CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

In order to gain an understandings and insight on various issues parenting to study area a comprehensive study of research already done by researcher. This review of existing literature on the subject undertaken to identify gaps in existing knowledge based related of study. This facilitated appropriate identification of objectives for present study for purpose of reviewing existing literature, various journals, books, government reports a publication from libraries of different institutes and internet were widely accessed.

The reviews of past studies was undertaken and the same has been presented in following six sections, viz., i) Agriculture in India Trends and Instability ii) Study related Gujarat Agriculture iii) Study related to growth rate iv) Agricultural Trade Policy and Impact (v) WTO and Agriculture Trade and (vi) the gap studies. They are given in following paragraphs.

2.2 Agriculture in India Trends and Instability

Mathur, Das, and Sircar (2006) discussed trends in growth of agricultural production in India over the last one and half decade. The study identifies factors that affect agricultural growth and analyses constrains that have affected its growth in the sector. There has been a decline in growth rate of the agriculture sector during the 1990 till the recent past. This is accompanied with recent decline in yields per hectare for a number of food crops. There are vast inter-state differences in growth rate of agriculture and even more so for food grains. The analysis at the all India level for the period 1990-91 to 2003-04 suggests that government expenditure in agriculture including public investment and subsidy for fertilizer usage and electricity consumption for agriculture are the main factors affecting agricultural production in India. At the same time, the state – wise analysis from the panel regression result shows that the agricultural output at current prices is significantly and positively dependent on government expenditure on agriculture, fertilizer usage, rainfall and population.

Ray, (1983a), the magnitude of production instability is essentially a function of the environment which can be considerably molded through human efforts. The author suggested that causes for increase in production instability after adoption of green revolution technology
were (i) increase in the variability of rainfall and prices and (ii) increase in sensitivity of production to variation in rainfall, and not the growth in production. In another similar but more detailed study by Ray and two more authors it was found that amplitude of fluctuations in output for all categories of crops, except wheat, have increased significantly in the Chand and Raju., (2009) traces instability in Agricultural and food production is very much important for food management and macroeconomic stability. There was a high risk involved in farm production; it affects farmer’s income and decision in farming. Instability in area, reduction and yield of important crops and crop aggregates has been studied at national level as well as state level during different periods. These periods are clearly distinguishable in terms of major policy initiatives taken in the country and adoption of new agricultural technology. Further, the analysis is extended to disaggregate level using district level data for the state of Andhra Pradesh. As there are vast variations in agro climatic conditions across states and districts a disaggregate analysis reveals instability at micro level which is more relevant for producers and consumers.

Mahendradev, (1987), reported a progressive but marginal decline in instability in food grains production at all India levels were mixed results compare to state levels. Analyzed weather adjusted and unadjusted, growth rate in food grain output for all major states in the country. Based on the standard deviation in year to year change in output, the study concluded that there was a progressive but marginal decline in instability at all India level. At state level, there was decline in some cases and increase in some other states. Other important findings of this study relevant to the debate on instability were: after 1979-80 instability in food grain production at all India level dropped to 8.18 per cent but it showed only a marginal decline from 11.41 during 1960-61 to 1969-70 to 11.16 during 1970-71 to 1979-80. Though the decline after 1979-80 refers to a very short period (1980-81 to 1984-85) but it indicates that the instability could turn out to be different after the initial years of adoption of new technology. Second, as the conclusions of the study were different than the earlier studies the author felt these were due to differences in the selection of time periods.

Larson et al, (2004), conclude that green revolution has been instrumental in increasing production of food grains and other crops in India, but this has come at a cost of greater instability in production and yield. They also examined instability in area, yield and production for major crops in India by dividing the period 1950-51 to 2001-02 into a pre-green revolution (1951-1965) and post-green revolution (1968 - 2002) periods. The paper
reported that production instability for food grains had increased by 153 per cent and yield instability increased by 244 per cent between the two sub periods. Based on this the authors concluded that widespread adoption of green revolution technology increased instability in yield and production of food grains. There was a serious inconsistency in the results on instability in food grain production reported in this paper. While instability in production of cereals and pulses was reported to 5 per cent, respectively, the instability in the production of food grains, which is sum of cereals and pulses, was reported to have increased by 153 per cent in the same periods.3 Further, this study did not divide post 1968 period into sub periods to find out if there was any change in instability with progress of green revolution technology. The review of literature indicates that there is no consensus in the literature on changes in instability in agricultural production in different periods and there is a complete gap in research about the changes in instability of agricultural production in relation to progress in spread of new technology in the country.

Sharma et al, (2006), traces the production of individual crops and total food grains had become more stable during 1990’s compared to 1980’s. It did not cover pre green revolution period, findings of this study could not draw inferences on effect of green revolution technology on production variability.

Malik, et al , (2004), argued there has been a slow down in the growth rate of direct demand for food grains consumption on account of several factors. First the growth rate of population has decelerated to 2.16 percent per annum during 1991-2001 from 2.39 percent per annum during the earlier decade. Second, with rise in per capita income and changing tastes and preferences, the food basket is getting rapidly diversified. With such a diversification of consumption, the income elasticity of demand for food grains has declined perceptibly. The consumption patterns have been changing both in rural as well as in urban areas. The pattern of consumption of food grains over the years indicate a consistent fall in consumption of cereals both in rural as well as urban.

Srivastava , (2003) ,worked out compound growth rates of area, production and productivity of pulses in all the district of eastern Uttar Pradesh during 1975-76 to 1999-2000. The results revealed that area and production of pulses declined at the rate of 1.8 and 0.67 per cent per annum, but productivity increased at a compound growth rate of 1.18 per cent per year.
Sharma and Sharma, (2003), studied production and export performance of tea and reported that the growth rates were positive for area, production and productivity of tea. The share of Indian tea export in the total export was as high as 72.17 per cent in 1950, which had steadily declined to 23.79 per cent in 1999.

Malik et al. (2004), studied the trends prevailing in area, production and productivity of onion in world and India, and also analyzed the trend of export of onion from India. Compound growth rates were computed using the exponential form

\[ X_t = a \times b^t \]

Where,

- \( X_t \): Area/Production/Productivity/Export of onion in year \( t \)
- \( t \): Time
- \( a \): Intercept
- \( b \): Regression coefficient

The compound growth rate (\( r \)) given by

\[ r = (\text{Antilog of } b - 1) \times 100 \]

Chengappa, (1982), estimated the growth rate of area, production, yield of coffee in India calculated by exponential model of type \( Y_t = a \times b^t \) were used to work out the growth rate was 6 percent.

Velvan, (2004), reported that the world growth rate and productivity of cashew nut in pre-liberalization (1980-81 to 1990-91) was higher compare to the post liberalization (1991-92 to 2000-01) but in Indias post growth rate is higher (4 percent) than pre growth (1.5 percent) rate, Production growth is lower. The import growth rate (20.89) is higher than export growth of process groundnut (6.31).

2.3 Study related Gujarat Agriculture

Dholakia, (2010), workout Gujarat shows first time a statistically significant trend growth rate of 4.7 percent per annum with considerably low extent of fluctuation compared to previous decade. The last decade (2000-01 to 2009-10) shows further improvement in both the trend growth rate as well as lower degree of fluctuations raising the statistical significance level of the estimates. Gujarat shows consistently accelerating economic growth in real GSDP throughout the five decades. At a high growth rate of 8.1 percent during the 1990s, the
economy further achieved accelerating by 30 percent during the fifth decade of its independence.

Dholakia, (2007) Expresses a double digit growth of agriculture over last to 6 to 7 years is thus the true distinguishing feature of Gujarat’s economy. This is not to undermine the progress achieved in industrial, infrastructural and service sectors in the state however considerable amount of the growth in pulses have been released by a very buoyant growth in agriculture. There has been a significant energy and complementarities the state has been able to achieve the growth and development of various sectors fully exploiting the back ward linkages in the system.

Pathak & Singh, (2007), worked out the performance of production and productivity of important crops/ crop groups of the state has been analyzed using trends rates of growth (TRG) for the period from the advent of Green Revolution. As years 1968-69 and 1969-70 seem to be not normal, the same were dropped from the analysis of CGRs. Further the agricultural growth during the time series period 1970-2005 reveals distinct phases of development. Therefore, the series periods, viz., Green Revolution period of 1970 – 91, and the reform period of 1991-2005 for the purpose of analysis. During the period of reform, compare to the earlier period of GR, higher and significant growth rates were observed in the productivity of Jowar, bajra, maize, all cereals, all food grains, groundnut and sesame. Sugarcane productivity showed a negative growth rate of (-) 1.28 percent.

B. R. Shah, (2007) analyzed, the area soon under total food grain is 2.68 million hectors again the target of the 2.959 million hectors and estimated production is 2.419 million M. T. against the target of 4.457 million M. T. the area sown under total oilseed crop is 2.301 million hectors against target 2.715 million hectors and estimated production is 2.271 million M. T again the target of 3.821 million M T. However, Rabi/ summer 2006-07 is likely to partial compensate the shortfall in the target.

Lalitha and Ramaswami (2007), in their study pointed out the main theme of paper is the analysis of pesticides use pattern in cotton. If the agriculture department is able to supplement for the same year and for the subsequent years, the analysis would become stronger. The first thing that gets clearly established is that both the approved and the UN approved Bt varieties still require substantial pesticide use to safeguard output. Gujarat data that has been analyzed for one year for approved Bt variety.
Sukhpal Singh, (2007), Contract farming has emerged as an important strategy for procurement by agribusiness enterprise & for agriculture development in the developing world including India. Gujarat had a few cases of contract farming for long, but for perishable crops, it is a relatively new entrant. This paper examines the performance of contract farming in the state with four case studies and finds that through production was higher cost for growers it did offer higher net returns. But the contract excluded small farmers and were one sided and didn’t cover farmers production risk in any way.

Samar Datta, (2010), Gujarat farmer needs to pursue a diversified set of activities – not only a diversified cropping pattern less dependent of soil water moisture regimes, but also diversified allied agricultural activities, especially animal husbandry. The progress in fruits and vegetables of Gujarat states better than other parts of India and how this progress is sustained and percolated to other parts of the state to achieve inclusive growth.

Iyengar, (2007), analyses of pesticides use pattern in cotton. Limited year of data are limitation, however, it might give some indication about likely trend. If the agriculture department is able to supplement data for the same year and for subsequent years, the analysis becomes stronger. Introduction of Bt cotton appears to have positive impact and a win-win situation where the loss in output is curtailed significantly along with a significant reduction in use of pesticides.

Gurdev Singh, (2007), examined contract farming being a commercial arrangement between producer and contractor it has to be mutually beneficial. The firms get smooth flow of quality raw materials at a lower cost for better utilization to him. It is a new type of production relationship without full information about the firm, the market, the technique and in some cases even the crop. The relevance of contract farming approach to procurement of farm produce by the processors is determined from the existence of market imperfection that make the market transaction costlier. Under dynamic situation, market would tend to be competitive over time making contractual arrangements less economical or even uneconomical.

Koshi e and Puthiyaveettil, (2007), studies future trading and future price share more reliable than historic data when it comes to crop sowing decisions’. This is because futures prices factor in not only historic events but also market expectations of the future. Ideally a farmer
should be looking at the future prices of various alternative crops that are consistent with the agro climatic conditions in his location and take a view on which crop to grow.

Shailesh Gandhi, (2007), examined the farmers can take the advantage of different in spot versus future prices by entering into future trade. The farmers would face several problems in future market and the institutional mechanisms would need to be placed to resolve these problems. The decision by the Government to ban forward trading in some commodities gives a signal of concerns for hidden speculated activities.

Rastogi and Dholakia(2010), examined All the sectors of the economy, as well as agriculture sector in Gujarat after the year 2000 seems to have picked up from the state. Not only agricultural production has increased manifold, but also agricultural exports have increased substantially. This is significant off the trend improvement in the Indian scenario. In order to decipher the underlying causes of the export growth, it is hypothesized that the agriculture export growth of Gujarat past – 2000 is largely driven by infrastructural provisions and policy reforms.

2.4 Agricultural Trade Policy and Impact

Shinoj, (2009), has examined the policy brief in India. Asian trade in Agriculture in the total trades both exports and imports have grown in double digest percentage during 1995-96 to 2005-06. The real value of exports grew at an average annual rate 13.32 percent and imports grew at 11.28 percent in terms of real prices.

Singh & Singh, (2008), agreement on agriculture aimed at agriculture aimed at establishing a fair and market oriented agro-trading system through substantial progressive reduction in agro-support & protection. Domestic supports are meant to identify acceptable measures of support to farmers. The trade distorting support is measured in terms of total aggregate measure of support.

Shinoj P. and V.C. Mathur, (2008), in their study report “Comparative Advantage of India in Agricultural Exports vis-à-vis Asia: A Post-reform Analysis” has opined that exports of various agricultural commodities from India have responded differently in terms of comparative advantage during the post-reforms period. India has enjoyed a comparative advantage in tea exports but has depicted a declining trend over the years. However, Sri Lanka has shown a far better advantage in comparison to India and other countries like China and Indonesia. A similar pattern has been observed in coffee exports also, where India has
been found losing its comparative advantage to other coffee exporters like Vietnam and Indonesia. Marine products contribute significantly to India’s exchequer through a considerable share of export earnings every year. But, there is no reason to believe that it is due to a dominant position of Indian marine products in the global markets. It can be seen in the case of rice exports with intermittent ups and downs in the status, recent developments in the international trade scenario and corresponding alterations in India’s foreign trade policies has depicted for reaching implications for India’s agricultural sector and agricultural exports in particular. The study also revealed that India had been able to maintain its comparative advantage, but several others such as tea, coffee, spices, etc. had been negatively affected by trade openness policy.

A gradual decline in India’s comparative advantage has been depicted for exports of spices and cashew also. Vietnam has bypassed India in the later years in terms of comparative advantage in cashew exports. As opposed to other commodities, India has strengthened its position in the global markets in exports of oil meals. But as far as the exports of fresh fruits and fresh vegetables are concerned, India cannot boast to have a comparative advantage. While Philippines and Turkey have dominated in fresh fruits exports, Israel has been dominant in the exports of fresh vegetables. India’s status in exports of meat and its preparations and marine products has not been very comfortable. Although marine products dominate India’s agricultural exports, it cannot be attributed to India’s comparative advantage in the global markets. It is assumed to be more due to a growing demand for these products among the international consumers.

Ravindra H Dholakia, (2003), highlighted for exclusive and regular supply to the export market, quality standards have to be according to the foreign destination and not the domestic market. This calls for large-scale production, assured input supplies, good logistics, infrastructural facilities, R&D activities, and technological upgradation. This involves giving priority to investments in several infrastructural facilities and agricultural R&D besides perfecting agricultural land market and encouraging contract farming in the state.

With dismantling of quota and opening up of agricultural trade as a consequence of the World Trade Organization (WTO) and General Agreement on Trade and Tariffs (GATT) agreements, new opportunities have emerged for agribusiness and agri-exports in the country. Like many other states, Gujarat has not lagged behind in the race for preparing reports and
policy papers assessing the potential for agro-processing, identifying constraints in the
development and exports of agri-products, suggesting or announcing several important policy
measures, removing physical and financial infrastructural bottlenecks, and promoting R&D
activities in the sector (CII, 2000; Government of Gujarat, 2000; GCCI, 2002; Government of
Gujarat, 2000a).

A closer examination of the findings of the survey conducted on exports originating from
Gujarat (GITCO, 2001) and several evidences on the performance and prospects of the
agricultural sector in the state reveals that Gujarat has substantial potential in the exports of
agri-products. The export intensity of agri-products in Gujarat (11.9 percent) is substantially
higher than the nation (3.2 percent), which makes the agri-exports from Gujarat positively
sensitive to the exchange rate depreciation unlike the national exports of manufactures or
agri-products. Similarly, the exporters of agri-products from Gujarat, on an average, have
small (or at best medium) enterprises rarely qualifying for special benefits available to the
regular exporters. They are largely traders treating exports of agri-products as an excess
supply from the domestic market rather than considering them as an exclusive supply to the
foreign markets. For better performance on export front, the policy makers should address
this issue urgently. Gujarat contributes about 16% of the total export from the country.

Major agricultural products exported from Gujarat are fresh and processed fruits &
vegetables, castor seeds/oil/derivatives, sesame seeds, HPS, De-oiled Cakes, marine
products etc. Agriculture exports from Gujarat, however, are largely commodity based. The
State Government intends to encourage export of Agri products from the State by taking
different set of measures. Under the Government of India EXIM policy product specific Agri
Export Zones viz. (1) Mango & Vegetables and (2) Value Added Onion - have been notified
by the Ministry of Commerce, Government of India. The Government of Gujarat is also
proposing to establish Agri Export Zones for Groundnut, Sesame seed, Castor, Isabgul,
Banana, Potatoes, Cumin & Fennel seeds. The main objective of AEZ is to provide higher
returns to the farmers by enhancing their accessibility to export and extending their capacity
to produce export specific quality products. The State would support AEZ through the
existing scheme (www.gujagro.org). The State and the Central Government assistance should
not exceed 50 percent of the cost of sending samples and the beneficiary can avail such grant
only once for sending samples for one time to one country and the product should be of
Gujarat Origin only.
When compared with other main players on world markets and considering the size of the country, Indian agricultural trade flows appear relatively modest. As the key goal of agricultural policy since independence has been to achieve self-sufficiency, trade has been relatively limited. However technological developments and macroeconomic policy reforms have brought increased liberalization, following the implementation of the Uruguay Round Agreement, and have contributed to changes in agricultural trade. Indian agricultural exports totaled $9.3 billion in the year 2005 while imports were worth roughly $5.5 billion. Thus India is a net exporter of agricultural food products with a small surplus of just under $4 billion. Between 1993-1995 and 2003-2005, exports nearly doubled while imports grew almost threefold. The value of exports grew from $4 to $7.7 billion while imports rose from $1.8 to $5.2 billion within a decade. The balance of agricultural trade has always been in surplus though there were sharp fluctuations during the nineties. Since 2000 both imports and exports have grown steadily (MAP, No. 03-07, December 2007).

OECD and FAPRI (Food and Agricultural Policy Research Institute) both expect India to play a bigger role in world markets in future. It is likely to remain a small net exporter overall. India is forecast to consolidate its position among the world’s leading exporters of rice (its top export), though the volume of exports has been erratic since the mid nineties (depending on the size of the crop and on domestic consumption). Currently it is the second largest rice producer after China and the third largest net-exporter after Thailand and Vietnam. FAPRI expects it to increase its world market share from 16percent to 20percent by 2015 as area and yields increase and per capita consumption declines. OECD meanwhile takes a more conservative view of production prospects and therefore of export potential. The agricultural export supply responsiveness is so important that numerous empirical studies have focused on this question over the last two decades or so. The virtually unanimous conclusion of the studies that have investigated the determinants of export supply of agricultural commodities is that exports in least developed countries (LDCs) are more responsive to price variables. Price factors are therefore crucial in stimulating agricultural exports. Studies of international trade flows regularly concentrate on the formulation and estimation of demand relationships for imports and exports. Supply relationships have typically been handled by assumption, the usual practice being to assume that the export and import supply price elasticities facing any individual country are infinite. As noted above, while this assumption may apply in the case of the world supply of imports to a single country, it is less plausible when applied to the supply of exports of an individual country.
This means that unless idle capacity exists in the export sector, or more generally, unless export production is subject to constant or increasing returns to scale, it is unlikely that an increase in the world demand for a country’s exports can be satisfied without any increase in the producer’s price (at least in the short run).

2.5 WTO and Agriculture Trade

India has been both an importer and exporter of agricultural commodities for a very long time. India’s agricultural exports after growing at a rate of only 0.78 percent per annum during the period from 1961 to 1971, registered a steep hike and during the period between 1971 to 1981 increasing at an annual average growth rate of 18.36 percent. During the decade of 1980s the growth rate of exports again plummeted to 2.24 percent per annum. The economic liberalization and trade reforms introduced in 1991, helped India accelerate the growth rate of exports to 7.42 percent per annum (Bhalla: 2004). While during the first half of the 1990s India’s agricultural exports performed extremely well, however since 1995-96 these have shown extreme fluctuations. Although the World Trade Organization (WTO) Agreement on Agriculture in 1995 was expected to improve India’s agricultural exports, this does not seem to have happened. There have recently been some signs of a turnaround during 2002-03 and it is expected that this trend will continue (MTA).

Bhalla (2004) however opines that this sudden surge in Indian exports has to some extent been the result of existence of large stocks and transport subsidy made available to exporters.

An examination of trends in exports of various commodities during recent years suggest that many commodities like rice, meat products, processed foods, fish, fruits and vegetables registered very high growth rates during the nineties. On the other hand some traditional exports like tea, cotton were not able to sustain their growth rates after the liberalization. Marine products were the largest export earner while oil meals were also a major item in early 1990s. Recently oilmeal exports have suffered and cotton exports have collapsed.

The measure of domestic support is often discussed in terms of two parameters- the Aggregate Measure of Support (AMS) and the Producer Support Estimate (PSE). In terms of both the measures, despite heavy input subsidies, the aggregate impact of the whole gamut of domestic support policies, when viewed in an international trading context, indicate that when all commodities are treated as imports, aggregate farm output has been taxed by this
policy regime during 1986-2002. Outlays on price support and input subsidies are large, but the impacts of these measures have typically been more than offset by relatively low domestic farm gate prices that prevail due to quantitative import and export restrictions and high marketing costs. More recent protection estimates show that through a combination of rising budgetary subsidies and smaller gaps between domestic and world prices, the taxation of Indian agriculture has declined significantly. When the major commodities are treated as exportable- and relative prices are compared at the border rather than the farm gate- protection even turns positive for 2001 and 2002.

Gulati and Naraynan, (2003), Highlighted during 1999-00 the level of input subsidies (measured at 1993-94 prices) at more than Rs 250 billion was much higher than the public sector GCFA of Rs 50 billion. It is clear from this that even a modest reduction of subsidies, say, to the extent of 20 percent could enable the government to double its investment in agriculture. It is therefore imperative to reduce these subsidies for stepping up public investment in agricultural research and extension, canal irrigation and rural electrification. The reduction in subsidies would also have a favorable impact on the efficiency of input use, equity and environment. However there is considerable political resistance and the process of change towards rational pricing of inputs is bound to be slow.

The importance of domestic reforms in an environment of increased global integration has been widely acknowledged. It has been asserted that large scale welfare gains from multilateral agricultural liberalization are contingent on well functioning domestic economies and that if factor markets were inflexible or public infrastructures were in poor shape only a fraction of the gains from trade reforms would be realized (Anderson:2003). The Reserve Bank of India (RBI) observed in its 2001 Annual Report that “…the pace of progress in liberalization of external trade in agriculture warrants a sense of urgency and priority to institutional reform in agriculture.”(RBI: 2001).

Ramesh Chand, (1999), attempted to quantify the impact of globalization of agriculture on producer surplus, consumer surplus and net social welfare in the case of four crops, namely, paddy (rice), maize, chickpea and rapeseed-mustard. The study concluded that in the case of studied crops, free trade is likely to have sharp positive impact on net return from production of exportables like maize and rice, whereas, it is likely to have small negative impact on net return from the importables like rapeseed-mustard. In rice where level of input subsidy is
high, free trade would not be sufficient to counter the adverse impact on income due to withdrawal of subsidies. Trade liberalization primarily causes changes in producer and consumer surplus and the net effects of this liberalization depend on which of the two effects are stronger. Several researchers have attempted to quantify the effects of trade liberalization. The available results point to mixed evidence of the effects of trade liberalization. A study by attempted to quantify the impact of globalization of agriculture on producer surplus, consumer surplus and net social welfare in the case of four crops, namely, paddy(rice), maize, chickpea and rapeseed-mustard. The study concluded that in the case of studied crops, free trade is likely to have sharp positive impact on net return from production of exportable like maize and rice, whereas, it is likely to have small negative impact on net return from the importable like rapeseed-mustard. In rice where level of input subsidy is high, free trade would not be sufficient to counter the adverse impact on income due to withdrawal of subsidies.

Jayati Ghosh, (2001), examined the impact and policies strategies with special reference to India however opined that more liberal external trade has not in general had a beneficial impact on cultivators in India. This has been partly because of the patterns in world trade which have led to volatile and declining crop prices internationally. But it also has a great deal to do with internal macroeconomic and sectoral policies which have reduced protection to cultivators, caused input prices to rise sharply, made marketing of crops more difficult and exploitative for the direct producers and reduced the flow of institutional credit. The critical question therefore in the current context is how to manage trade liberalization and domestic policies such as to ensure the viability of small cultivators and food security in the countryside.

Sekhar, (2004), attempts to assess the implications for food security of the poor, through transmission of international price volatility, into domestic markets, which arises on account of globalization in agriculture. The commodities selected for study are wheat, rice, groundnut oil, soybean oil, coconut oil, sugar, cotton and coffee. His study shows that extreme volatility in commodity prices, particularly of food commodities, adversely affects poor agricultural laborers and those engaged in the unorganized sector because their wages are not index-linked. For exporters, price volatility increases cash-flow variability and reduces collateral value of inventories. In order to understand the implications of trade liberalization,
particularly import liberalization, it is essential to examine the long-term movements of domestic and international prices and assess the degree of divergence between the two. A price wedge—percentage difference between the monthly domestic and international prices for 10 years since 1990—has been calculated for this purpose. His study shows that where bound tariffs are much higher than the observed price wedge, the bound rates may be lowered. He concludes by stating that short-term variability in agricultural prices in international markets is not found to be higher than domestic markets in India, international trade may be used as a short-term price stabilization strategy in case of supply shocks. At the same time, care should be taken to negotiate appropriate tariff bindings to protect against cheap imports resulting from unfair subsidization in some developed countries.

Anderson, (2002), has projected that a complete global liberalization of agricultural trade (including the removal of massive agricultural protection by OECD countries) would have the effect of increasing net annual exports of agricultural and food products by $2.7 billion from India: a 40% rise over the current level of agricultural exports. The current annual value of agricultural production in India is close to $100 billion. A $2.7 billion growth in exports would constitute in itself close to 2.7% annual growth in value of Gross Domestic Agricultural Product which equals the current average annual growth rate. This is based on the assumption that all additional exports come from additional domestic agricultural production and not diverted from domestic consumption. Thus assuming an adequate supply response, growth rates in agriculture production may tend to double on average for the first few years.

The Government of India removed several statutory restrictions in its 2002 National Agricultural Policy. In early 2004 the Government liberalized procurement of food grains for the export market; exporters are now permitted to procure rice and wheat from farmers at market-determined rates. Food grain market policy in India has tended to be highly interventionist with the central and state governments actively involved in grain storage and restrictions on the movement of food grains across states (Jha and Srinivasan: 2004).

In some products, such as edible oils, international prices on account of subsidies have consistently been lower than domestic prices. Analysts addressing this issue have consistently shown that Indian edible oils do not compete well with imports (Gulati and Sharma: 1998). Comparing the ratio of domestic and international prices of oilseeds and oil, Chand (2002)
shows that oilseeds production, particularly in rapeseed-mustard and soybean, is fairly competitive. This is also shown by a World Bank (1997) study. It is in oils that India is on shaky grounds (Chand: 2002). Inefficiencies in the oil-processing sector is one reason; the other factor is the subsidy-driven ability of foreign producers to sell cheap oil. These and other findings indicate that oilseeds production in the country faces a threat due to inefficiency of processing and marketing and also due to transmission of volatility in world prices to the domestic market.

USDA (2001) has estimated that the full elimination of global agricultural policy distortions would result in annual world welfare gains of US$ 56 billion. Moreover elimination of agricultural trade and domestic policy distortions could raise world agricultural prices by about 12 percent. Evaluating the impacts of comprehensive multilateral liberalization of agricultural trade policies using a CGE model, Cline estimates that the welfare benefits from a free trade in agriculture for India will be to the tune of $0.82 billion. Full liberalization of OECD farm policies would boost the volume of global agricultural trade by more than 50% but would cause real food prices to rise by only 5% on average (Anderson:2003).

Another study in World Bank:2003) estimate that world prices are likely to go up by even higher margins: 10-20 percent for cotton, 20-40 percent for dairy products, 10-20 percent for groundnuts, 33-90 percent for rice and 20-40 percent for sugar. Results of a World Bank study indicate that a removal of agricultural tariffs and subsidies by all WTO countries would generate an increase in developing country exports of 15% and increase in imports of 12%. In terms of this study, India would experience an increase in exports of 13%. World prices of wheat are expected to rise by about 10% and prices of rice are expected to rise by about 16%. As a net exporter of both rice and wheat, India therefore, stands to gain significantly from terms-of-trade improvements.

Babcock, et al, (2002), using the FAPRI (Food and Agricultural Policy Research Institute) have analyzed the impact of liberalizing agricultural markets on world trade flows, prices and market equilibrium. The analysis has been carried out fewer than two possible scenarios- the full trade liberalization scenario and trade-only liberalization scenario. The results obtained suggest that under a full liberalization scenario, the world wheat, rice and cotton prices are estimated to go up by 4.8 percent, 10.3 percent and 15 percent respectively. Under the trade-only liberalization scenario the corresponding increase in the prices of wheat, rice and cotton
are likely to be of the order of 7.6, 10.6 and 3 percent respectively. Because of the removal of export subsidies Indian exports of wheat are estimated to decrease under the full liberalization scenario and India is projected to become a net importer by 2003/04 with trade only scenario. Rice trade increases by 29 percent under the full trade scenario and by about 27 percent in the trade-only scenario. Most of these exports are captured by China, India and Vietnam followed by Thailand.

On an average Indian exports of rice are estimated to grow by over 100 percent under the full liberalization and by 56 percent under the trade only scenario. In the case of cotton under the full liberalization scenario, net cotton imports decline by 16 percent. In the trade only scenario Indian exports of cotton increase by just 2 percent. Thus India is likely to gain much more in the rice and cotton sectors under a scenario of full liberalization. The present exercise however does not take in to account the transportation cost when estimating the flow of trade. In the case of wheat, the transportation cost vis-à-vis the US is relatively high, and India is likely to have an advantage when competing with the US in export destinations closer to the former even after elimination of export subsidies.

Kulkarni, K. G, (2009) ,analyzed the effects of India’s trade policy on rice production and exports. They analyzed the economic effects of such trade policy in the framework of Comparative Static Model that explains the costs and benefits of tariffs and subsidies. They found that the protectionists trade policy actions undertaken in 2008 resulted in an estimated $ 260 million increase to national welfare consumers benefited from lower prices and the loss to producers was offsets the government aid, including debt reduction. While its policies appeared to limit the transmission of higher world prices to Indian consumers, India’s monopoly power in the production of rice could have limited the full effect of price decrease. Kuruvila, (2001), studied India’s export performance of pepper. The growth rate of pepper production and export were 0.66 per cent and 4.26 per cent during 1990-2000, respectively. These growth rates were far below to Vietnam’s growth rates of 13.40 per cent and 7.84 per cent in production and export during the same period. However, Brazil, Indonesia and Malaysia had negative growth rates during the same period in production and export.

Rajesh et al. (2002), studied the trend in export of major spices in India for the period 1970-71 to 1999-00 and found that black pepper registered a positive annual growth rate of 2.38 per cent in quantity and 12.78 per cent in value.
Rao (2005) analyzed that the prospects for exports of food grains from India seem real, at least for a decade, if the growth rate in food grains output of around 3 percent can be achieved, as the domestic demand for food grains is unlikely to exceed 2.6 percent per annum with even 7 percent growth rate in GDP. India is unlikely to absorb domestically the whole of food grains output from a growth rate of around 3 percent for quite sometimes unless drastic changes in income distribution can be effected.

Nagaraja, (1997), analyzed the direction of trade of Indian horticultural commodities exports by employing first order Markov process which helped in identifying the gains and losses in export value. It revealed that other fresh fruits, vegetables and processed fruits and vegetables export altogether retained 68.5 per cent; onion and garlic retained 68.5 per cent and 24 per cent, respectively. The results indicated that grapes, onion and mango juice sustained their original share of 59.8 and 49.0 per cent, respectively.

Mandanna, et al. (1998) analyzed the structural change in India's tobacco exports for the period from 1980-81 to 1994-95 using Markov chain analysis. The study revealed that the USSR, the largest market for un-manufactured Indian tobacco showed a high degree of loyalty. The markets of Western Europe, Asia, and the Middle East had taken the place of the USSR. However in the case of manufactured product, only cigarettes had a dominant presence in the export basket.

Mahesh, (2000), studied the structural changes in export of Indian tea for the period (1979-80 to 1998-99) by using first order Markov model. Germany, Poland and USA could not retain share, it has shifted to UK, USSR, and Iran.

Gulati, (1990), determined the protection coefficients for Ground Nut in India and various producing states. The export-Import competition hypothesis was also worked out. The levels of incentives were found to be significantly higher.

Bhalla, (2004), suggested that this sudden surge in Indian exports has to some extent been the result of existence of large stocks and transport subsidy made available to exporters. Examined from another angle, the share of agricultural exports, which constituted more than 30 percent of the total exports from the country during 1970-71 and 1980-81, have of late been declining consistently, more so in recent years. The declining trend is more noticeable in the post liberalization and post WTO periods. In 1990-91, agricultural exports constituted about 18 percent of the total exports which in 2000-01 went down to 14 percent. In 2003-04 agricultural exports constituted only 12.4 percent of all exports. India has been both an
importer and exporter of agricultural commodities for a very longtime. India’s agricultural exports after growing at a rate of only 0.78 percent per annum during the period from 1961 to 1971, registered a steep hike and during the period between 1971 to 1981 increasing at an annual average growth rate of 18.36 percent. During the decade of 1980s the growth rate of exports again plummeted to 2.24 percent per annum. The economic liberalization and trade reforms introduced in 1991, helped India accelerate the growth rate of exports to 7.42 percent per annum. While during the first half of the 1990s India’s agricultural exports performed extremely well, however since 1995-96 these have shown extreme fluctuations. Although the World Trade Organization (WTO) Agreement on Agriculture in 1995 was expected to improve India’s agricultural exports, this does not seem to have happened.

The Reserve Bank of India (RBI) observed in its 2001 Annual Report that “…the pace of progress in liberalization of external trade in agriculture warrants a sense of urgency and priority to institutional reform in agriculture.”(RBI: 2001). While stressing the importance of public investment in basic infrastructure the RBI stressed the importance of effective supply chain arrangements that encompassed storage, processing and trading. It also noted a major concern of regulating intermediaries. There is a strong perception that inadequate regulation of intermediaries in agricultural trade acutely affects farmers on account of low farm gate prices. Policy constraints such as restrictions on movement of agricultural commodities and ad hoc ism in export policy have been cited as a major source of regulatory problems (Government of Kerala: 2003).

Evaluating the implications of some of alternative tariff reduction structures, a study by Vanzetti and Peters, 2003, using general equilibrium models, shows that the one tariff-harmonizing Swiss formula component with rather ambitious coefficients of 25 for developed and 50 for developing countries gives overall welfare effects that are not much higher than a continuation of the Uruguay Round approach. Assuming reduction in export subsidies by 45 per cent and domestic support by 55 per cent further reduces the global welfare gains.

Another recent World Bank study shows that in terms of potential reform, or the pillars of agriculture negotiations, (Hertel and Keeney) increased agricultural market access is the key to successful liberalization of merchandise trade, accounting for well over half the potential economic welfare gains to developing countries and the world as a whole from removing all merchandise trade distortions and farm subsidies. Within agriculture, the potential gains from
market access are shown to be far more important than those from abolition of domestic support and export subsidies, accounting for 93 percent of the gains from total agricultural liberalization.

As per the Indian Budget (1998-99) trade policy reforms have provided an opportunity to Indian exporters to export agriculture products to overseas markets. However with increased concern regarding health and safety of human, plant and animal life, countries are putting in place stringent legislations for quality. India has the potential of exporting at least 2 million tonnes of rice annually which of course includes nearly 5 lakh tonnes of high value long grain basmati rice. In 1998 over 2 million tonnes of rice had already been exported till November, 1998. Indian exporters are required to improve their processing and packaging facilities to meet international quality standards. Though there has been some diversification in products exported and spread of destinations, bulk of India’s agricultural exports still conforms to traditional items.

The Agreement on Agriculture lists several types of subsidies to which reduction commitments apply. However, such subsidies are virtually non-existent in India as exporters of agricultural commodities do not get direct subsidy. Even exemption of export profits from income tax under Section 80-HHC of the Income Tax Act is not among the listed subsidies. It is also worth noting that developing countries are free to provide three of the listed subsidies, namely, reduction of export marketing costs, internal and international transport and freight charges (India and WTO, May 1999, Vol. 1, No.5).

A.V. Ganesan, (1999) opines that there will be growing pressure from the farmers to realise higher prices for their produce and to narrow the gap between the domestic and external prices. Our industrialists are pressing for a ‘level playing field’ vis-a-vis foreign enterprises; our farmers will press for a ‘level playing field’ for the prices of their products vis-à-vis international prices. Both the pattern of production and price expectations will increasingly be influenced by the demands and trends in world markets. On the one hand, the price incentive could be the best incentive and could give a strong boost to investment in agriculture as well as adoption of modern technologies and thereby to the raising of agricultural production and productivity. On the other hand, the rise in domestic prices would put pressure on the public distribution system and accentuate the problem of food subsidy. Furthermore, freedom to export agricultural products without restrictions will also need
shedding the long-nurtured inhibition against their imports. The nature and character of State intervention and State support will have to undergo qualitative changes in order not only to realise the opportunities for exports, but also to cope with the implications of our agriculture coming into increasing alignment with the international market place.

Ramesh Chand, (2005) , analyses the performance of India’s agricultural exports and imports during post WTO period and identifies the products based on favorable / adverse and no effect on their trade as implementation of WTO agreement progressed. The paper then identifies main reasons for favorable / adverse effect on agricultural trade and draws lesions for future negotiations on AOA. Consequently, amount of exports needed to finance import increased to more than 57 percent, which is very high; compare to pre WTO and initial years of WTO. Amount of trade surplus generated in this period remained at 0.27 percent of GDP agriculture, as was the case during 1998/99 to 2000/01.

Sharp decline in ration of trade surplus to GDP agriculture and much faster growth in import compared to export in post WTO years have serious implications for further liberalization of trade and WTO agreement on agriculture. Trade liberalization was anticipated to provide very attractive avenues for growth of agricultural exports.

There were considerable variations in export performance of various commodities. Non-basmati rice and wheat could not face global competition. Export of oil meal, which was the second biggest item of export after marine products, suffered serious setback due to decline in international prices and quantity of exports. Export earnings from traditional group consisting of tea, coffee, and spices, tobacco suffered mainly due to sharp fall in international prices, as quantity of export in most cases did not decline. Export value in $) of marine products, and group of livestock and horticultural products maintained the tempo of growth, continuing from pre WTO period. This shows that post WTO situation was favorable to export of high value food products. Export of cotton almost dried up in the post WTO period due to increased demand from domestic textile industry and decline in domestic production. Sugar exports remained occasional as the surplus arose temporarily. This scenario of India’s agricultural exports indicates that future negotiations should focus on taking advantage in export of high value food products.

Hoda and Gulati,(2000), attempted to review WTO input subsidy India’s non product specific AMS decreased from $5,772.1million in 1995 to $930.3 in 1997, due to shift in the
accounting of input subsides from non product specific support to special and differential treatment.

Devinder Sharma (1985), highlighted the role of WTO on agriculture it stressed that Indian farmers does not receive any income support, growing volume of green box subsidies merely forces him to abandon farming and migrate to the urban centers.

Shinoj and Mathur (2006), studies the maximum export earnings were found to be from marine products throughout the study period, and varied between 8.9 per cent and 18.5 per cent in different years. Oil meals attached significant revenue during the period but their share declined from 21.1 percent during 1995-96 to 7.6 percent during 2002-03. Other major exports earners included rice (both basmati and non-basmati) and meat and meat preparations. However, the earnings from non-basmati rice were found to be highly unstable and showed wide interwar fluctuations. Other commodities like tea, coffee, spices, cashew nuts, etc. contributed moderately to export earnings. The revenues from sports of fresh fruits were observed to hover found 1 per cent. An interesting finding from the analysis was a significant diversification of Indian agricultural exports in terms of the commodity mix of exports bound for the Asian destinations even in this short span of time. In 1995-96, the earnings from commodities, other than the selected ones, constituted only 18.3 per cent, which increased substantially to 32.5 per cent in 2002-03.

The compound growth rates of major agricultural commodities exported from or imported into India during the period 1995-96 were worked out and are presented in. Among the various commodities exported to Asia, tea showed the highest growth rate (14.0 percent) followed by coffee (13.2 per cent). Exports of spices, fresh fruit and fresh vegetables showed a moderate growth. Oil meals exports were greatly reduced and showed a negative growth rate of -13.0 per cent. Agricultural commodities, taken together, also marked a negative growth of -0.4 per cent.

Chand and Mathur (1998), highlighted role of agriculture sector and agro based industries in terms of contribution to national output, employment, foreign exchange earnings and support to modern industrial sector is well recognized, and given the country’s natural resource endowment and socio economic characteristics there is huge potential to further raise contribution of these two sectors. However, progress and development of these sectors is not an autonomous process but is faced with various constraints, hurdles and challenges. This paper dwells on the challenges facing agriculture sector and agro based industries to
underscore the need to evolve suitable strategy to ensure that these sectors play their due role in the economic transformation of the country. Notwithstanding significant strides made by India in enhancing agricultural production and productivity leading to increase per capita availability of food for direct human consumption, hunger and malnutrition continue to form the basis of all our food security pronouncements. Planned development of agro-based industries essentially requires high degree of linkage and interface between agriculture and Industry. Another strategic reason for improving linkage between agriculture and industry is that it will give a boost to ancillary industries producing products and services, like packaging industry and marketing organizations.

Mahesh et al. (2000) studied the structural changes in export Indian tea for the period (1979-80 to 1998-99) by using first order Markov model. Germany, Poland and USA could not retain share, it has shifted to UK, USSR, and Iran.

Gulati, (1990) determined the protection coefficients for Ground nut in India and various producing states. The export-Import competition hypotheses are also work out. The levels of incentives were significantly higher.

Sathe and Agarwal, (2004), examined the issues related to the opening up of the Indian pulses sector. The study shows that pulses (lentils) imports have-not augmented supply to such an extent that there would be a strong, negative relationship between prices and imports of pulses. Though the import duties on pulses have been generally low the result of our import regime has been such that it has not depressed prices in a substantial way.

Jaiswal, (2003), suggested benefits of liberalization in processed food sectors could be under the protectionists’ use of Sanitary & Phyto-Sanitary Measure (SPM) by some countries. He has examined the adequacy of TBT & SPS agreements of WTO. These should be mutual recognition of non-product related processes & production methods.

Bhagwati, (1996), has cautioned that difference among countries of environmental standard should be regarded as dumping subjected to countervailing duties, and reason for harmonization of domestic policies, institutions, practices across trading nations.

Bhattacharya and Mukhopadhya, (2002), have analyzed impact of Non Tariff Measure (NTM) on India’s exports imposed by US, the EU & Japan. While tariffs are imposed on MFN basis opposes application of Safeguards measures line anti-dumping both by developed & developing countries. The extension & SDT (Special & Differential Treatment) to
developing countries has a part on modernization & Competitiveness. The developing countries when apply their fairly own standards leave additional obligations to apply internationally sanction standards in their domestic economics.

Hoda and Gulati, (2000) have analyzed the implication of various subsidized as shown in WTO agreement. India should, instead of providing high price support send more services including capital for Infrastructure Services. The (AOA) under the WTO came into effect on 1 January 1995 in corporating the result of Uruguay round of multilateral trade negotiation.

Moore, (2003), has exposted negotiation line an insurance policy. The anti-dumping and counteracting duties are threatening the gain from post liberalization. The agreements that have formed the basis of the GATT and the WTO system allow industries to petition governments to impose temporary duties on products that are being sold at “less than fair value” and cause “material injury” to the domestic industry producing a like product. An antidumping order on foreign firms’ exports is imposed only if agencies rule affirmatively that there is both dumping and material injury.

Swami Nathan, (2000), has argued for modernizing the entire patent infrastructure, starting patent facilitating centers in various scientific departments. The literature on innovation in order to build a conceptual framework of innovation and identify areas of further research. Though the surveyed literature suggests that intellectual property rights (IPRs) play an important role with regard to innovation, we contend that this may not be the case for developing countries due to specific country characteristics

Kym Anderson, Will Martin and Ernesto Valenzuela, (2005), studied in the multilateral agricultural trade negotiations under the WTO’s Doha Development Agenda (DDA), the OECD Secretariat’s producer support estimates (PSEs) have received much attention. For high-income countries as a whole, that estimate for 2004 is $280 billion. Developing countries have contrasted (a) the ability of developed countries to pay such subsidies with the much more limited resources available to developing countries, and (b) this wasteful largesse with the much smaller amount devoted to foreign aid by the same high-income country governments (less than $70 billion per year).

Parthapratim Pal, (2008), suggested The WTO negotiations on agriculture in the Doha Round of trade talks are not progressing well. In the latest “Revised Draft Modalities for
In the year 2008, some key issues remain unresolved. Lack of agreement on important issues has pushed the negotiating schedule completely out of track. In the timetable published in the Doha Ministerial Meet, it was suggested that negotiations for new round should be concluded by 2005. Repeated failures to attain consensus on key issues have kept pushing back the deadline and after the recent stalemates, doubts have been raised whether the Doha Round is ever going to be concluded. Though multilateral trade negotiations have a tendency to drag on and the previous round of negotiations (the Uruguay Round) went on for seven years before a deal was signed, the Doha Round is already into its eighth year now and nobody is sure when it is going to be concluded. In August 2008, Pascal Lamy, the Director General of WTO, however, felt that significant progress was made on various important issues and said “we have never been so close to an agreement”.

Vijay Paul Sharma and Ashok Gulati,(2003), studied that In many countries there is a considerable gap between the levels of tariff bound in the WTO Schedules and that, which is actually imposed on the imports. This has been called .water policy, and gives the country concerned some flexibility to raise tariffs within the constraint of bound rate. A comparison of EU tariff equivalents with applied tariffs during 1995-97, revealed substantial margin of water in the EUs tariffs for dairy products. For SMP, this stems from a small price gap (tariff equivalent) and high tariffs, whereas for butter, although the price gap was large, the applied tariffs were in excess of130 per cent between 1995 and 1997.

Bernard Hoekman,Francis ,Marcelo Olarreaga, (2003), analyzed there are 158 commodities at the HS 6-digit level that benefit from (direct) domestic support in at least one WTO member. Total support reported to the WTO was some $227billion per year on average during the 1995-1998 periods around$108 billion of domestic support are in the so-called Green Box—exempted from future reduction commitments because they are considered not to distort trade. Domestic support is primarily used by OECD countries, accounting for more than 88 percent of total domestic support payments notified to the WTO. The Quad, (Canada, EU, Japan and the United States) account for 84 percent. Their share of world support is above 99percent in several products (e.g., oil seeds and oleaginous fruits and other grains, preparations of vegetables, fruits and nuts, beverages and spirits, silk and certain vegetable textile fibers and yarn).
Gulati and Narayanan, (2003), calculated the PSE (Producer Support Estimate) for India between the years 1986 and 2000 and these estimates also support the conclusion that India has been giving negative subsidies to agriculture. PSE tends to vary much more over time than AMS because it uses varying prices as opposed to fixed and administered prices. Therefore, the range in these estimates goes from –5.93 percent in 1987 to –101.85 percent in 1997. Decreasing world food prices dramatically cut the computed level of negative subsidies in the late 90s until 2000 when the value of PSE was –26.55 percent. during 1999-00 the level of input subsidies (measured at 1993-94 prices) at more than Rs250 billion was much higher than the public sector GCFA of Rs 50 billion . It is clear from this that even a modest reduction of subsidies, say, to the extent of 20 percent could enable the government to double its investment in agriculture. It is therefore imperative to reduce these subsidies for stepping up public investment in agricultural research and extension, canal irrigation and rural electrification. The reduction in subsidies would also have a favorable impact on the efficiency of input use, equity and environment. However there is considerable political resistance and the process of change towards rational pricing of inputs is bound to be slow.

Ramesh Sharma, (2006) analyzed developing countries can exempt a somewhat larger set of policy instruments from commitment and reduction. It was recognized that government assistance for agricultural and rural development is an integral part of the development programs of developing countries, and investment subsidies for agriculture and input subsidies for low-income or resource-poor producers in these countries are exempt from reductions. In addition, support to encourage diversification away from illicit narcotic crops is exempt. These provisions are known collectively as Article 6.2 exemptions. Since 1995 levels of domestic support, as measured by the current total aggregate measurement of support, have remained considerably below allowed levels in many countries. Only two countries exceeded the commitment level in any individual year, and both were special cases.20 in all years since 1995 for which notifications are available, around half of WTO members with domestic support notifications used less than 60 percent of their domestic support commitments.

Alex F, McCalla and John Nash, (2006), studied The United States argued for an expansion of tariff rate quotas to 20 percent of consumption and elimination of within-quota tariffs. The Cairns Group also wanted substantial increases in market access and improved rules on administration. The European Union was less forthcoming but has not blocked discussion on
expansion. The Harbinson proposal called for a doubling of the tariff rate quotas, from 5 percent to 10 percent of consumption, though there is some suggested flexibility: countries that wish to limit this access to 8 percent for up to one-quarter of their tariff rate quotas can give additional access in other markets. Developing countries again would get a longer period for implementing these changes. In-quota tariffs would not be controlled unless quota-fill was below 65 percent or the good was a tropical product or a substitute for narcotics production. The US-EU draft revived an earlier idea (put forward by Canada) that countries could choose expansion of tariff rate quotas as an alternative to some part of their tariff reductions. The General Council chairman’s pre-Cancún draft picked up this idea of offering countries a choice between tariff reductions and greater market opening through tariff rate quotas.

Ramesh Sharma, (2006) highlighted export subsidies are not an implementation issue for developing countries, but they are nonetheless a matter of considerable concern. Few developing countries grant direct export subsidies, but there is considerable concern about this practice by some developed countries. Even large net food importers that benefit from the lower food costs resulting from such subsidies have taken positions against the practice in view of negative effects on their exports and agriculture. Developing countries have used the special provision allowing them to subsidize internal and external transport costs, which they consider useful for selectively promoting niche exports. But the overall subsidy level is not likely to be large in coming years. Developing countries also use some export incentive measures referred to in the Subsidies Agreement. There is a need to clarify the legality of these measures under the URAA

World Bank report, (2008) by a team led by Dina Umali-Deininger, highlights the need for change in agricultural marketing and processing systems due to the rapid growth of the Indian economy which brings new forces for change. Critical weaknesses in the agricultural marketing system were exposed. The study further stated the need for development of efficient and competitive marketing systems with the participation of the public and private sector and at this juncture the government needs to reorient its strategy.

B. Bhattacharyya (2004), throws a light on ‘India’s External Trade in Agriculture’. He seeks to review India’s experience in agricultural trade since 1950s, with a view to identifying the
structural shifts that have taken place. He also made comprehensive appraisal of the evolution of agricultural trade policies.


P Nasurudeen, Anil Kuruvila and R Rajni, (2007), analyzed the Performance of Agricultural Trade in the post reform period by estimating growth rates, indicators of trade openness and various other indices.

Jairath M. S. (2008), highlights the importance and need of infrastructure facilities for the development of agricultural marketing. He states that, many of the regions of the country still suffer from the existence of infrastructural problems that they threaten to the region’s agricultural and horticultural development efforts. The working group on Agricultural marketing infrastructure and Policy required for internal and external trade For the Xi five year plan 2007-12 by Agriculture division Planning commission Government of India, (2007); identified the bottlenecks in the domestic marketing system, assessed supply chain for different farm products and reviewed the working of agricultural markets and wholesale man dies. The Working Group also looked at the emerging alternative marketing channels and vertical linkages of marketing groups of farmers with retail and terminal markets and processors. The Group also reviewed the export performance and come out with several recommendations to improve agricultural marketing

Santosh Sachdev, (2000), offers a critical analysis of comparative advantage in agricultural exports of South Asia, especially of India. The study is based on the fundamental premise that India being a low income agricultural economy enjoys comparative advantage in agricultural products and labor intensive manufactures.

Aaditya Mattoo, Deepak Mishra, Ashish Narain (2007), was presented a case study of India’s horticulture. This study seeks a solution by examining the horticulture sector, one of the most dynamic segments of Indian agriculture and international trade. It undertakes an integrated
analysis of the sector- from farm to retail- based on primary surveys of farmers, agents, and exporters across fifteen different Indian states.

Surabhi Mittal (2007) expresses background of horticulture development in India, past trends in area, production and exports, domestic demand, supply and constraints. She presents a SAFAL market case study to overcome some of the problems associated with this sector.

C. H. Hanumantha Rao, (1995), states that prospects for agriculture in India are bright, there is considerable scope for raising farm income and employment by stepping up agro based exports, consolidating the food security already achieved. He further explains that the export potential of food grains will further strengthen food security at home, because exports can always be adjusted to ensure adequate availability of food grains for the domestic market. Apart from food grains horticultural products, floriculture, and agro-processing in general are likely to emerge as promising sectors.

M. S. Swaminathan (2006), Chairman, National Commission on Farmers (NCF) has recommended establishing an Indian Trade Organization (ITO) and its own boxes for domestic agricultural support on the model of WTO’s Blue, Green and Amber Boxes. He said, the Indian Trade Organization (ITO) can be a virtual organization, specializing in WTO affairs. It can serve as a brain and information bank for enabling Government to take informed and proactive decisions. He said, it can provide timely advice on potential, surplus and shortages in major Agricultural Commodities, by maintaining a trade watch.

Greenway, Morgan and Wright, (1998), observe that trade liberalization acts as a major stimulus for enhancing growth. They have brought out details the methodological issues involved in modeling trade liberalization.

Gruen (1999), expresses the view that both old and new trade liberalization can, on their own, bring about complete free trade. However, they have not brought about complete free trade. Therefore the paper has tried to examine the new instrument of state liberalization namely Export Processing Zones and Duty Remission and talks of a more general approach to trade liberalization. He concludes that even though both old and new liberalization are good neither of the two has been so far successful in bringing about completely free trade without any barriers or restrictions and enumerate three measures to empirically evaluate the
impact of a particular liberalization namely policy accounts, relative price changes, output based measures and multiple criteria measures. Further, they review the existing stocks of literature in trade liberalisation by using several approaches with the help of large data base and a panel framework along with other range measures of liberalization they explain the dynamics of trade reform. The results of their studies indicate that liberalization and openness do impact favorably on the growth of GDP per Capita. However, in evaluating the impact of trade policy and changes in trade policy on growth it is vital not to equate trade liberalization with openness and it is equally vital to remember that openness is function of many and not just liberalization.

Indian studies focus on the description and empirical analysis of trade sector reforms in the broader framework of external sector reforms. The descriptive studies, such as, Gupta (1993) present a useful description of the various policy measures undertaken, over the years.

The empirical studies on trade policy reforms are many and diversified. To start with, Mallick (1994) estimated the causal relationship between exports and economic (income) growth in India using annual time series date from 1950-51 to 1991-91. The model includes an important link variable “imports” which enters into the production function to determine output growth, and hence the relationship between export and economic growth. The result of the modified Sims test supports the feedback hypothesis between income and export growth and gives consistent evidence in the determination of causal linkage between income and export growth with and without the link variable ‘imports’.

Mehta, (1997), attempts to analyzed the impact of India’s recent trade policy reforms on external trade. The author has made use of the indices of trade liberalization like the effective rate of protection (ERP) and the Nominal rate protection (NRP) to quantify the extent of the protection granted to the Indian industries. He also uses the index of structural change and the sign test to verify the hypothesis that the distribution of India’s exports and imports by commodity composition during the year 1994-95 i.e. the post reform period is not different from the period 1990-91 i.e. the pre reform period. This is because the share of agriculture and allied products in India’s export basket has remained more or less same.

Ramesh Sharma, (2006), draws lessons from more than 20 FAO case studies of developing
Country perspectives on which possible outcomes from Doha could have important implications for their own policies. Significant reductions in permissible domestic support will have limited impact because most of these countries do not heavily subsidize domestic agriculture. Similarly, given that most developing countries do not subsidize exports, ending export subsidies would have little direct impact. From their own perspective, it is reductions in domestic protection that worry developing countries most if that leaves their domestic food production sector vulnerable to international prices depressed by subsidies and protection in developed countries. This complicates their position in WTO negotiations because all analyses suggest that developing countries have the most to gain from improved market access.

Bernard Hoekman, Francis Ng, and Marcelo Olarreaga, (2006), analyze show subsidies on domestic production and on exports affect developing countries. They conclude that developing countries have differing interests in subsidy removal depending on whether they are exporters or importers and on what they export or import. As rich country subsidies are concentrated in a few products, impacts of the subsidy obviously vary by whether a developing country produces subsidized products.

Rashid S. Kaukab, (2006), presents an up-to-date analysis of the rapidly evolving patterns of coalitions and alliances that are developing in the WTO, and of potential negotiating strategies. He concludes that, regardless of the final pattern of coalitions, developing countries clearly are going to have increasing influence on WTO outcomes.

William Foster and Alberto Valdés, (2006), focuses on increased exposure to international price variability and sustained periods of low prices when developing countries open their borders to direct price transmission. They explore possible policy options such as price bands for WTO-consistent ways to prevent import surges from disrupting domestic food markets.

Tim Josling (2006), explores whether the Agreement on Sanitary and Phytosanitary Measures has had a differential impact on developing countries. Evidence to date suggests that progress on implementation has been slow and that the potential to disadvantage poor and small developing countries by increasingly rigorous requirements is real.
Philip L. Paarlberg, Maury Bredahl, and John G. Lee, (2006), examines multi functionality from the perspective of developing countries. They explore two dimensions. The first is the potential spillover on developing countries from the implementation of policies to reward agriculture in OECD countries for multifunctional activities. The second dimension concerns the implications of developing countries adopting multi functionality as a policy approach.

Ashok Gulati and Sudha Narayanan (2006) closely examine India’s experience with liberalization, which lowered domestic protection only to be confronted by dramatic world price fluctuations and sustained low prices. The impacts of such reforms on small resource-poor farmers are potentially severe. What is needed are better ways to manage import competition in a previously closed economy. In making its tariff commitments, India took advantage of the flexibility provided to developing countries to bind agricultural tariffs at ceiling levels that were among the highest in the world: 100 percent for raw commodities, 150 percent for processed products, and 300 percent for edible oils (except soybean oil). Preexisting commitments were retained for tariff lines on which tariff commitments had been made during earlier rounds or under Article XXVIII for renegotiations. In India’s tariff schedule at the Uruguay Round all 686 lines at the six-digit level of the Harmonized System (HS) falling within the purview of the URRAA were subject to tariff commitments.

Ashok Gulati and Sudha Narayanan (2006), the World Trade Organization (WTO) Appellate Body report (WTO 1999, p. 37) of August 23, 1999, recommended that “India bring its balance-of-payments restrictions, which the Panel found to be inconsistent with Article XI:1 and VIII:11 of GATT 1994, and with Article 4.2 of the Agreement on Agriculture, into conformity with its obligations under these agreements.” India agreed to eliminate the restrictions on 1,429 six-digit tariff lines in two installments in 2000 and 2001. The last quantitative restrictions on 715 six-digit HS tariff lines were eliminated on April 1, 2001, including 147 tariff lines pertaining to agriculture. After that, quantitative restrictions could be imposed or maintained on imports only for protection of health and morals (Article XX of GATT 1994). Such restrictions include imports of certain animal fats, prohibited for religious reasons.

Gulati and Kelley, (1999), predicted that with liberalization India would be exporting 3–4 million tons of rice, about 5 million tons of wheat, and half a million tons of cotton, while importing some 1.5–2 million tons of edible oils. Other research concluded that India would
be a major importer (36–64 million tons by 2020) of grains in the long run. The Gulati and Kelley study was based on filling the wedge between domestic and external prices (f.o.b. for rice, wheat, and cotton and c.i.f. for oilseeds and other commodities) for 1990–93 and making certain assumptions about world prices, such as they would be at a level that prevailed during 1990–93, and trade policies, which were free from any export/import controls. In the event, volatile world prices and India’s evolving trade policy regime meant that things turned out a bit differently from their predictions.

2.6 Gaps in studies

It has been observed from the large number of literatures that, a number of studies have been focused on traditional studies without any attempt for focusing future strategies keeping in ground level realities.

These studies have not exploded what sorts have occurred in economic, political and policy in our country and in the world, so as to increase agro productivity and export potential of agro-commodity and value-added agro products. It has been observed from most of the literature the variation in production in Gujarat and all India levels for most of the crops. But effective solution & policy frame has not been highlighted.

A few studies have attended to co-relate the agro productivity, export potential from Gujarat state and all India levels. It is essential policy measure implementation has to be examined at different levels and explore alternative methods. The post WTO period with the increase in irrigation facility, Agro-commodities were gradually competed out by more profitable cereals / cash crops. Development and adoption of HYV coupled with improved package of practices and higher monetary incentive for growers could turn the prevailing dismal scenario of selected production of the state of Gujarat. Impact of Non Tariff Measure (NTM) on India’s exports imposed by US, the EU & Japan. While tariffs are imposed on MFN basis opposes application of Safeguards measures line anti-dumping both by developed & developing countries. But less effort has made to increase export from developing countries like India. These are some of the observed gap, which is systematically analyzed by this work.