competitiveness of India's exports. The rapid growth of India's merchandise exports since 2002 gives no room for complacency since it has been mainly determined by a buoyant world economy. The competitiveness effect, though positive, has not been the major contributing factor to the acceleration in the growth rate of merchandise exports in recent years. It appears that exports have been adversely affected by the appreciation of the real effective exchange rate during the post-reform period. The study concludes that there is an improvement in the overall competitiveness of India's export in the post-reform era and rapid growth of merchandise exports since 2002 is driven by buoyant world economy.42

Fredrik O.L. Nilsson et al (2006) investigate the competitiveness of Mediterranean countries. Nine Mediterranean countries namely Morocco, Tunisia, Egypt, Israel, Jordan, Turkey, Cyprus, Greece and Spain with respect to fresh fruit and vegetables in light of the Barcelona Agreement signed in 1995 resulting in bilateral agreements between the EU and twelve Mediterranean countries. The importance of the sectors for the economies and their exports is assessed through Relative Unit Values (RUV) and Revealed comparative Advantage (RCA) and trade performance of the fruit and vegetable sectors in the countries is analyzed through constant market share (CMS) analysis. The study is based on the data from 1993-1994 to 2003-2004 collected from the COMTRADE database of the UN Statistics Division. The findings show that the competitiveness of the investigated countries has deteriorated over the study period. In only two cases, there is an increase in competitiveness.43

Sathe D and R S Deshpande (2006) examine the impact of opening up of the agricultural sector on the trends and composition of agricultural trade. The study


reviews the changes in the trends and composition of agricultural trade from 1990 till 2004 based on the data collected from FAO website. The findings reveal that India has moved away from the earlier general apathy towards trade and particular suspicion towards agricultural trade. Despite relentless policy focus on nonagricultural exports over the years, the share of India’s agricultural exports in world agricultural exports is higher than the similar share of India’s total exports in world total exports. For the top 15 agriculture exports considered for the study there is no discernible change in the composition, though commodities with a lower share show higher rates of growth. India seems to have avoided abrupt disruptions in its agricultural trade patterns. A trade policy regime which is more open was being put in place in the study period. India has followed a policy of taking small steps at a time. As a result, the changes that have occurred in agricultural trade have been very gradual and steady.44

Sen S and S Raju (2006) examine issues related to high value diversification in agriculture by taking floriculture as a case study and finds that though the profitability of cut-flowers is substantially higher than that of the traditional crops, the participation of the smaller farmers in flower cultivation is lower compared to most of the other farm-size categories, primarily because of weak linkages with the market. The study is based on the primary data collected from Gangdhari village located in nearby district of Muzaffarnagar in Uttar Pradesh. The results indicate that risk aversion is an important impediment to crop-diversification, particularly for the land-poor category of farmers. Schemes to diversify crops are likely to face serious constraints unless resource-related and institutional barriers like access to markets are overcome.45

Singh and Goyal (2004) studies export concentration, growth and instability for Indian agricultural and processed food products by using the data from 1993-94 to 2001-02. They found that the extent of growth in value terms has been invariably higher than that of the amount of growth in quantity terms except few commodities. The instability has been by and large higher for quantity that the export earnings with some exceptions.46


**Goyal S K et al (2000)** in their study titled *India's agricultural exports growth and instability* use export values of various agricultural commodities from 1970-1998. The data is collected from FAO, Trade Year Book, Economic Survey of India etc. The study uses compound growth rates and instability indices. It finds out that there is a decline of agricultural exports in the composition of total exports of India and commodities like tea and mate, cashew kernels, spices and coffee were the dominant exportable items during 1970’s but their share had declined later on. During the 90’s marine products, oil cakes rice, fruits etc., were found to have potential for export earnings. The share of our agricultural export in world exports although is very low but is increasing over the years competing with other countries. The study reveals that the prospects of increasing agricultural exports have improved after the liberalisation. It is found that there is a social conflict between agricultural exports and social welfare. It is suggested that there is a strong need for innovations in evolving new products and new markets. There is a need for stream lining the delivery system. The ability of agricultural trade to expand its market share, particularly in case of high value specialty farm products depends on its ability to deliver consistently high quality at a comparative price.47

**Kehar Singh et al (2003)** study the prospects of agricultural exports of India using composite index approach. The study is based on the analysis of 46 major agricultural products. The commodities are selected on the basis of their total share in the world export (greater than or equal to one). The study uses the time series data of export value and export quantum from 1980 to 2001 obtained from FAO website. The findings of the study reveal that – coffee green, coffee extract, groundnuts, shelled milled paddy, rice, pepper, potatoes have bright prospects, bananas, beef and veal, buffalo meat, cake of rape seed, cotton waste, ghee from cow milk, hen eggs, infant food, lentils, oil of castor beans, oranges, sesame seed, tobacco leaves and walnuts shelled have also been visualized to have positive prospects. The study suggests that there is a need to

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formulate long term policies for reaping the benefits of liberalisation and
globalisation.48

Jha Brajesh (2002) has assessed the export competitiveness of Indian tobacco,
determinants of tobacco exports of India and reviews the world tobacco market in light
of WTO's Agreement of Agriculture and highlights various destinations in the world
tobacco market. The study uses the data from 1979 to 1997 collected from FAO Trade
Year. Using the Ordinary Least Square (OLS) method export demand has been
estimated. The four determinants of export demand found are (i) export prices, (ii)
international prices, (iii) market size and (iv) exchange rate. The study reveals that
together these four determinants explain 84 per cent variation in Indian tobacco export.
Domestic price and world market size are strong determinants of the tobacco export of
India. Trade liberalization across the world has no effect on the world tobacco trade.
Indian tobacco is price competitive and its export demand is elastic to domestic as well
as international prices. Despite being competitive in the international market the share
of Indian tobacco is declining. This is due to imperfections like trade distorting
domestic support, tariff rate quota as trade barrier, Sanitary and phyto-sanitary
standards, bilateral trades, lack of transparencies in the trade related decisions of State
Trading Enterprises (STEs), growing influence of transnational companies and non-
price factor like poor quality of products due to high DDT residue.49

Kaushik K K et al (2000) in their study examine the growth, variability, sources of
variability and the impact of export instability on economic growth and environment in
the Indian case in the ongoing policy reforms. For examining the changes in growth
and instability they have divided the data related to exports from India into two sub
periods: First 1984-85 to 1990-91 and Second 1991-92 to 1997-98. The growth rate and
export instability indices of value, volume and unit prices are calculated by fitting an
exponential time trend. The study finds that the growth rate of agricultural exports is
higher in the later period compared with that in the former. Further the degree of
diversification of export composition is discernible over the period. While analyzing


49Jha Brajesh (2002), "India's tobacco exports: Recent trends, determinants and implications,"
Indian Journal of Agricultural Economics; Jan-Mar 2002; 57, 1, pp-52-64.
the export instability, it is found that there is an increasing instability in agricultural export because agricultural products/markets have instability of prices. The instability of prices arises from the interaction of potentially variable supply particularly in soft commodities, with a relative in elastic demand. The low export instability index for agricultural and allied product together with high instability of index for cash crops is an indication of diversification in agricultural export. This worked as a great stabilizing force on the total earnings the variability in exports is due to the compound results of fluctuation in export demand, variation in domestic production and varying international prices of these products. Further the study reveals that the levels of India’s agriculture and allied products have increased significantly since the inception of trade policy reforms. Agriculture exports experienced high growth with high instability.

Pradhan H P (2000) in his paper discusses the issues of export promotion and potential in the light of liberalisation policies, which according to him, are by products of market forces. The theoretical model of it is based on the laissez-faire doctrine propounded by Adam Smith. With the help of two commodities and two countries model popularly known as Pareto optimal situation he finds that the model does not seem to work in India. He further supports that his view with the help of trend analysis of the net flow of foreign investment and net outflow of factor income which does not present encouraging results. He, thus, sees that the model cannot efficiently work between developed and developing countries. As such, potential for export in Bihar is almost non-existent due to its most non-developed character. Despite this conclusion he visualize export of some area specific fruits namely mangoes and litchi with the help of foreign collaboration and infrastructural support.

Jha (2000) discusses the high hope of Bihar’s export potential. He opines that, despite the slow pace of agricultural development the country has unique opportunity to substantially increase its exports of agricultural products in the free trade regime brought by GATT. For his contention, he puts forth the advantageous situation of


highly diversified nature of agricultural produce such as cereals, pulses, oilseeds, fruits, vegetables, water based products like makhana, spices of various types. The study concentrates on the agricultural exports of the state of Bihar. He argues that Bihar agriculture has much to gain from liberalisation of trade. However, he cautions that the post-harvest technology right from harvesting of the crop to threshing, cleaning, drying, handling, transporting, storage and processing must be improved for which Indian agricultural marketing system needs to be made efficient. In concluding sense he opines that production for export will revolutionise the Indian agriculture and so for Bihar agriculture.\textsuperscript{52}

Qamar Ahsan (2000) finds that in the post – GATT era the greatest beneficiaries are likely to be the emerging economies of Asia while exploring the possibilities of agro export from the state of Bihar. He refers to the much needed attention of food security and opines that even on this count there is no need to be afraid of as our country mostly trade in high value commodities such as tea, coffee, fruits, vegetables, flowers, dry fruits and even fine cereals. He examines the strengths, weaknesses, opportunities and threats for the export potentials of agricultural produce in Bihar. He suggests measure ranging from motivation to farmers to developing adequate infrastructure for creating congenial environment for the export of agro produce.\textsuperscript{53}

Rajagopal (2000) finds that exports have better opportunities in strengthening the international relations particularly in view of the liberalised economic policy adopted in the country. On the basis of the trends he further finds that the liberalised economic policies are helping the economy in a positive direction in global perspective. From export potential point of view he finds that rice has greater competitiveness among cereals and banana, grapes, sapota, and litchi among the fruits. Among the vegetables onion and tomato are more competitive. However, he concluded that despite the advantageous position of these crops, the prerequisite for agricultural exports is the soundness of the project. It is, therefore essential for an exporter to prepare his niche of


Suresh Prasad (2000) discusses the constraints to export promotion in theoretical and ideological framework and opines that without abundance of production as exportable farm commodities no real and genuine export would take place. He pleads that the problems of tapping export potential of agricultural production should not be taken up in isolation, i.e., separating the State from the nation. The entire social character of production which determines the distribution, exchange and consumption should be taken into account. In such a framework he discusses the constraints in four major heads namely (i) basic constraints, (ii) economic constraints, (iii) political constraints and (iv) ideological constraints. On the basis of analysis of these constraints he suggests that the domination of the doctrines of individualism must be superseded by collectivism. Likewise, peasants’ economy based on small and fragmented farm should be superseded by collective farming. So, he rejects the theory of market economy.55

Kutty P U (1999&2000) finds the competitive power of Indian tea in some principal markets. Using the data from 1978 to 1997 collected from publications of international tea committee and Tea Board of India and IMF financial statistics, the author has built the linear regression model of import demand function. The study finds that Indian tea export is not competitive in terms of price in UK, the Netherlands, Canada and Australia and thus experienced a decline in these markets. USA, Canada and the Netherlands prefer other countries tea to Indian tea. USA prefers flavoured tea for which cheap tea is imported from Argentina.56


Prakash et al (1995) examine the impact of new economic policy on agricultural exports. They look at the current trends in foreign trade of India, contribution of agricultural exports in total exports, the share of India in the global production and export of agricultural commodities, the changing compositions of major exportable commodities over time, major steps of liberalisation in agricultural export import policy, to identify the newly emerging agricultural commodities having vast potential for steady exports and to suggest a strategy for realizing full export potential of agricultural commodities. The study is based on secondary data collected from different sources. The share of agricultural and allied products in total export of the country has been on the decline. The composition of major exportable agricultural commodities has changed entirely during the last three decades. In the 80s, tea and mate, coffee, tobacco and cashew kernels were the major agricultural commodities which were exported from India but during 1990 to 1993, the major agricultural commodities exported were marine products, oilcakes and rice.

With the liberalisation of agro based industries and reduction of excise duties of processed foods and import duties on capital goods used for processed food industries, there is more scope for producing and exporting processed food products. Other steps in the new economic policies like permission of exporting tobacco, basmati rice guar gum, orchids, meat of sheep, goat and buffalo and wheat products without minimum export price, reviewing minimum export price for rice, durum wheat, pulses and cotton from time to time, pruning the negative list of exports, canalization of export of onions and Niger seeds through National Agricultural Cooperative Market Federation of India Ltd. (NAFED) and Tribal Cooperative Marketing Development Federation of India Limited (TRIFED) and exempting cess on export of pepper, sugar, spices oils and oleoresin have paved the way for boosting the exports of agricultural commodities. The export of these commodities can further be boosted by proper coordination between national and international trade agencies, raising the outlay for research and development for exportable crops, investment in the agricultural sector, exploiting the value added products rather than raw materials, providing brand status to the items, developing processing and post-harvest handling technologies, decreasing the minimum export prices of a few commodities adopting the differential procurement
prices for durum wheat, creating required infrastructure for the export of marine products, incentives for export and publicity.57

Thus from the above studies the following major conclusions are drawn -

- Agricultural export and development of India has long-run relationship
- The technological developments, macro-economic reforms and Uruguay Round Agreement have contributed to the changes in agricultural trade.
- India has comparative advantage in the exports of goods which use natural resources for their production and goods produced using standard technology and are characterized by lower costs in R&D.
- A large part of high cost of export is attributable to weakness in transport, storage and marketing infrastructure.
- The competitiveness effect, though positive, has not been the major contributing factor to the acceleration in the growth rate of merchandise exports in recent years.
- Exports have been adversely affected by the appreciation of the real effective exchange rate during the post reform period.
- The share of agricultural and allied products in total export of the country has been on the decline. The composition of major exportable agricultural commodities has changed entirely during the last three decades.
- For Indian agricultural and processed food products the extent of growth in value terms has been invariably higher than that of the amount of growth in quantity terms except few commodities.
- There is a decline of agricultural exports in the composition of total exports of India and commodities like tea and mate, cashew kernels, spices and coffee were the dominant exportable items during 1970’s but their share had declined later on.
- During the 90’s marine products, oil cakes rice, fruits etc., were found to have potential for export earnings.
- The share of our agricultural export in world exports although is very low but is increasing over the years competing with other countries.

• Coffee green, coffee extract, groundnuts, shelled milled paddy, rice, pepper, potatoes have bright prospects, bananas, beef and veal, buffalo meat, cake of rape seed, cotton waste, ghee from cow milk, hen eggs, infant food, lentils, oil of castor beans, oranges, sesame seed, tobacco leaves and walnuts shelled have also been visualized to have positive prospects.

• There is a need to formulate long term policies for reaping the benefits of liberalisation and globalisation.

• Domestic price and world market size are strong determinants of the tobacco export of India.

• Indian tea export is not competitive in terms of price in UK, the Netherlands, Canada and Australia and thus experienced a decline in these markets.

• Better performance of fresh fruits and vegetable in the post reform era compared to pre reform

• India has been able to maintain comparative advantage in commodities like cashew and oil meals, but tea, coffee, spices, marine products have been negatively affected

• India has taken the advantage of the burgeoning Asian markets.

• There is need for a comprehensive strategy for increased production of quality dairy products and intensification of efforts for diversifying the export basket towards whey-based products, dairy spreads, butter oil, processed and powdered cheese and fermented products.

• Export of horticulture corps increased significantly in the post WTO period

• The sanitary and phyto-sanitary Agreement and technical barriers to trade has been acting as a strong non-tariff barriers to trade,

• Due to inadequate infrastructure, processing, packaging and grading facilities and lack of proper attention towards hygiene practices Indian fisheries consignments are rejected innumerable times.

2.2.2: Agricultural exports and World Trade Organisation

Government of India and World Trade Organization’s policies relating to Agricultural Trade is one of the important objectives of the present study. In this section researcher has included the reviews related to this objective.
Hakan E and M Greaker (2009) study fisheries and trade of developing countries. Fish is globally traded, and for many developing countries, it is an important net export good. In most of these countries, fisheries are often characterized by poorly defined property rights, accompanied by overcapitalization where too many vessels and fishermen catch too few fish from too small stocks. Management is often de facto open access, where vessels with or without permission to fish land as much as they can catch due to limited monitoring and enforcement activities. Even in developed countries, many fisheries are poorly managed, and recent studies indicate that marine ecosystems are in global decline. While trade is generally beneficial for growth and welfare, the combination of pure open access and trade liberalization may both reduce welfare and stocks for a country. However, trade liberalization may have an additional positive impact by promoting the development of property rights in response to increased fish exploitation. The WTO can play a role by adopting a broader classification of subsidies to help eliminate bad subsidies, such as public support of vessel construction, fuel subsidies, or fishing rights outside developing coastal countries provided at limited or zero cost. The WTO can also assist by distinguishing good subsidies (e.g., improving fisheries management or improving monitoring and enforcement), which are desirable targets when rich countries allocate aid resource to developing countries.58

Joao Amador, Sonia Cabral (2008) analyse the evolution of Portuguese market shares in world exports over the 1968-2006 period, in comparison with other Southern European countries. The researchers have used constant market share methodology as proposed by Nyssens and Poullet (1990). The study reveals that over the last forty years, the rate of change of Portuguese exports was slightly higher than that of total world exports, leading to an average annual increase of total market share of 0.4 per cent. This evolution contrasts with the ones observed in Ireland and Spain, whose shares in world exports had an average annual growth of 3.8 per cent from 1968 to 2006. It is possible to identify periods with distinct evolutions of Portuguese export market shares, corresponding to diverse shocks to the economy, different

macroeconomic regimes and progressive economic integration with the European Union. A decline of total Portuguese market share is visible in the first five-year periods beginning from 1968 to 1976. Conversely, the following three periods (1977 to 1991) are characterized by an overall increase of market share. Finally, in the last three periods from 1992 to 2006 there is a gradual reduction of total Portuguese share in world exports. Changes of a country’s market share in world exports were found to be the result of many interrelated factors. Firstly, domestic and external macroeconomic developments influence the relative price/cost competitiveness of exports. Secondly, long term structural factors like the endowment of productive factors, technology and institutional background affect overall competitiveness and the sectoral specialization of exports. Thirdly, geography and cultural linkages condition the performance of exports and its distribution among different trade partners. Fourthly, the dynamics of international trade flows determined, in part, by the entrance of new players, mechanically affects individual countries’ market shares.59

Karnool N N et al (2007) study the growth in exports, economics of production and global competitiveness of groundnut from 1984-85 to 2004-05 for Karnataka. The study analyses the global competitiveness in groundnut and economies in its production over a period of time. Using the growth functions, tabular analysis, Nominal Protection Coefficient (NPC) and Domestic Resource Cost(DRC) the study finds that quantity of groundnut export has grown annually at a compound rate of 9.52 per cent per annum whereas the value of the same has grown at a much higher rate of 13.13 per cent. Structural changes in the quantity and quality of inputs associated with the technological process and also due to their prices Groundnut has shown competitive disadvantage during pre WTO period, and the international competitiveness has increased during post WTO period due to fertilizer subsidy, decontrolling of phosphetic fertilizers and constant prices of groundnut. The study suggests that as Karnataka enjoys export competitiveness in groundnut, the state government should make efforts

to increase the production and productivity of groundnut and other oilseed crops and enhance the exports of groundnut.  

**Surabhi Mittal, (2007)** examine the effects of domestic market intervention and export subsidies by rich countries on the welfare of the producers specially the small farmers in developing countries especially India. The study analyses (i) the estimation of the world price effect of removal of OECD (Organisation for Economic Co-operation and Development) distortions; (ii) estimation of the effects of changes in world prices on domestic prices through a price transmission model; (iii) estimation of the impact on domestic production through a supply response model; and, (iv) the estimation of changes in supply and welfare on the poor small farmers. It is found that because of elimination of subsidies in OECD countries the world crop prices are expected to rise. India's domestic price response to this world price change is very small for rice and wheat and slightly better for cotton and sugar. With reduction in subsidies and rising of the world price, the production in OECD countries would decline, but its effect on India's production is not very clear. Due to the response to the rise in world price, there is negligible impact on India's production for rice and wheat and a marginal increase in the production of cotton and sugar. Developed countries' policies of protecting their farming sector have affected the lives of billions of people who depend on agriculture in developing countries.  

**Hosamane et al (2006)** examine the export behavior of principal commodities during pre and post reform period using the Constant Market Share Analysis. Using the data from 1990-91 to 2003-04 the study finds out that total value of export has registered substantial increase but the share of primary sector was constant during the first three years and decreased in subsequent period. During the last three years the share has declined to a considerable extent. Openness has led to increase in the volume of


country’s trade with the world. However, negative growth rate is observed in terms of primary products.62

Kumar N R and Others (2005) study the Impact of WTO on Potato Export from India. The study has indicated a declining export competitiveness of Indian potatoes in the post-WTO era. The secondary data from 1988 to 2001 collected from FAO. Using the coefficient of variation around the trend line, a comparison of pre WTO and post WTO reveals that the export competitiveness of Indian potatoes have declined in the post WTO era. There is high level of instability in potato export from India during both the periods. This requires attention of the policy makers and researchers. Frozen potatoes export from India has shown competitiveness during the same period, this can be used for expanding the markets by encouraging big export houses in potato export and establishing a ‘Potato Board’ which will look into various aspects of potato export from the country.63

Mallik Jayant Kumar (2005) explores the growth performance of Indian export from 1951 to 2004. The study finds utility of the prevailing export promotion schemes, for making India’s exports competitive in the international market. The appreciation of the rupee vis-à-vis the US dollar raises concerns regarding its adverse consequences on export performance. There is a positive association between exchange rate movements and exports. There are compositional changes within agricultural products group. The combined share of nine major traditional items (basmati rice, tea, coffee, tobacco, spices, cashew, oil meals, marine products and raw cotton) declined to 56 per cent in 2003-04 from 84 per cent in 1990-91, while the share of non-traditional items increased. The food grains segment has attained the maximum gain. India’s global share in these items has increased. The paper argues for a reorientation of India’s export strategy.64


Michel B. (2005) analyses the trends between 1991 and 2001 in the world export market shares of the BLEU (Belgium-Luxembourg Economic Union) and a sample of other countries including among others the Member States of the European Union (EU) using Constant Market Shares Analysis (CMSA) to changes in the world export market shares of BLEU countries for the sub-periods 1991-1997 and 1997-2001. Between 1991 and 1997, most of the European countries had to put up with a decline in their world export market share. CMSA reveals that this decline was caused either by a fall in individual market shares or by an unfavorable market specialisation of their exports. It is striking to see that for all European countries the market specialisation of the exports contributed to reducing their world export market share. The commodity specialisation had a rather limited impact on this share for the vast majority of European countries in the sample. The results of the CMSA are rather different for the four non-European countries (Canada, United States, Japan and the Asian NICs (Newly Industrialized Countries - Hong-Kong, Singapore, South Korea, Taiwan, Malaysia, Thailand, Philippines, Indonesia) during 1991-1997. The dominant pattern is that although they suffered losses due to the ‘market share effect’, which can to some extent be linked to competitiveness, they were able to increase their world export market shares due to both the market distribution and, albeit to a lesser extent, the commodity distribution of their exports.65

Kumar Anjani (2004) study the Fisheries exports from 1981 to 2000 using the data on the value of exports and imports of fish products for India and the world collected from Directorate General of Commercial Intelligence and Statistics and Food and Agriculture Organisation of the UN Trade Yearbook. The export basket of fisheries products has become reasonably diversified. The study uses the Ordinary Least Squares (OLS) method in log-linear form and Reveal Symmetric Comparative Advantage Methods. The findings of the study reveal that Export of frozen fish recorded the highest annual growth but shrimps and prawns constituted the major category of exports, capturing an impressive growth rate of 5 per cent of the world export market. Trade reforms of the 1990s seem to have further facilitated the export of fish and fish

products from India and the feared import surge after the opening up of the economy is still not visible. Measures of relative competitive advantage reveal that India has become reasonably competitive in recent years but it must vigorously take up various sanitary and phyto-sanitary measures, consistent with WTO guidelines, in order to give exports a further boost. However, there is a concern that these measures are being increasingly promulgated with the deliberate purpose of shielding domestic producers from international competition.66

Piero Conforti et al (2004) in their study assess the impact of reducing and/or eliminating EU export subsidies within the next WTO round. The Global Trade Analysis Project (GTAP)67 model and database are employed to study the effects of the two main proposals put forward on this matter by the EU and the U.S. Results of the simulations confirm the common knowledge that the elimination of EU export subsidies would bring about increases in prices, exports and production for several net exporters of agricultural products. At the same time, such effects are all relatively small in size, particularly the effects on trade, production and welfare, even under the more radical scenario that simulates the elimination of export subsidies. Despite the fact that some net importing countries would suffer from a more expensive import bill, benefits may arise for some of them in terms of incentives to substitute domestic production for imports. This is the case in the Mediterranean region, and to a lesser extent sub-Saharan Africa. The study reveals that the elimination of EU export subsidies would bring about price increases, more market opportunities and increased agricultural production primarily for countries like Brazil, Argentina, Australia and New Zealand, and the Cairns Group in general that are currently operating close to world market conditions. Products involved are sugar, dairy, cereals, rice and meats. Further, the sizes of the effects on all important economic variables would be relatively small, as changes range more or less from 5 percent to 10 percent; nonetheless, they tend to increase. Within this group of countries there are specific sectors for which domestic prices would


67 Global Trade Analysis Project is a global data base describing bilateral trade patterns, production, consumption and intermediate use of commodities and services.
decrease, especially in a scenario simulating the U.S.–Cairns Group proposal and when this proposal is assessed against the 2010 baseline. A possible explanation for this outcome is that within the same group of countries that are pushing for the elimination of export subsidies, the degree of competitiveness is variable enough to allow for some to gain a competitive position compared to others.68

Sananse et al (2004) in the study of export scenario of Indian basmati rice in the post WTO era examine the trends in the export of basmati rice, effect of globalisation of the economy and effect of fluctuation on export of basmati rice from India. They worked out compound growth rate analysis by using the secondary data from 1993-94 to 2001-02, collected from the APEDA website and other related sites and reports. The study reveals that there is year to year variability in the export of quantity of rice and the value received during post GATT period. However, the export earnings have almost doubled.69

Sachdeva J K, (2003) analyses domestic, international and realized export unit prices of twelve agricultural commodities to see whether export quantity of Indian agriculture products is dependent on international prices or domestic prices, whether we produce surplus to export. Some economists, who favoured free trade, had predicted that world prices would increase after Uruguay Round agreement and with establishment of WTO. The findings of the study reveal since 1995, world whole sale prices of commodities are falling at the rate ranging 1 to 17%. Secondly Indian commodity prices are rising at the rate of 1 to 7%. Minimum support price in India given to some commodities is rising at the rate of 5-7%. The trend growth of agricultural commodities prices appear to be same as rupee devaluation. As the rupee depreciates, the domestic whole sale prices are appreciating, this in turn affects our competitiveness. Price rise equivalent to the rate of rupee depreciation cannot be ignored.70

Sananse et al (2003) examine the export of fruits and vegetables in the post WTO era. Using the export data from 1993-1994 to 2000-2001 collected from APEDA website and reports of agro processing food technology vision 2020: fruits and vegetables current status and vision, growth and instability analysis is conducted. Due to diverse agro climatic zones it is possible for us to grow a variety of fruits and vegetable in India. Several Indian fruits and vegetables have made significant contribution to the world production of fruits and vegetables. The findings of the study reveal that from 1993 to 1995 the growth is 20 per cent whereas from 1995-96 to 2001-02 it has increased by more than three times due to post WTO policies. Instability indices for export value reveals exports have increase but it is not stable. The instability is more for the processed fruits and vegetables.71

Hugar L B (2002) uses the Markov Chain Approach to analyze Onion Export Markets and its Stability for increasing India’s exports. The study uses Annual published data on exports of onion by Directorate General of Commercial and intelligence Service, Kolkata in various volumes of “Monthly Statistics of Foreign Trade of India from 1991-92 to 1998-99. There are six major countries importing onions consistently from India namely Malaysia, Sri Lanka, Singapore, UAE, Saudi Arabia and Bangladesh. Using the Markov Chain Approach the study finds that UAE and Malaysia are the regular markets for Indian onion exports. There is a need to explore the markets in other countries by popularizing Indian fresh onion through the use of information technology, exhibitions etc. the study stresses that for capturing the higher share in the world trade, there is a need to improve the quality , cost efficiency, packaging and simplification of export procedures. The study also reveals that adhocism followed by the Government of India in its export policy is hindrance for the export growth.72

John K C (2002) presents an exploratory study on production, import and export of cashew from India using the data from 1990-91 to 2000-01, collected from Cashew Export Promotion Council of India. India is the world’s largest producer of cashew, but needs to fully utilise and expand its potential if it is to keep pace with growing global


demand and stay ahead of the rapidly emerging competition in this commodity. India needs to evolve drought-tolerant varieties and technologies capable of harnessing environmental resources of the less endowed areas. Between 1990 and 2000, the area under cashew cultivation has declined in some parts of the country, such as Kerala and Tamil Nadu, while it has increased considerably in other cashew-cultivating states in India. There is a high degree of inter year fluctuations in production, directly depending on existing climatic conditions, which results in wide price variations of raw cashew nuts.

In the absence of direct procurement of raw cashew by government agencies, farmers are not getting good prices for their products. Since cashew is a product traded in the international market, farmers and small traders cannot analyse the exact demand and price of raw cashew nuts and kernel in the market. An extraordinary price rise in the international market results in shifting of consumer preference to other types of nuts. Indian packing standards are not as per international standards which affect marketing of cashew. Modern processing techniques to extract oil should be adopted in the processing of raw cashew nuts. Market information system should be strengthened. The government of India should encourage the cultivation of cashew in wastelands and roadside vacant lands including national highways. A separate cashew development board should be set up so as to enhance the cultivation of raw cashew nuts and increase production and export of cashew kernel. Exporters should be encouraged to concentrate on producing and exporting more value added items. This will help to increase the quantity and value of exports from the state. 

Kumar, K. N. R., et al (2002) have analyzed the growth in agricultural exports from India from 1991 to 2000; the commodity-wise shares of agricultural exports in world exports and in India's total exports; the trade performance of Indian agriculture; and the export competitiveness of agricultural commodities in the international market. The study concludes that the share of agricultural exports in total exports of the country does not indicate any significant acceleration even during the structural reforms period. Hence, it is high time to encourage the agricultural exports from India so as to earn major share in total exports of the country and also in world's exports as the export-led

growth is the key to achieve progress in the free trade regime. If India has to emerge as a major player in the international agricultural market, its attention has to be concentrated on these commodities which are having more comparative advantage. Similarly, other measures such as setting up of agro-processing industries, packaging technology, market information network, development of pests and disease resistant varieties through the application of bio-technology, proper advertisement in the international market etc., needs to be given their due attention. Export Promotion Organization and WTO cells should be established in each state of the country and they should to be entrusted the responsibilities of studying the export competitiveness of agricultural commodities periodically, drawing safe-guard measures to protect the interests of Indian farmers from time to time etc.74

Sevela M (2002) in his article concentrates on the application of gravity-type model to explain the volume of agro-exports from the Czech Republic. The multiplicative exponential function of the appropriate explanatory variables is used to describe the bilateral trade flows. Gross national product, gross national product per capita and geographical distance between the capitals of economies proved statistically significant. From regression analysis of the transformed data, there is apparent the positive correlation between the export volume of food and live animals and gross national income. On the contrary, the negative correlation is between the agro-export volume and gross national income per capita and geographical distance as well.75

Singh Rakesh (2002) studies India’s options and interests with respect to Agreement of Agriculture and role of government in making farmers realize the benefit of the new agricultural regime under WTO. The author describes the AOA and progress made by India under three basic clauses of AOA namely, market access, domestic support and direct export subsidies, Intended benefits for Indian Agriculture, India’s response from Marrakesh, negotiating strategy for India in future rounds of trade. He suggests that first internally liberalise and support the agriculture. The supply response to price in Indian agriculture is very low. Investment in agriculture is on the decline. This has


affected backward regions. Fall in investment accompanied by rising share of subsidies in the plan outlay has increased the public investment. But there is fall in productivity enhancing expenditure. Thus there is a need to redirect subsidies into productive investment and liberalize Indian agriculture from the state control. Prices should be market determined.76

Kumar Anjani (2001) examines - the magnitude of growth and instability in agricultural trade, the temporal changes in the commodity composition of exports of the agricultural sector and the changes in the indicators of agricultural trade of India. The study is based on time-series secondary data pertaining to the period 1960-97. The coefficient of variation of the moving average was computed to examine the magnitude of instabilities. The study reveals that the policy of trade liberalization has provided impetus for agricultural trade in recent years and agricultural exports were less unstable than agricultural imports. Although both agricultural and non-agricultural exports witnessed rising trends, the former recorded a higher growth rate after the initiation of the reforms. There do exists opportunities for deriving large benefits through a massive increase in agricultural exports. The challenges lie in generating the surpluses not only through increased public and private investment in rural infrastructure, research and development, new technology and market infrastructure, but also in involving the mass of peasantry including small and marginal farmers and landless agricultural labourers in all parts of the country in the development process.77

Nilanjan Banik (2001) identifies a set of factors that appear to be responsible for a significant decline in India’s export growth during the post-reform era. The study examines possible impediments for high export growth in a sustained manner. The decline in Indian exports during 1996-97 was mainly due to a fall in the growth rate of export volumes. This analysis brings out the nature of demand-side factors, as against supply-side bottlenecks, that have constrained the growth of exports from India. However, easing of supply-side constraints too would have aided the revival of export growth. Indian agricultural exports are affected by the Non trade barriers like


quantitative restrictions, sanitary and phyto-sanitary sanctions. These are standards set by any nation to safeguard the health of its consumers. Many Indian exportable are now facing blockade by such health or environment-related sanctions. Many countries are setting their health standards at a level higher than that prescribed internationally.78

Athukorala (2000) studies the role of Uruguay Round of Agreement on Agriculture in agriculture trade policy reform in South Asia and policy options for the future reform agenda of the World Trade Organization. A key policy inference is that, to be effective, planning for freeing agriculture should involve simultaneous reforms of import and export regimes, and domestic production support mechanism. Policy related to lending in particular provision of financial support for social safety programs, can play an important role in making such comprehensive reforms politically palatable and feasible. While overloading the WTO with matters that fall beyond its purview may be counterproductive. There is certainly a case for coordinated effort involving the WTO and international development finance institutions. Studying the pattern of agriculture trade in India, Bangladesh, Pakistan and Sri Lanka, structure of agriculture protection at the time of signing URRAA, taking into account the share of major commodities export in the world trade from these countries, the researcher chronologically lists the trade policy shifts the study finds that in all the four countries agricultural trade liberalization is lagging behind the intensity of the overall trade liberalization. India’s bound rates79 are high and India has not yet come up with the concrete plans for the removal of non-price restrictions. Various domestic production supports and quantitative restrictions on exports are prominent elements of continuing disarray in agriculture in India.80

Mitchell et al (2000) in their working paper evaluate South Africa’s trade performance in three essential markets, namely United States, Europe and Japan. They examine the nation’s flexibility in the face of fluctuations in relative exchange rates in its markets.


79 Bound rates are the maximum tariff rates, which a country can charge on imported products under its WTO commitments.

Using the Constant Market Share (CMS) model of international trade and the "Rising Stars" model, the particular areas of industrial structure in which South Africa is positioned to succeed are identified on the market as well as the product levels. Success in the modern competitive global village requires revealed flexibility to rapidly changing market conditions. The CMS Model is an especially useful empirical tool that allows us to examine the nature and sources of changing international competitiveness. It reveals whether (and in which product groups) South Africa was able to competitively increase its exports above and beyond constraints set by external demand factors. In terms of this model, a country is regarded as doing well if its exports grow in line or faster than the export growth in the market. This empirical model is used to assess South Africa's export performance in total, and various subsets of manufacturing exports. Later in the paper, the CMS tool is discussed along with an explanation of the methods of its use for the purposes of this study. Finally the third section combines the previous two, and explores the relationship between the international exchange-rate flexibility, with the revealed CMS international competitiveness.

The study uses data related to exports and imports from eight major OECD countries (six from Western Europe – the original E.E.C. including UK) plus the U.S. and Japan, as well as "World"; and then separately, exports and imports to and from South Africa for the years 1992 to 1999, collected mainly from the COMTRADE data set, compiled and maintained by the United Nations Statistical Office in New York. Each year's data includes, in thousands of $U.S. values for 101 manufactured traded commodities, ranging from Standard International Trade Classification (SITC, Rev 1) categories 5 through 8. The advantage of using Rev. 1 is that it renders this dataset consistent with historical data, thus allowing for long term analyses. The second set of data used consists of annual macroeconomic variables, including exchange rates, whose source is the International Monetary Fund's International Financial Statistics. This study focuses on two methods that may help us identify key elements, shaping South Africa's performance in the critical and growing sector of manufacturing exports. The analysis is focused on the major industrialized country markets, since South Africa does not enjoy any particular preferences here, and therefore its successes (or failures) in these markets may be clearly be associated with comparative advantages, and the ability to compete head to head with the world's low cost manufacturers. Supply rigidities, such as a relative lack of price responsiveness in international markets may prove important
in explaining the general failure to maintain market shares in manufactured imports into the OECD markets during last decade of the 20th century. The results obtained via regression analysis indicate that indeed South Africa failed to demonstrate a "rational" responsiveness in market targeting to changes in relative market exchange rates in its manufactured exports. However, in a few, relatively non-traditional subsets of manufactures this was not the case. The study demonstrate the nature of the loss of market shares, and attribute it primarily to the second half of the decade, and primarily to internal policy or structural causes, rather than external factors associated with negative environmental factors. \(^{81}\)

**Murthy and Subhramanyam (1999)** in their study have used Cuddy Della Valle Index for the period from 1970-71 to 1994-95. They find that the instability of fresh onion export from India was 55.54 and 22.61 per cent in terms of quantity and value terms, respectively. They further found that liberalisation policies coupled with opening up markets are probably the main reason for higher growth in onion export during 1990s compared to 1970s and 1980s.\(^ {82}\)

**Singh J, (1997)** in his paper related to export performance of Indian agriculture in the post liberalized period takes a commodity wise review of agricultural exports. The researcher analyses the compound growth rate and trends from 1991-92 to 1995-96 for rice, wheat, floriculture, fruits and vegetables, processed products, cotton, milk, milk and milk products, poultry products, tea and coffee, sugar, tobacco, pulses and oilseeds and seeds. The findings of the study reveal that exports of Indian agricultural commodities have been rising steadily for the past few years, but the export is mainly in the bulk without any brand names. The Darjeeling tea, durum wheat, non-basmati and basmati rice and even spices are sold unbranded. Grading and packing in proper form and in quality demanded by the consumers could enhance the value of the products. To explore the consumers’ preference in world market, proper processing in the ready to eat food is essential. The export directly from the production centre by

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quick and cheap transportation is of paramount importance, the salesmanship through advertisement, participation in trade fairs and demonstrating the product from time to time are essential features of good marketing. The Indian population settled in rest of the world can act as a catalyst in this regard.83

Prasad (1994) in his study related to impact of GATT on India's Agricultural exports has identified the some of the neglected areas of research like acquired comparative advantage, terms of trade, identification of future markets and other issues like effect of sanitary and phyto-sanitary conditions, seed patenting etc. The study finds out that India needs to prepare itself for attaining the comparative advantage and in future negotiations there is a need to negotiate on an upper limit for food security and disguised subsidies. Further, the repercussions on domestic terms of trade due to rise in the prices of agricultural commodities can improve the domestic terms of trade of agriculture vis a vis the manufacturing sector and service sector.84

Pranab K B (1994) examines some basic impediments that come in the way of export of agricultural products. Though India's production scenario of agriculture has significantly improved despite inadequate storage facilities, the prime hurdle in the way of export is port and shipping infrastructure. Further there are inadequate facilities for the bulk movement of food grains in the country, i.e., rail and road transport. The study concludes that port facilities must be given an immediate attention and suggest that increase in transport efficiency and mechanisation of ports will be cost effective. The private sector is getting involved in ports. The authorities of surface transport, port authorities, trade, commerce and agriculture should come together to solve the infrastructural problems of export of food grains.85


Reddy V R and others (1992) examine the export performance of Indian agriculture since 1960. Times series data for 26 years from 1960 to 1985 is collected from FAO Trade yearbook, FAO yearbooks of production. The study estimates the net export supply functions using the export prices, domestic prices, total domestic production, per capita availability, GDP at factor cost and exchange rate in terms of rupee per dollar. Estimate of net supply function is carried out for the seven specific commodities – rice, wheat, sugar, tobacco, cotton, jute and tea. The auto regressive distribution lag formulations are followed while estimating the supply functions and the appropriateness of the models is tested with the help of the Box-Pierce-Ljung Portmanteau statistic. The findings of the study are: (i) the share of agriculture export has been declining over the period due to stagnant output, (ii) low yield rates and non-competitiveness in the world markets; (iii) instead of new exportable commodities traditional exports are dominating the agriculture export; (iv) trade policies of India follow import substitution rather than export promotion; (v) internal factor like production and per capita availability play an important role in determining the net exports; (vi) external factors like prices and foreign exchange rate appear to be less important; (vii) commodities that have good demand in the international market are used as shock absorbers for the balance of payments position; and (viii) more concentrated efforts should be made to produce and export more of the commodities like tobacco and cotton for which India enjoys comparative advantage.86

Pal S (1992) examines agricultural exports of India by using time series data pertaining from 1970 to 1989, collected from FAO Trade yearbook, Agricultural prices in India and economic survey. Commodity wise annual compound growth rate is calculated and log linear export turnover function is estimated. For measurement of instability in the time series, three year moving average and coefficient of variation are computed. The findings reveal that for coffee, oilcakes and cotton lint, the quantum of export has increased. The earning from agricultural exports rose because of an increase in the unit value and the export of non-traditional products. The export of agricultural products is largely influenced by domestic production and surplus remained after meeting domestic demand. The low instability for total agricultural exports and high instability for

various product groups indicate that the diversification in agricultural exports has a strong stabilisation effect on the total export earnings. The volatile world prices and policy changes have induced a very high degree of instability in the export earnings from important products. Export promotion rather than export stabilisation needs priority. Efforts are required in increasing the efficiency and productivity in agriculture for generating surplus for export.87

Kim Jensen and Davis George, (1998) identify barriers perceived by agricultural exporters and examine how these perceptions influence export market strategies in USA. The study explores the Relationship between alternative export market strategies and the potential barriers faced by High Value Product (HVP) agricultural exporters. Ordered logistic or profit models are used to estimate effects of perceived barriers and firm characteristics on export market strategies. The results from these models show that perceptions about import restrictions influence diversification of exports across products, competition influences use of competitive export pricing, and overseas product regulations affect product adaptation for export markets. Larger firms (as measured by sales) are more likely to diversify exports across a wider array of products. Moderately sized firms (as measured by sales) are less likely to compete on the basis of price than smaller firms. Study indicates that exporters of HVPs with more years of business experience are more likely to diversify exports across products and to specially tailor advertising.88

Roman I. Bairak and David W. Hughes (1996) study the impact of agricultural exports on the Louisiana economy using a revised or also known as hybrid input-output (I-O) model. An I-O model of the 1985 Louisiana economy built with the IMPACTPLANning model building system is used in this study. Using the Standard Industrial Classification (SIC) sector codes, on agriculturally based products classified as production agriculture (SIC 01 and 02), processed foods (SIC 20), wood and lumber (SIC 24), and pulp and paper products (SIC 26). The value of all agricultural commodities shipped through the New Orleans Customs District for 1989 through 1992


A telephone survey of major agricultural exporters in Louisiana was conducted to obtain the percentage of agricultural exports going through Louisiana ports that originated there. A stratified random sample, based on the four-digit Standard Industrial Classification (SIC) code, was used to ensure coverage of all agricultural exports. The impact analysis for Louisiana agricultural exports had two basic components. One part was the direct effect of current export levels in 20 agriculture related industries. The second part was the direct effect in the three trade and transportation sectors of motor freight transportation and warehousing, wholesale trade, and water transportation. This is due to shipping through state ports. The impact analysis simulated the total effect of exports for agricultural products, including the three margin industries.

Azhar Mahmood and Naeem Akhtar (1996) use the Constant Market Share Analysis of export growth to capture the world trade effect, the commodity composition effect, the market distribution effect and the competitiveness effect for the periods: 1984-85–1988-89 and 1988-89–1992-93. The results show that Pakistan has maintained its export share in the world market. The market distribution and competitiveness of Pakistani exports have improved significantly between the two periods under study. However, the concentration of Pakistani exports into traditional commodities, whose world demand remained sluggish, has offset the positive contribution of effective market distribution and improved competitive strengths to a large extent. A restructuring of exports (from traditional to non-traditional), an increase in the variety of exports, search for new fast growing markets and an improvement in the economic and political environment are suggested measures to enhance the export growth of Pakistan in future.


Some of the significant observations from the studies reviewed in this section are briefly presented as below-

The WTO can play a role by adopting a broader classification of subsidies to help eliminate bad subsidies, such as like public support of vessel construction, fuel subsidies, or fishing rights outside developing coastal countries provided at limited or zero cost.

- India must vigorously take up various sanitary and phyto-sanitary measures, consistent with WTO guidelines.
- Adhocism followed by the Government of India in its export policy is hindrance for the export growth.
- Indian agriculture needs domestic support and liberalisation prior to support under AOA.
- There is a need to redirect subsidies into productive investment and liberalize Indian agriculture from the state control. Prices should be market determined.
- Instead of new exportable commodities, traditional exports are dominating the agriculture export.
- Import restrictions influence diversification of exports across products, competition influences use of competitive export pricing, and overseas product regulations affect product adaptation for export markets.
- For coffee, oilcakes and cotton lint, the quantum of export has increased. The earning from agricultural exports rose because of an increase in the unit value and the export of non-traditional products.
- Export of frozen fish recorded the highest annual growth but shrimps and prawns constituted the major category of exports, capturing an impressive growth rate of 5 per cent of the world export market.

2.3. Summary and Conclusion

The major findings from the reviewed studies are presented in table 2.1.
<table>
<thead>
<tr>
<th>Sr No</th>
<th>Author and year of study</th>
<th>Method used</th>
<th>Major Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Noelia Jiménez and Esther Martín (2010)</td>
<td>Constant market share analysis</td>
<td>• Competitiveness had a very mixed effect on the euro area countries.</td>
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<td>3.</td>
<td>Deshmukh (2009a)</td>
<td></td>
<td>• Export of horticulture corps increased significantly in the post WTO period</td>
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<td>4.</td>
<td>Deshmukh (2009b)</td>
<td>Nominal Protection Coefficient, Domestic Resource Cost and Compound Annual Growth Rate</td>
<td>• Indian mango was competitive till 1995-96 (highly competitive in 1991-92 to moderately competitive during 2005-06), thereafter it has become uncompetitive.</td>
</tr>
<tr>
<td>5.</td>
<td>Kumar N R, et al (2009)</td>
<td>Export performance ratio and RCA</td>
<td>• India is highly competitive in export of cucumber and gherkin and has ample scope to further increase its export</td>
</tr>
<tr>
<td>6.</td>
<td>Goyal and Gupta (2009)</td>
<td>Instability index</td>
<td>• Better performance of fresh fruits and vegetable in the post reform era compared to pre reform</td>
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<td>7.</td>
<td>Shinoj P et al (2009)</td>
<td>Cuddy and Della value index</td>
<td>• The sanitary and phyto-sanitary Agreement and technical barriers to trade has been acting as a strong non-tariff barriers to trade, • Due to inadequate infrastructure, processing, packaging and grading facilities and lack of proper attention towards hygiene practices Indian fisheries consignments are rejected innumerable times.</td>
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<td>8.</td>
<td>Burange L. G. &amp; Sheetal J. Chaddha (2008)</td>
<td>Revealed Comparative Advantage</td>
<td>• India has comparative advantage in the exports of goods which use natural resources for their production and goods produced using standard technology and are characterized by lower costs in R&amp;D</td>
</tr>
<tr>
<td>9.</td>
<td>Shinoj P et al (2008)</td>
<td>Revealed Comparative Advantage</td>
<td>• India has been able to maintain comparative advantage in commodities like cashew and oil meals, but tea, coffee, spices, marine products have been negatively affected.</td>
</tr>
<tr>
<td>No.</td>
<td>Author(s) (Year)</td>
<td>Methodology</td>
<td>Findings</td>
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<tr>
<td>11.</td>
<td>Mittal (2007)</td>
<td>Nominal protection coefficient and revealed comparative advantage</td>
<td>• There is need for a comprehensive strategy for increased production of quality dairy products and intensification of efforts for diversifying the export basket towards whey based products, dairy spreads, butter oil, processed and powdered cheese and fermented products.</td>
</tr>
</tbody>
</table>
| 13. | Goyal S K et al (2000) | Compound growth rates and instability indices | • There is a decline of agricultural exports in the composition of total exports of India and commodities like tea and mate, cashew kernels, spices and coffee were the dominant exportable items during 1970’s but their share had declined later on.  
• During the 90’s marine products, oil cakes rice, fruits etc., were found to have potential for export earnings.  
• The share of our agricultural export in world exports although is very low but is increasing over the years competing with other countries. |
<p>| 14. | JhaBrajesh (2002) | Ordinary Least Square (OLS) | • Domestic price and world market size are strong determinants of the tobacco export of India. |
| 15. | Kaushik K K et al (2000) | Exponential time trend | • The low export instability index for agricultural and allied product together with high instability of index for cash crops is an indication of diversification in agricultural export |
| 16. | Kutty P U (1999&amp;2000) | linear regression model | • Indian tea export is not competitive in terms of price in UK, the Netherlands, Canada and Australia and thus experienced a decline in these markets. |
| 17. | Karnool N N et al (2007) | Nominal Protection Coefficient | • Groundnut export from Karnataka has shown competitive disadvantage during pre WTO period, and the international competitiveness has increased during post WTO period due to fertilizer subsidy, decontrolling of phosphetic fertilizers and constant prices of groundnut. |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Author(s)</th>
<th>Methodology</th>
<th>Key Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.</td>
<td>Hosamane et al (2006)</td>
<td>Constant Market Share Analysis.</td>
<td>• Openness has led to increase in the volume of country's trade with the world. However, negative growth rate is observed in terms of primary products</td>
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<td></td>
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<td>• Frozen potatoes export from India has shown competitiveness during the same period.</td>
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<td>• It is caused either by a fall in individual market shares or by an unfavorable market specialisation of exports.</td>
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<td></td>
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<td></td>
<td>• India must vigorously take up various sanitary and phyto-sanitary measures, consistent with WTO guidelines.</td>
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<td>22.</td>
<td>Piero Conforti et al (2004)</td>
<td>Global Trade Analysis Project (GTAP) model</td>
<td>• Elimination of EU export subsidies would bring about price increases, more market opportunities and increased agricultural production primarily for countries like Brazil, Argentina, Australia and New Zealand, and the Cairns Group in general that are currently operating close to world market conditions. Products involved are sugar, dairy, cereals, rice and meats.</td>
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<td>23.</td>
<td>Sananse et al (2004)</td>
<td>Compound growth rate analysis</td>
<td>• There is much year to year variability in the export of quantity of rice and the value received during post GATT period but the export earnings have almost doubled.</td>
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<td>24.</td>
<td>Sananse et al (2003)</td>
<td>Instability indices</td>
<td>• From 1993 to 1995 the growth is 20 per cent whereas from 1995-96 to 2001-02 it has increased by more than three times due to post WTO policies.</td>
</tr>
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<td>25.</td>
<td>Hugar L B (2002)</td>
<td>Markov Chain Approach</td>
<td>• UAE and Malaysia are the regular markets for Indian onion exports.</td>
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<td></td>
<td></td>
<td></td>
<td>• Adhocism followed by the Government of India in its export policy is hindrance for the export growth.</td>
</tr>
<tr>
<td>26.</td>
<td>Sevela M (2002)</td>
<td>Gravity-type model and Regression analysis</td>
<td>• There is positive correlation between the export volume of food and live animals and gross national income of Czech</td>
</tr>
<tr>
<td>No.</td>
<td>Author(s)</td>
<td>Methodology</td>
<td>Findings</td>
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<tr>
<td>27.</td>
<td>Nilanjan Banik (2001)</td>
<td>Coefficient of variation of the moving average</td>
<td>• There exists opportunities for deriving large benefits through a massive increase in agricultural exports.</td>
</tr>
<tr>
<td>28.</td>
<td>Reddy V R and others (1992)</td>
<td>Auto regressive distribution lag formulations</td>
<td>• Low yield rates and non-competitiveness in the world markets; • Instead of new exportable commodities traditional exports are dominating the agriculture export.</td>
</tr>
<tr>
<td>29.</td>
<td>Pal S (1992)</td>
<td>Instability index</td>
<td>• For coffee, oilcakes and cotton lint, the quantum of export has increased. The earning from agricultural exports rose because of an increase in the unit value and the export of non-traditional products.</td>
</tr>
<tr>
<td>31.</td>
<td>Azhar Mahmood and Naeem Akhtar (1996)</td>
<td>Constant Market Share Analysis</td>
<td>• The concentration of Pakistani exports into traditional commodities, whose world demand remained sluggish, has offset the positive contribution of effective market distribution and improved competitive strengths to a large extent.</td>
</tr>
</tbody>
</table>


In the present study researcher has expanded the scope of agricultural goods wherein 14 group of commodities i.e., cereals and cereal preparations, fresh and processed vegetable, fresh and processed fruits, pulses, tea, coffee, spices, cotton, marine products, meat and meat preparations, poultry and dairy products, tobacco, Oil cakes, oil and oil seeds and Sugar and molasses is included for the analysis using seventeen years data from 1991 to 2009. Further many studies like Nageshwara et al (2009), Shinoj P et al (2008), Sathe D and R S Deshpande (2006) Singh and Goyal (2004), Goyal S K et al (2000) Kaushik K K et al (2000) are either using revealed comparative advantage method or the instability indices for analyzing the advantage of agricultural products in the international market. Kehar Singh et al (2003) study the prospects of agricultural exports of India using composite index approach. Anjani Kumar (2004) has used Ordinary Least Square for Indian fisheries. Hugar L B (2002) uses the Markov Chain Approach to analyze Onion Export Markets and their Stability for increasing India's exports. Present study uses compound annual growth rate and coefficient of variation for analyzing the growth in India's agricultural export along with percentage share. In light of the reviewed literature, it is concluded that Constant Market Share Analysis is an appropriate method for the analysis of the agricultural export performance is used for examining the performance of Indian agricultural export.