Chapter – Two

Review of Literature

The subsidy is very important for economic growth of farmers like developing country India. A numbers of policymakers, planners, economists have presented their views on agriculture subsidies in national & international level through research papers, reports and articles. The agriculture subsidy has become more important after agreement of India with WTO. The present study was carried out to understand the functioning of WTO in Context to Agricultural subsidy with special reference to India. The main objective of review of literature was to illustrate the idea of synthesizing the literature available, stressing the weaving together and integration of threads contained in previous writings on the selected topics. Based on some of the available literature on the subject, the present chapter attempts to present a brief review of the recent growth performance of Indian agriculture and agricultural support policies that have a major impact on agriculture. The chapter provides a brief description of the status of WTO negotiations in agriculture and the Indian stand on some of these issues under negotiation.

Panchamukhi, (1986), examines the behaviour of trade in agricultural commodities and its relation to other important macro economic variables. The study shows that trade in agriculture in India is subject to vast fluctuations as compared to the trade in non-agricultural sectors in India. On drawing the relationship between exports limports of agriculture with select macro variables like GDP, total exports, agricultural production, and total imports, it is seen there is a significant negative correlation between agricultural exports and imports, but there was no significant relationship of trade with any other variable. However, since the early nineties the importance of agriculture as an export earner in the economy has increased.

estimate them for a set of cereals, oilseeds, cotton and sugarcane for the years from 1983-84 to 1993-94. Gulati, et. al., (1994), examine for 13 major commodities for looking into the export competitiveness from 1980-81 to 1992-93. Pursell and Gupta (1997) examine the NPC and EPC for sugarcane for the years 1981-88. The other set of estimates that are available are Datta (2001) for rice for the years 1994-95, and 1998-99 and Datta and Gupta (2001) for sugar for the years 1990, 1994 and 1995. Examining the protection coefficients on a commodity basis, it was seen that NPCs of rice and cotton were less than unity in all time periods. Rice was, therefore taxed for the producers in India seen in terms of NPCs. Gulati, Hanson and Pursell (1989) found that even wheat has been dis-protected along with rice and cotton. This is because the tradable inputs used in these crops were protected, while the crops themselves were dis-protected. NPC for groundnuts showed much more than one indicating high protection. It is found that groundnuts have a higher EPe than NPC because the protection of groundnuts exceeds the protection to inputs. Similarly, the NPC for sugar, rubber and edible oils were found to be more than one (Gulati and Sharma, 1991). The extended study on protection by Gulati et al., (1994) measures the NPCs for few cereals and horticultural products for the years from 1980-81 to 1992-93. The purpose of the study was however, to examine the price competitiveness than the protection to the commodities. In this study it was seen that the export competitiveness of rice has improved after 1986-87. The NPC under the importable hypothesis for wheat 10 showed that it is not an efficient export crop but it is capable of competing with that of imports since NPC under importable hypothesis is also less than unity. NPCs of sorgum and maize were also more than one. Among the horticultural products banana, grapes, sapota and lychee turned out to be highly competitive and so is the case with onion and tomato with NPC much less than unity. NPCs of Mango and potato were near to one and that of apple more than one.

Blandford, (1990), the literature on examining the impacts of liberalisation policies on economies has largely relied upon the use of Partial and General equilibrium models, where there are a set of behavioural equations on the supply and demand of different commodities and a set of market clearing equations, obtaining the equilibrium price and quantities. The partial equilibrium models can be in many
forms and they are differentiated on the basis of their structural characteristics. Major structural differences between models are in four areas, in terms of the a) commodity coverage, b) country coverage, c) temporal properties and d) the 'partiality' of their partial equilibrium. One of the crucial aspects of the partial equilibrium models is the way in which they represent the trade policies. The most popular approach has been to express the aggregate effect of policy as a tariff equivalent or the wedge between the domestic and world prices. Another approach is to estimate the value of producer subsidy or consumer subsidy equivalents.

Gulati and Sharma, (1991), examine the nature and extent of government intervention in product markets. The study shows that food grains were subject to significant intervention owing to their sensitive nature in the economy. The interventions are in the form of procurement by the government, maintenance of buffer stocks, etc. There has been an increase in the amount of subsidy provided for food crops in the early nineties as in the eighties. The degree of intervention in foodgrain market is seen through procurement of foodgrains, stocks, PDS off take and the government imports. The study also examines whether domestic profitability is in line with effective incentives using the panel data on effective indicators and domestic profitability across the states, with the fixed component model. The results showed that the crops that are internationally more competitive and less protected are crops with low profitability, which is not a good signal for resource allocation in the economy.

There are a few studies, which tried to examine the protection for agriculture sector as a whole. These studies have emerged to examine the compatibility of India's agricultural support policy to the Agreement on Agriculture (AoA) under the WTO. Under the AoA the total support to agriculture is captured through the Aggregate Measurement of Support. The estimates obtained by Gulati and Shanna (1994) based on support prices reveal that product specific AMS for India (for 17 products out of 22 total products for which India maintains market support programs) works out to be negative to the tune of (−) Rs. 242 billion. This forms (−) 27.74 per cent of total value of agricultural protection (excluding forestry and fishery). Non-product specific AMS works out to be Rs 46 billion, 5.24% of total value of agricultural production. By adding these two one 11 gets total AMS which
stands at (-) Rs. 196 billion which forms (-) 22.5 % of the value of agricultural output during the base period 1986-87 to 1988-89.

Bhaduri (1993), Chakravarty (1987), and Raj (1986), they argue that though the constraint on industrial growth is basically on the demand side, they urged the adoption of an alternative, agriculture-led industrialization strategy, which is based on internal rather than external demand. This, it is argued, is best achieved by a large-scale program of public investment in irrigation and other agriculture-related infrastructure. They believed that outward orientation would lead to highly skewed distribution of incomes and this would also lead to generating more demand for consumer goods among the higher income groups, and at the same time would lead to larger deficit on the BoPs current account, making the economy as a whole much more vulnerable to the vicissitudes in world trade.

Nayyar and Sen, (1994) make a comparison between the domestic wholesale price index and indices of average unit values in international trade in agriculture for a set of importables and exportables for the period from 1960-61 to 1990-91. The comparisons show that the divergence between border and domestic price movements has increased in the late eighties and early nineties and is much more marked for importables than for exportables. The study also examines the domestic and world price differences for some of the traded agricultural commodities in India. Through the comparison, it is seen that world market in agricultural commodities is less stable than the Indian domestic market and hence with the liberalisation, the volatility in world prices would be transmitted to domestic prices. However, the comparison of prices would be more meaningful when the prices are adjusted for the exchange rate, inflation and time series properties.

Kumar and Mittal, (1995), examine the determinants of tea trade in India through an export function where export is taken as the function of share of India's production to world production, share of consumption to production, world demand, unit price in dollars and the exchange rate. Here no variable seemed to have explained the exports of tea from India. Prices playa larger role in liberalised trade scenario. The relationship between the domestic and world prices is expected to be more significant in such a situation. Some studies have looked into the movements
in the domestic and world prices of agricultural commodities and the mechanisms to reduce the price fluctuations under prevailing policy situations.

**Pursell and Gupta, (1997),** while estimating the EPC for selected 9 agricultural commodities consider three major inputs that go into the production, i.e., fertilizer, seeds and machinery. They estimate the EPC for each crop for individual state in India. A weighted average of the state level indicators has then been calculated using total value added at observed market prices in the total production of the crop in each state.

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

**Gulati and Kelly, (1999),** measure the efficiency gains of liberalising trade in agriculture on rice, wheat, pulses, sugar, oilseeds and cotton. To analyse such changes supply and demand models are specified. Demand system is divided into three groups, urban demand, rural demand and foreign demand. Foreign demand is treated as a residual after estimating the domestic demand and supply equations. Each supply equation represents a supply function, which depends on the crops' own price, price of the substitute crops and price of inputs. Similarly, the demand depends on its own price, prices of other commodities and on income. Solving these equations for policy variables, changes in supply, urban demand and rural demand is obtained. The foreign demand component is estimated as a residual, after estimating the supply and demand systems. The model simulates the impact of unilateral trade liberalisation on selected crops by calculating the effects of replacing the prices of wheat, pulses edible oils and cotton with border price equivalents. In addition to the impact of commodity/crop output price liberalisation, the impact of increases in the prices of irrigation water and fertiliser have also been simulated. This is to ascertain whether and to what extent the estimated changes in production and exports remain sustainable if input prices are raised along with output price adjustments. The results
are presented under four alternative scenarios, first, reducing excess demand or price and aligning the domestic prices of wheat, pulses, oilseeds and cotton with their border price equivalents; second, scenario I plus 50 percent increase in irrigation water charges, third, Scenario II plus 29 percent increase in fertiliser prices (reducing fertiliser subsidy to farmers by 50 percent and the fourth scenario has scenario II plus 58 percent increase in fertiliser price (reducing fertiliser subsidy to farmers by 100 percent, which means raising fertiliser prices to their border price equivalents. In most of the scenarios it is seen that there is substantial increases in the production of wheat, cotton and rice and declining production of oilseeds and sugarcane. However, the decline in oilseed production seems to be smaller relative to the price cut and the correspondingly large benefit to edible oil consumers. It seemed unlikely that trade liberalisation would require very large production adjustments. In most scenarios the increased supply coupled with reduced consumption of rice, wheat, sugar and cotton leads to an increase in the export volumes of these commodities. The export volumes of these commodities remain sustainable even with an increase in prices of inputs.

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

**Mehta, (2000),** estimates the likely increase in India's imports due to the removal of QRs of all items of imports as per the requirement under the WTO. The likely increase in India's import due to removal of QRs has been estimated by using an econometric model. The model has been defined by an import function wherein the import of a commodity group is a function of total imports, import price of the commodity group, tariff rate of the importing country, index of QRs for the commodity group. The projections have been done separately for more than 50 commodity groups defined by different chapters of HS classification. Among the agricultural commodities the results show that India's imports are likely to shoot up for chemical fertilisers, vegetable textile fibers, coffee, tea and spices.
Santosh Sachdev, (2000), the study in his book “Agricultural Exports of India - Lessons from East Asia” discusses about comparative advantage in agricultural exports has received scant attention. The study is based on the fundamental premise that India being a low income agricultural economy enjoys comparative advantage in agricultural products and labour-intensive manufactures. An increase in the share of agricultural exports in total exports would lead to better performance of her external sector.

Srinivasan and Jha, (2000), analyze the effects of liberalising food grain trade on domestic price stability using a multi-market equilibrium model in which the direction of trade is determined endogenously and world prices are sensitive to the amount traded by India. The study examines the effect of liberalising external trade in two major food grains rice and wheat, on their domestic price variability in the absence of any government intervention. It then considers the case where the government operates the price band stabilisation schemes to stabilise domestic prices. They use a dynamic stochastic simulation modal with a multi-market equilibrium approach where prices, consumption, production, trade and stocks of rice and wheat are all determined simultaneously. Their results show that contrary to popular belief, freeing of trade by India leads to greater price stability even though world prices are more volatile.

Chand and Jha (2001), examine the impact of liberalisation in agriculture on producer surplus, consumer surplus and net social welfare in the case of all major crops grown in the country like rice, wheat, maize, sorghum, few edible oils, pulses, cotton and jute. They examine the price transmission due to liberalisation, i.e., the transmission in the world price to that of the domestic who issues price and to that of the farm level prices.

This is examined in two scenarios. The first scenario assumes that domestic prices in the country would be adjusted to the c.i.f. or fob prices of importables/exportables received or paid by the country through trade taking into account the internal cost of moving produce between a producing area and the port. The second scenario assumes that the country would receive international prices for exports and it would also be paying international prices for imports. The impact of trade liberalisation is then studied by adjusting domestic prices to international
prices. In the case of rice it is seen that the domestic price increases by 29 percent if traded at the international prices and 2.4 percent if traded at the f.o.b prices. Corresponding to these changes the farm level price increases by 2.5 percent and 29.5 percent if the reference price is f.o.b price and international reference price. A similar analysis is done for other commodities. The welfare analysis through the difference in the producer and consumer's surplus is done by obtaining the elasticity of demand and supply of the selected commodities along with the price transmission between the wholesale and farm level prices. The net social gain turns out to be positive in the case of rice, sorghum, mustard and arhar. In the case of wheat and soyabean there seems to be a net loss in the welfare.

From the review of above models we see that there is consensus among the results, in showing that liberalisation in non-agricultural trade is more effective in increasing trade and growth in the agricultural sector than liberalisation in agricultural sector. Liberalisation in agricultural sector too is effective in increasing the GDP in agriculture. The relationship between trade and GDP in agriculture is indirect through the terms of trade effects. However, there are certain limitations in forecasts of such models. Since the agricultural economy is in a total transition the forecasts are made on the basis of data before the structural break in the economy. The forecasts are made on the basis of the reference scenario, which is ex-ante for an ex-post situation. Similarly, capturing the policies using the indices like the protection coefficients or subsidy equivalents based on prices may lead to misleading results due to the imperfections in the agricultural markets even after complete liberalisation through the policies.

Datta, et. al., (2001), examine the changes in the composition and direction of India's agricultural trade in the reforms period classifying the time period 1986 to 1991 as pre-reform and 1992-97 as post reform's years. It is seen that India has achieved a sharp change in the composition of her exports but India has been able to achieve only marginal increase in the share of exportable, whose relative unit value is increasing or remaining constant during the post reform period. India has significantly increased the share of items whose relative unit value IS less than unity and that too is declining in the post reforms period. Similarly, in the case of imports, India has stopped importing a large number of primary commodities while moving
in the direction of value added and processed agricultural products. But this study has the limitation of considering the time period from 1991 onwards as the liberalisation period for agriculture. Since it is also seen through the review of policies that liberalisation policies have not directly been directly applicable to agricultural commodities, attributing the changes in trade to the policies would be misleading. We do not come across any studies trying to examine the determinants of trade in agriculture.

Devinder Sharma, (2001), conducted study on 'Impact of WTO on Indian Agriculture' and presented his view through his article “WTO and Indian agriculture: Trading in food insecurity”. His opinions those six years after the WTO came into existence, on January 1, 1995; the anticipated gains for India from the trade liberalisation process in agriculture are practically zero. He argues that six years later of WTO establishment, the measures of Agreement on Agriculture to liberalize agricultural trade have only protected the farmers and the farming systems of the developed countries. According to Agreement on Agriculture rule India should open its economy at 4% for imports. So India was forced to either phase out or eliminate the quantitative restrictions (QRs) on agricultural commodities and products latest by April 1, 2001. India has, therefore, opened its market and, in turn, made the farming community vulnerable to the imports of highly subsidized products. Already, cheaper imports of skimmed milk powder, edible oils, sugar, tea, areca nut, apples, coconut, etc, have flooded the market. He also points out our attention on creating another box on WTO, food security, as a mechanism for safeguarding developing country’s vulnerability to cheaper imports. What is being forgotten is that a developing economy, such as India's needs a food security system that looks much beyond management of scarce supplies and critical situations.

Khan (2001), has reviewed Pakistan’s experience with the implementation of Agreement on Agriculture shows that it has not defaulted on its obligations and commitments under the Agreement and has rather gone far ahead of the Uruguay Round (UR) requirements. However, due to the developed countries’ increased protection and subsidies that have denied the market access opportunities to Pakistan, it could not realize the expected gains in terms of exports and growth.
Pakistan like the Cairns Group is rightly in support of fast liberalization of trade in agriculture.

Satish Y. Deodhar, (2001), conducted study on quality matters of Agri-food through his paper on “In a Freer WTO Trade Regime, Food Industry Must Focus on Quality management”. In the new WTO led freer trade environment, Indian food industry can compete globally only if it is price and quality competitive. While many have addressed price competitiveness, sensitizing food industry on the importance of quality competitiveness has become essential. Mainstream management research has studied quality management in manufacturing sector extensively. However, there is scant attention paid to quality management in food sector. He also attempts to relate various dimensions of quality and quality management systems in the context of food industry. In a liberalized world, it is the price and quality competitiveness that is going to generate more jobs and income domestically, earn or save precious foreign exchange and ensure food security to the nation. In fact, Indian food industry is faced with asymmetric trade opportunities. In this context, a tangible system an agribusiness could employ in a reasonably well-planned manner is the HACCP system. HACCP is a Quality Assurance system, and, although ‘safety’ of food products is the overriding quality dimension considered in this system, it provides a systemic approach to address other dimensions of quality as well. At this time there are a number of foreign consultants and a few Indian consultants who specialize in development of HACCP system for individual firms. These consultants could be an expensive proposition for small entrepreneurs. However, some training programmes on HACCP may be initiated by central or state governments that impart HACCP training to employees and entrepreneurs of food companies. In fact, with the long-run perspective in mind, there is a need to conduct management development programmes on food quality issues. Such programmes will not only sensitize the entrepreneurs to quality as a competitive weapon, but prepare them to develop their own strategic quality management practices. In a freer WTO trade regime, food industry must focus on these issues in right earnest.

Anil K. Gupta, (2002) elaborates on the role that on that intellectual Property Rights (IPRs) can play in creating global presence for the farm sector in Gujarat. He argues that a stronger IPR regime could provide impetus to the creative and
innovative elements of our society to assume leadership for future growth. The potential of grassroots innovation is important according to him for generating green technologies and the need for developing a low cost system for protection of IPRs to encourage such innovation. Anil K. Gupta also takes up some specific issues that have been raised on the legislation and legislative proposals in India on patents, biodiversity and plant variety protection.

Anwarul Hoda and Ashok Gulati (2002), discussed through their paper entitled “Indian Agriculture, Food Security and the WTO-AOA” about the matters of food security in light of WTO Agreement on Agriculture. According to them trade liberalization leads to greater integration of Indian agriculture into world markets through removal of restrictions on exports and imports and this is threatening India’s food security. This would wipe out the production base, creating unemployment and deepening poverty. Similarly, exports of agricultural produce would reduce domestic availability of cheap food. Also, the price volatility accompanying liberalization would push the poor to the very brink of destitution given their limited capacity to bear risks. This is articulated in statements such as this: “importing agricultural commodities into India means importing unemployment into the country”. India has no reduction commitments, either with respect to domestic support or export competition. As a developing country, India also benefited from additional exemptions on investment subsidies, input subsidies to resource poor farmers, etc, under the Special and Differential Treatment. Against this background of implementation experience, it is now time to ask if the AOA has threatened India’s food security.

Anwarul Hoda, (2002), described as an editor through his book entitled ‘WTO Agreement and Indian Agriculture’ indicates that in India, the WTO Agreement has been dogged by controversy from the very beginning. This volume attempts to capture this ongoing debate. An interesting feature of this book is that it is interactive. Nine papers on the subject have been interspersed with arguments and counterarguments on them to flesh out the various strands in the controversy making it comprehensible to the interested reader while placing a wealth of data before the expert.
Ashok Gulati, (2002), undertakes an examination of the implication of the implications of the Uruguay Round commitments made by India on agriculture from the perspective of food security. The starting point for him is the definition of food security adopted at the World Food Summit in 1996 as “when all people, at the times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”. In his analysis, economic access to food occupies central places for assuring food security to the people in a low income country like India. He also makes a number of recommendations for the improvement of India’s food and agricultural policies and in respect of India’s stand in the new agricultural negotiations.

Gopal Naik and Tamanna Chaturvedi, (2002), analyse India’s export and import competitiveness in farm product in order to come to a conclusion on the opportunities provided and challenges thrown up by the WTO Agreement on Agriculture. They have factored into the analysis the impact of the implementation of the Agreement, changes in policies in major developed countries that export agricultural products as well as projections of the domestic and international supply and demand of these products. In conclusion they offer suggestions on the level of tariff protection needed in India and the position that India should take in the current negotiations.

Ramesh Chand, (2002), Trade Liberalization, WTO and Indian Agriculture, is an outcome of the series of research studies undertaken by the author on the theme of WTO, Trade Liberalisation and Indian Agriculture during the last six years. The book compares trade performance and trade flows of agricultural commodities in pre and post WTO period to find the impact of Uruguay Round Agreement on India's agricultural trade. The author presents in depth analysis of behavior of international prices and discusses implications of volatility in international prices for domestic agriculture under liberalized trade. The book explains the role of WTO and cyclical nature of international prices in affecting Indian agriculture and its competitiveness. Contentious issues in trade and in implementation of Agreement on Agriculture (AOA) and strategy for future negotiations are discussed in detail. The author emphasizes changes in domestic infrastructural, institutional and legal framework to improve competitiveness of Indian agriculture and its capability to face the threats
and opportunities thrown by the new trade agreement. The book presents factual position relating to global agricultural trade before and after WTO and broad issues concerning developing countries. Issue of food security in relation to trade liberalisation has been addressed separately. Policy conclusions and future strategy for adjusting to post WTO situation are presented towards the end.

**Samar K. Data, (2002),** discusses issues related to India’s non-trade concerns (mainly food security and environmental aspects) and trade matters (import and export competitiveness) and provides an economists critique of WTO framework. He then attempts to spell out appropriate domestic reform measures and international negotiations strategies to be pursued by India in order to meet the challenge to Indian agriculture posed by the process of globalization and to convert threats into opportunities for developing agriculture and enhancing export earnings.

**Satish Y. Deodhar, (2002),** examines the implications of the Agreement on Sanitary and Phytosanitary Measures (SPS) and the Agreement on Technical Barriers to Trade (TBT) for India. Food safety and quality norms in importing countries affect trade in agricultural products. In order to minimize the adverse effects for India’s exports of these norms he suggests steps for encouraging the adoption of the food quality management system called Hazard Analysis and Critical Control Points (HACCP) and for training manpower to handle post- harvest quality management practices and food processing activities. He emphasizes the need for India to participate actively in the development of standard undertaken by international standardizing bodies and for certain amendments in the SPS agreement.

**Sompal, (2002),** examines in general terms the implications for India of the Agreement on agriculture for India and makes some suggestions on the stand that India must adopt at the current negotiations on the subject. He covers also the questions relating the widening of the agenda of the proposed round of multilateral trade negotiations and the stand that India must take on these boarder issues. He also dwells on the need for domestic policy reforms in India including deregulation and decontrol of internal and external trade and processing of farm products and pleads for increasing public investment in agricultural infrastructure.
Swaminathan, (2002), discusses about Indian agricultural crisis through “Why Indian farmers need WTO” Now a day’s agriculture crisis in India is excess of production and not the shortage of production. We have a food grain mountain of over 60 million tonnes, as well as a mountain of unsold sugar. The transformation from scarcity to excess should have made India a great agricultural exporter. Instead, Indian farmers are angry and fell in misery. Exporting is reduced because of global agricultural prices have been falling for two decades It shows that between 1980 and 2001, the price of rice crashed from $571/tonne to $179/tonne; of wheat from $219/tonne to $131/tonne. The same step downtrend is evident in other agricultural commodities like cotton, sugar, coffee, soyabean, maize, tea, rubber, beef, coconut oil or palm oil. This was happened because of every country in the world has subsidised agriculture so much for so long that surpluses have grown everywhere. As incomes rise, people spend an ever smaller proportion of income on foods. Meanwhile, the spread of new technology the world over has revolutionized farm yields. The combination has meant rising gluts. Some countries have diversified into non-traditional crops, creating further surpluses. But the biggest reason for gluts remains huge subsidies in Europe, the USA, and Japan. Farmers are a powerful vote bank the world over. They force governments to keep subsidies and import tariffs high. Every country is subsidising exports at less than cost, so prices are crashing. In such circumstances, global prices represent massive dumping. Obviously, India needs to diversify out of agriculture into industry and services. But 60 per cent of the population is still mainly in agriculture, and cannot be redeployed quickly. Besides, modern technology keeps reducing the employment potential of industry, and indeed of agriculture. So our agricultural crisis is becoming an employment crisis. In sum, few things are more important for India than a globally agreed reduction in agricultural subsidies under the WTO. Predictably, India’s own stand at the WTO has been myopic and hypocritical. He concludes that Indian farmers do not need ever-rising subsidies. What they need is freer international trade. That is the path to prosperity.

Vijay Paul Sharma, (2002), discusses on the implementation of Uruguay Round commitments by the major industrialized countries with special reference to dairy products. He brings out the deficiencies and shortcoming both in the framework of
the WTO agreement and the modalities of the negotiations, which led to the wide gap between expectations and actual liberalisation effected by these countries. In conclusion he lists out a number of issues that need to be addressed in the resumed negotiations in order to reduce or eliminate the economic distortions that continue to afflict world agriculture in general and the area of dairy products in particular.

M.G. Basavaraja (2003), this book is the outcome of a seminar on the theme “World Trade Organisation Regional Trading Arrangements and India”, organized by the Division of Economics, Mysore University, Sir, M. Visvesvaraya P.G. Centre, Mandya during 17th and 18th of April 2002. This book consists of 31 papers contributed by scholars from different Universities/ Institutions. This books is divided into five parts. (i) WTO and its Trade Policy (ii) WTO and Indian Agriculture (iii) WTO and its Environmental Policy (iv) Regional Trading Arrangements and India World Trade Organisation: WTO is the only international organization dealing with the international rules of trade between member countries. The main function of WTO is to ensure that trade flows as smoothly, predictably and freely as possible. The WTO is as much about law as it is about trade. The total number of membership of WTO is 144 (2002). Mr. Supachai Panitch Pakdi is the Director-General of WTO. Regional Trading Arrangements RTAs are a part and parcel of the present international economic order. RTAs, called a “spaghetti Bowl” due to their overlapping nature, are accepted as the “Second Best” of multilateralism. The EU, the NAFTA, the ASEAN, the SAARC, the MERCOSUR, the Australia-New Zealand Closer Economic Relationship Agreement etc. are some of the examples of RTAs. From 1947 to early 2002, GATT/WTO had been informed of the creation of more than 198 RTAs, although some no longer exist or they remain insubstantial. India is one of the founding members of WTO and SAARC. In the last seven years, India has won disputes against US relating to import restrictions on woven wool shirts/blouses, shrimps/shrimps S. products; against the EU concerning anti-dumping duties on cotton type bed linen; and against Turkey in the matter of imports restrictions on textiles/clothing. India has also lodged complaints against the imposition of anti-dumping duties by South Africa on pharmaceuticals, by Brazil on jute bags and by the EU on cotton fabrics. The US and the EU have won the cases against India on patents in pharmaceuticals, and import
restrictions on agriculture/consumer goods/automobiles. In the next few years, the WTO’s DSM might well be inundated with disputes relating to new member of WTO’s China.

**Mishra and Rao, (2003),** examine whether the trade policy and devaluation of rupee have helped in raising agricultural exports and how the changes in the trade policy introduced during the nineties have influenced the domestic intersectoral terms of trade through which the impact of macro policies such as monetary, exchange rate and trade are transmitted to the agricultural sector. It was seen that the lower tariff regime initiated in the process of economic reforms in 1991 among others, while reducing the relative prices of manufacturing, has influenced the terms of trade in favour of agriculture and has raised private investment in agriculture. These have helped in increasing the aggregate crop output over the period and this along with the devaluation of the rupee has helped in raising the agricultural exports.

**Vandana Shiva, (2003),** critically examining WTO Agreement on Agriculture through her article “Free Trade Industrial Agriculture Rules Threaten the World’s Farmers: The World Trade Organization Agreement on Agriculture. According to her modern day’s agriculture is ruling by corporate world where small farmers are unable to compete with cheaper imports. WTO predicts that through Domestic Support the developing countries and developed countries scientifically reduce subsidies to producers. However there is a false assumption that this will make small farmers and the Third World more competitive and lead to prices that reflect the true cost of production. And, the articles on Domestic Support target only a small fraction of subsidy reductions in agriculture. Additional subsidies enjoyed by global agribusiness and trading interests, such as subsidies for investment, fertilizer, marketing, and infrastructure, meanwhile, all are exempted. Through Market Access WTO demand to convert all non-tariff measures on imported foods to ordinary custom duties. Through this developing countries compelling to avoid even quantitative restriction which is used to protect domestic farmers from highly subsidized food imports. So farmers of developing countries are suffering big losses. Through export competition WTO asks for removal of export subsidies, but this article helped E.U and U.S to sell more of their product on world market. She also given some suggestion measures like there should be a freeze on all further trade
liberalization of agriculture and on implementation of current rules. And an exemption clause should be introduced into the WTO that allows countries to keep agriculture outside trade liberalization. Export subsidies in all forms should be removed, including the disguised subsidies in export guarantee and credit schemes, investment and transport.

**Vibha Mathur, (2003),** his book, 'India: Foreign Trade Policy and WTO 1991-2003' covers the past, the present and the future of India's foreign trade, with focus on developments since 1991. More importantly, it discusses the interface between India's foreign trade policy and rules and regulations of WTO. It also looks to the future of India's foreign trade in the context of WTO-related current issues. Prior to mid-1991, foreign trade of India suffered from strict bureaucratic and discretionary controls. To reduce controls, simplify procedures and to create a congenial environment for trade, the Government made a Statement on Trade Policy in Parliament on August 13, 1991, ushering a new era in the foreign trade policy of India. In early 2002, the Government announced a Medium-Term Export Strategy (MTES) for 2002-07, providing a vision for creating a stable policy environment with indicative sector-wise targets for achieving 1 per cent share for India in world trade by 2007. The new EXIM policy 2002-07 also seeks to usher in an environment free of restrictions and controls.

**Agnes Nyaga, (2004),** Vice-president of ORIGIN for Africa and representative of the Kenyan Tea Board, Kenya presented an African perspective of the fight against costly abuses and free riders and the importance of extension for developing countries producers. Explaining that GIs are a new concept for African countries, Mrs Nyaga indicated the necessity to continue to better develop the awareness of the African producers on the potential of this intellectual property right. For her, GIs can help producers to better market their unique and differentiated products and ensure better market access. Taking the example of the Kenyan tea, she explained how GIs can allow producers to benefit from the added value brought to the products along the supply chain. For Mrs. Nyaga, “GIs can play an important role for African countries which have an economy based on agriculture. They can contribute to the realization of government policies on poverty eradication and sustainable development”.

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Brigadier Anil Adlakha, (2004), Executive Director, All Indian Rice exporters Association, India ND Vice-president of ORIGIN for Asia recalled that the producers’ of the GI’s objectives with regard to the enhancement of the protection of GIs in the DDA cover both the extension of the protection under Article 23 of TRIPS Agreement to all GI products and the establishment of a legally binding multilateral register. He also pointed out the advantages for the protection of GI’s and the costs and their importance for consumers. He concluded by saying: “the WTO must respond positively to our request as better GI protection would benefit millions of people who are depending on traditional and local GI products. This could become a key success factor for the Doha Development Agenda (DDA)”.

Dawnine Dyer, (2004), representative of the Napa Valley Vintners Association, USA gave an American perspective on the ongoing negotiations on GIs in the DDA, explaining the importance of a better GI protection for Napa Valley wine producers. Explaining the system of protection that exists in the United States and in the State of California for the protection of GIs for wines, Mrs. Dyer recognized the economic value of place and place names for the commercialisation of typical products such as wines. Such products take all their characteristics, qualities and reputation from the place where they are produced. She also pointed out the huge costs that Napa Valley wine producers have to defend their trademark “Nappa”. Outlining some deficiencies of the current protection existing for GIs for wine in the US, she stated the strong interest and support of her association to enhance the protection of GIs for wines by the US government, in order, for instance, to better prevent the abusive use of GIs in advertising or trademarks that mislead the public.

Elisabeth Barham, (2004), assistant professor at the university of Missouri, USA presented her research on the specificity of geographical indications as an intellectual property right and the interest of GI in a development perspective. Following the completion of case studies in countries like France, Portugal and Canada that showed that geographical indications (GIs) can support local development and sustainable development, Dr. Barham started preparatory works to establish a sui generis protection of GIs for agricultural products in the State of Missouri in the USA. Dr. Barham considers that “GIs have an important role to play if we are building a system of trade where local can be part of global”, especially
because GI is the only intellectual property right that relates to a specific place. GIs belong to a region and it is not possible to move them from their territory. Moreover GIs make it possible to maintain the local characteristics of the product they identify and therefore their intrinsic qualities. In her research, Dr. Barham found that GIs can also contribute to developing employment in decentralised regions and other economic activities like tourism. Dr. Bahram concluded by hoping that producers will be able to benefit from a system of GIs that will ensure fair trade in the global trade for small producers located in decentralised regions.

Feng Li Ming, (2004), Director, Camus Cognac, China gave a Chinese perspective on the ongoing negotiations on GIs in the DDA, explaining the interest of GIs for Chinese producers and the importance of a better protection of GI at the international level. The legal work on the establishment of a protection for GIs in China started in 1994 with the question of the protection of the French GI “Cognac”. In 2000, a Ministerial decree was adopted ensuring the protection of GIs in China. More interesting was the fact that even without any legal protection the notion of GIs has been very present in the Chinese mentality for century: the example of the Long Jing tea trees selected by the imperator of China is the clear illustration of the understanding of the GI concept. China is a country with a very long agricultural tradition and very traditional and typical products. Several products already deserve a protection as GI in China, such as “Long Jing Tea, Shao Xing Yellow Wine, Moutai Alcohol”. Chinese producers have already seen the positive effects of GIs protection recuperating in particular the markets for yellow wine in third countries.

Hema Garg, (2004), WTO and Regionalism in World Trade, examines and evaluates the impact of the establishment of WTO and the various regional trading blocs on the pattern and development of international trade. It describes the interface between the new rules of international trade given by the WTO and the requirements of different trading blocks. The trading blocks focused on are: European Union (EU) in Europe, Association of South East Asian Nations (ASEAN), South Asian Free Trade Area (SAFTA), Asia Pacific Economic Co-operation (APEC) in Asia, and North American Free Trade Areas (NAFTA) and Common Market of the Southern Cone (MERCOSUR) in Americas. WTO is expected to administer its trade agreements, provide forum for trade negotiations, handle trade disputes, monitor
national trading policies, provide technical assistance and training to developing countries, and co-operate with other international organisations.

**M.M. Sury, (2004)**, explains the key reform measures undertaken in various sectors of the Indian economy since 1991 in his book titled *Indian Economy in the 21st Century: Prospects and Challenges*. It examines their rationale, contents, and impact. Furthermore, the work puts in perspective the emerging lessons for the future. To provide the necessary backdrop to the new order, appropriate comparisons are made with the policies pursued prior to reforms period. However, the focus of the study is on current scenario and future prospects in various sectors of the Indian economy. The overall approach to the subject is descriptive, analytical, and at places normative. The new Government at the Centre, which assumed office in May 2004, has given enough indications, through its Common Minimum Programme (CMP) [later rechristened as National Common Minimum Programme (NCMP)] and the 2004-05 budget proposals presented to Parliament on July 8, 2004, that it intends to proceed further with the economic reforms programme underway.

**Stefano Fanti, (2004)**, Managing Director, Parma Ham Consortium, Italy presented a European perspective on the ongoing negotiations on GIs in the DDA. He explained the importance for producers and consumers of the extension of the protection of Article 23 TRIPS Agreement to all products and the establishment of a multilateral register. Mr Fanti pointed out some of the problems that Parma Ham producers face when trying to get a GI protection for their product in many countries. He underlined why the protection of GIs through trademarks is not always adapted: refusal of the registration of the trademark “Parma” as being descriptive, prior trademarks, etc. He also outlined the disadvantages of Article 22 TRIPS Agreement protection and the fact that the protection of Article 23 TRIPS Agreement would be more effective to prevent the abusive uses of the Parma Ham GI. For Mr. Fanti: “the extension of the protection of Article 23 TRIPS Agreement to all products and the establishment of a legally binding register for GIs for all products are essential tools to ensure in the future a more effective protection of GIs at the international level”.

**Zoubida Charrouf, (2004)**, representative of the Argan Oil producers, Morocco studied the potential of GI for developing countries through the example of the
Argan Oil. The project of the Argan Oil is the perfect illustration of the numerous and positive impacts that a well organised and developed GI can have on the local, economic and social development of a region: Thousands of people live on the production of the Argan Oil in a very poor region of Morocco and most of them are women. The valorisation of the product is accompanied by development of new economic activities in the region, like tourism or little shops close to the cooperative. Alphabetisation campaign has been launched in order to enable the continuity of the project among the women. Trees are planted regularly to enable a production on the long run, to help the fight against the progression of the desert and the erosion of the land, to prevent rural exodus and to ensure a preservation of the biodiversity. But Mrs Charrouf clearly pointed out that to enjoy all these benefits, it is essential to valorise the product and to make the local producers aware of its great value. Scientific researches were therefore launched confirming the medical, cosmetic and nutritive qualities of the Argan Oil, all qualities that were part of the traditional knowledge of the local population. In addition, a process aimed to get together all the actors of the Argan Oil was launched in order to get a protection through GI. Mrs. Charrouf is convinced that a protection through GI is the best solution to allow this project to continue to have its positive impacts. The development of GI on a typical product such as the Argan Oil will provide increasing income for the local producers and will enable them to keep the economic benefits in the region by controlling all the fabrication steps of the production.

Gajendra Pratap, (2005), presented his view in article domestic subsidies. The agriculture subsidies can be broadly discussed under two categories one is export subsidy & another is domestic subsidy, he also focused on following issues - Subsidies pro-poor in the developed country and subsidy impact on the Indian economy. The growing volume of subsidies particularly the “Green Box” subsidies are the new excuse instruments of the developed countries for projecting a pro-poor image. The Weilong Zhang presents his views in Case Study: Agricultural Subsidies and Development- The paradox of agricultural subsidies, MGMT 6350, International Business February 11, 2005. The subsidies are not only detrimental to the poor farmers in developing countries, but are also, according to the theories of Smith, Ricardo, and Heckscher-Ohlin (Chapter 4 of International Business), a burden to the
taxpayers of the developed nations and global trade as a whole. It is widely expected that the whole world would be better off today if agricultural subsidies were eliminated completely.

Parthapratim Pal, (2005), discusses through his paper “Current WTO Negotiations on Domestic Subsidies in Agriculture: Implication for India” about domestic support and their bad effect on developing countries on special reference to Indian agriculture. He opines that agriculture was among the most distorted sectors in international trade. The principal source of these distortions was the coexistence of very high level of domestic and export subsidies and almost impenetrable import barriers for temperate zone agricultural goods in developed countries. The Uruguay Round negotiations explicitly recognized the extreme trade distorting impact of domestic support and the necessity to impose restrictions on it. Domestic support encourages overproduction, which in turn increases supplies in world markets (by reducing import demand or increasing export supply) and depresses world prices. This paper analyses the present state of play of WTO negotiations and evaluates how effective the current WTO provisions will be to reduce domestic subsidies in developed countries. This paper looks closely at the domestic subsidy reduction provisions of the July Framework and analyses these issues, particularly from India’s point of view. This paper also reviews the post-July framework negotiations on agriculture and analyses the draft Hong Kong Ministerial text. The July Framework has been seen by many developing countries as a breakthrough that would eliminate billions of dollars in farm subsidies. The findings of the paper suggests that the broad framework of subsidy reduction, as outlined in the July package, can be considered as a step towards the right direction but it does not guarantee significant reduction in subsidies. India has followed a two pronged approach towards domestic subsidies in the current negotiations. On the one hand, India wants substantial reduction in domestic subsidies in developed countries. On the other hand, it proposes that there should be sufficient flexibility in the rules to allow developing countries pursue support measures towards non-trade concerns like poverty alleviation, rural development, rural employment and diversification of agriculture.
**Ramesh Chand, (2005),** wrote a paper on “Post WTO Agriculture Trade and Agenda for Negotiations on Agriculture” This paper 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 the main reasons for favourable/adverse effect on agricultural trade and draws lessons for future negotiations on AOA. He suggests that India needs to pay equal attention to what it agrees to do in its own market and economy and what other countries commit to do in their markets. And India need not be extremely defensive and inward looking. Indian agriculture has some strength which needs to be appropriately used to compete in the global trade. Major threats are from import and adverse impact on export result from low level of international prices. As a net exporting country India stands to gain from increase in international prices. Therefore, India should follow an agenda which leads to reduction in domestic subsidies, other kinds of support and export subsidies, particularly in developed countries, as those subsidies are the major factor for distortions and low level of international prices.

**Anil Bhuimali and Satrajit Dutta, (2006),** Globalisation has changed the trade pattern globally. More globalised nations have benefited from trade liberalisation reducing inequality, unemployment and poverty but less globalised players have become marginalised in the world economy. This, is fact, has reduced incomes and enhanced poverty. This book makes a humble effort in analyzing India's pattern of foreign trade in the World Trade Organisation regime. There is an exposition of India's trade during last fifteen years and side by side there has been a presentation of the functioning of the WTO in the developing nation’s context.

**Antonio vina, Lindsey Fransen, Paul Faeth & Yuko Kurauchi, (2006),** in their paper Reforming Agricultural Subsidies: “No Regrets” Policies For Livelihoods and the Environment stated that, Agricultural subsidies and their impacts on the poor and the environment are part of a complex web that determines whether agriculture can serve as an effective vehicle for poverty alleviation and sustainability in all countries. Even if meaningful reductions were agreed to in the Doha negotiations of the WTO, there is no certainty that the purported development goals of this trade round will be achieved. Poor farmers in developing countries may not receive
benefits unless these international decisions are accompanied by domestic policy reforms directed at making agriculture pro-poor and pro-environment.

**Kaliappa Kalirjan and Kanhaiya Singh, (2006),** discussed about issues related to the WTO’s Agreement on Agriculture from India’s point of view through their paper “India and the WTO's Agreement on Agriculture (AoA)”. Why India should work towards the success of the Doha Round is also discussed. They opine that, India does not have to worry about its subsidy, as it is already below the required line and it also does not have any domestic support to recon with. Moreover, the ongoing negotiations are likely to yield enough flexibility in product choice and tariff selection. Therefore, India should work towards the success of the Doha round and in the mean time make use of the opportunity to reform its domestic market to bring in more efficiency. With favorable bound rates for agriculture onboard, the negotiating framework of India must be different from that of other developing countries. The situation is highly tenacious for India, particularly in view of the fact that the developed countries have managed to link agriculture subsidy with the market access in services and industry.

**Anwarul Hoda and Ashok Gulati, (2007),** described about Indian agriculture in Doha Round of WTO point of view, through their book entitled by “WTO Negotiations on Agriculture and Developing Countries Book Description”. The World Trade Organization's Doha Round of trade talks has been plagued by a lack of concrete progress toward establishing a fair and harmonious agricultural trading system. Because the results of the Doha Round could have far-reaching implications for the trade and economic prospects of developing countries in the twenty-first century, it is critical for these countries to fully understand the issues involved in the negotiations on agriculture. However, there has been no authoritative analysis of the rules and modalities on which governments of developing countries can rely. This book, coauthored by an insider to the trade talks that led to the establishment of the WTO, fills this gap. It examines the implementation experience of key members of the WTO, and then traces the developments in the negotiations up to the recent impasse. In light of these considerations, and on the basis of a case study of India, the authors propose various elements of a negotiating position and strategy for developing countries. The authors offer tough but realistic recommendations.
regarding tariffs, market access, treatment of sensitive or special products, and other aspects of international trade.

Jessica Long, (2007), discussed about various reasons of suicide by Indian farmers due to WTO agreement through "WTO Kills Farmers: India Free Market Reforms Trigger Farmers' Suicides". In 2003, 17,107 farmers committed suicide. These suicides have become so common place that they are mystifying a nation and polarizing the debate over biotechnology. The Republic of India is one of the top twelve nations in the world in terms of biodiversity. Featuring nearly 8 per cent of all recorded species on Earth, this subcontinent is home to 47,000 plant species and 81,000 animal species. Simultaneously, India is home to the largest network of indigenous farmers in the world. Yet biotechnology has led to extreme environmental degradation in the region, threatening to replace its diverse ecology with corporate hybrid monoculture. The original Green Revolution was supposed to save 58 million Indian hectares. Today, 120 million of the 142 million cultivable hectares is degraded- over twice the magnitude that the Green Revolution attempted to save. In the Indian state of Punjab, 84 of the 138 developmental blocks are recorded as having 98% ground water exploitation. The critical limit is 80%. The result has had devastating impacts on the agricultural community, leaving exploited farmers with little choice of action. In the past six years, more than three thousand farmers have committed suicide in Andhra Pradesh that is six to ten farmers everyday.

Another problem is lack of loan facilities to get Indian farmers. In fact, non Indian farmers receive six times the amount of GDP that Indian farmers get, requiring an exorbitant amount of loans to be taken out. While 90 per cent of farm loans come from money lenders, they are charged anywhere from 36-50 per cent interest, placing them in a cyclical mode of poverty. The fact is that mass suicides have transformed these farmers into agrarian martyrs for peasants everywhere. Their deaths are inspiring significant social forces both by the government and among its citizens. In response to the crisis, the government has implemented compensation laws in which the victim’s family receives free electricity and $3,500. In response to economic disparity, the Indian government imposed a one year suspension for all agriculture loans while waiving interest.
Joseph A. Mc Mahon, (2007), book entitled “The WTO Agreement on Agriculture” provides an in-depth examination of the substantive provisions and the disputes that have arisen in each of these three areas. The WTO Agreement on Agriculture subjected agriculture to a set of international rules for the first time in the history of international trade. Ever since its negotiation, the Agreement has been at the forefront of the controversy surrounding the purpose and impact of the WTO itself. The commentary is structured around the three areas of reform initiated by the Agreement - market access, domestic support and export competition. In addition, the book situates these provisions against their background in pre-WTO regulation. It analyzes the operation of the 'Peace clause' and assesses the impact of the clause's expiration. The commentary concludes by assessing the Agreement's accommodation of and impact on developing economies, and examining the process of reforming domestic farm subsidies, one of the dominant issues currently confronting the WTO.

Munisamy Gopinath, (2008), wrote a paper about Domestic support in India’s point of view entitled “India: Shadow WTO Agricultural Domestic Support Notifications”. In this study, he broadly outlined India’s domestic support (DS) policies and our understanding of their classification and measurement for the purposes of official notifications. First of all he is describing about Indian agriculture at the beginning of WTO in 1995. India’s official notifications began in 1995 with green box support of nearly US$2 billion and limited use of special and differential treatment. The product-specific aggregate measure of support (AMS) was negative because external reference prices were larger than minimum support prices. Non-product-specific AMS, by way of fertilizer, electricity, irrigation, credit, and seed subsidies, accounted for about 7 percent of the value of agricultural production in 1995. In subsequent notifications, for 1996 and 1997, several key changes were observed. The first was the transfer of 80 percent of fertilizer, irrigation, and electricity subsidies from non-product-specific Aggregate Measurement of Support to special and differential treatment of low-income and resource-poor farmers. Shadow notifications, based on our understanding of the underlying methods, showed that green box support had grown to nearly US$8.0 billion in 2005. Non product-specific AMS accounted for about 1 percent of the
annual value of agricultural production for 1998-2005. With India’s general elections expected in early 2009, the immediate future includes popular policies such as credit subsidies and significant growth in minimum support prices. Nevertheless, non product-specific AMS would not likely exceed the limits proposed in the Doha Round (that is, 10 percent of value of production) even with popular policies. However, product-specific AMS would turn positive, especially in cereals, with high growth in support prices and the appreciation of Rupee as seen in recent years. There is a declining importance of agriculture as a source of India’s exports since 1995. Except for meat products, none of the major agricultural exports shows a clear upward or downward trend.

L.S.N. Prasad, (2009), is trying to highlight the benefits derived by developing countries especially India from agricultural trade due to WTO through his article “WTO Norms and Indian Agriculture”. According to him it is unjustifiable to criticize WTO by interested politicians, intellectuals and sections of the media have been focusing on some negative aspects of the WTO’s rules and regulations. Actually there are a number of articles in the WTO’ provisions that are useful to developing countries. These articles are meant to curb the exploitation of one member by another. In opines that domestic subsidy given by developed countries is higher than India’s even though where dependent population of agriculture for livelihood is less than 10%. India must reschedule its tariff line according to WTO. Thereby India is committed to reduce tariffs on 686 agricultural products. The average tariff on agricultural commodities was 115% before the agreement. After the agreement it has been reduced to 35%. We must recall, in this context that two decades ago India agreed at an international meeting to reduce the tariff either to zero or to a minimum level on the import of dairy products. And in the case of edible oils we agreed (binding) to impose a tariff of up to 150 percent but the bounded duty at present is 0. With a duty reduction on edible oils as low as 25%, hundreds of oil mills have closed down, groundnut farmers are unable to get a minimum price and even compelled to dispose of their product at huge losses. Then he point out some challenges of Indian agriculture in WTO contest. Firstly Indian agriculture needs lots of investment to have large scale production. By this we can reduce production costs. Instead of criticizing WTO we have to think of an
alternative system. Redistribution of land to the landless poor through the various land ceiling acts leads to fragmentation which will be a hurdle to improved production as well as productivity. Another challenge is concerned to Patent System. Plants such as neem, turmeric and products such as Basmati (scented rice) are patented or about to be patented by American companies. It is strange that in India these have been household plants used in cooking and for medicinal purposes since ancient times. The system of Ayurveda has existed since times immemorial. All medicinal products based on plants and plant products must be patented by Indian companies. Conceding the patent rights to an American based company is ridiculous and we have to take this up with the WTO’s Dispute Settlement Board (DSB) at Geneva.

M. Sankara Reddi, M. Ramesh and M. Chandrayya, (2009), in his opinion WTO is receiving the deepest indulgence of everyone, as it is affecting the major sectors of Indian economy and agriculture in particular now and more intensively in the coming years. A major concern growing with the increasing impact of WTO is, as to how the small and marginal farmers’ who dominate the Indian agriculture, depend heavily on agriculture for their livelihood, have small marketable surplus and operate under heavy constraints to be competitive in a subsidized agriculture production and trade regime, could benefit from WTO. The concern more often swings to the other side that the spreading tentacle of WTO with reduced tariff regime and increased access to Indian market for the products from subsidized agriculture could severally damage the agriculture based livelihood of majority of Indian farmers. The challenge to policy makers is how to protect Indian agriculture from the impending WTO threat, enhance the competitiveness of Indian farming and make farming a viable and self sustaining enterprise to improve and ensure livelihood security of the farmers. A strategy to address this challenge shall necessarily involve re-orientation and injection of market linked dynamism in Indian agricultural R&D, strengthening of supportive institutions to serve the resource poor farmers, and steering fast the change with appropriate policies and trained human ware.

Mohd Awais and Mohd Asif, (2009), argues that agriculture is both way of life and the principle means of livelihood to 65% of Indian population. Today, the best
farming technology in the world is available at an affordable price to Indian farmers. Even then, our yields are abysmal and our production is low. It is seen that there has been a country wide debate involving policy makers, scientists, NGOs and other stakeholders on the issue of IPR. They found that the intellectual property regime under the TRIPS agreements is more stringent than the existing one in India. This gives the innovators more incentives and protection and calls for more investment in R & D. Lastly, it may be appreciated that WTO offers considerable promise for Indian agriculture. It also envisages protection on various types of intellectual properties. Countries that fulfill the obligation of TRIPs will stand to gain many ways. So India should accept the challenge and seize this opportunity to make its agriculture globally competitive.

P. Arunachalam, (2009), starts his articles by calling readers, if you gone through last 17 years of economic dailies and economic magazines, business dailies and business magazines, even vernacular dailies and books written and also edited by different authors in Indian and abroad, you could see that around forty percent of the research articles and papers, editorials, reviews related World Trade Organization (WTO) and WTO related issues only particularly about agriculture. Why this particular area attracted this much attention from politicians, bureaucrats, academicians, business persons, critics in India and abroad? The simple reason is, this is the only organization at the world level where you could see a clear cut differences exist between developing countries and developed countries. He argues that the root cause of distortion of international trade in agriculture has been the massive domestic subsidies given by the industrialized countries to their agricultural sector over many years. This in turn led to excessive production and it’s dumping in international markets as well as import restrictions to keep out developing countries agricultural products from their domestic markets. Hence, the starting point for the establishment of a fair agricultural trade regime has to be the reduction of domestic production subsidies given by industrialized countries, reduction in the volume of subsidized exports and minimum market access opportunities for agricultural produces world-wide. He suggests that India has a uniquely important contribution to make at this point to restart the Round. This is to show some further flexibility on agriculture. Not to the extent of opening India’s huge agricultural subsistence
economy to global competition. But by moving where you can to allow other limited but real market access, including in some difficult commodity areas.

**Rais Ahmad, (2009),** he deals with the multi-faceted dimensions of Indian agriculture and our relationship with WTO through his edited book “WTO and Indian Agriculture”. The positive and negative aspects of WTO regulations starting with the Uruguay round agreement and extending up to the present day have been brought up very clearly. It also dealt with great clarity, the various implication of farm exports and imports for the well-being of farmers as well as the Indian economy as a whole. The Author explains food security, the livelihood security of the farmers and the welfare of the consumers.

**Syed Noman Ahmad and Dastgir Alam, (2009),** are examining the problems and prospects of India’s agricultural exports since the establishment of WTO through their paper “Impact of WTO on India’s Agricultural Exports.”. The establishment of WTO was expected to improve the economic condition of the farmers through increased agricultural exports all over the world, including India. The Indian farmers were expected to receive two important benefits namely, greater market accessibility and improved prices for their products. Developing countries always fear that due to free working of market forces the prices paid to their produce will decline and the quantity of exports will also fall because of unfair play of some developed nations under WTO regime. Being a developing country India also had its own apprehensions about these two basic questions of greater market access and price improvement for the exporters. However, the study has shown positive results towards these basic issues. As a member of World Trade Organisation the accessibility of Indian agricultural commodities has increased in the World market. The pricing situation is also better for Indian agricultural commodities under WTO regime. All the three groups of commodities have got higher prices. In the case of price improvement too, non-traditional items have maintained their position. These items have got highest price rise in comparison to other groups. The average price index value of non-traditional items is 195.73 followed by 147.37 and 120.93 for traditional items and the items of future potential respectively. Statistics reveal that the performance of non-traditional items is better than others. But it may be risky to rely on these items for boosting exports due to their uncertain behaviour. In this
situation it is better to concentrate on exporting the traditional items in coming years since their behaviour is comparatively stable. Moreover there may be a great export potential in the items of future potential because these items have shown an improving pattern in case of export quantity. This group may be full of opportunities in future but in absence of lack of infrastructure more importantly rural infrastructure and technological know how it is difficult to have an edge over other countries. Therefore, India needs to improve its infrastructure especially in the rural areas and upgrade its technical knowledge to convert the challenges into opportunities.

V. Bala Subramanian, (2009), discusses the negative and positive benefits of India as WTO member through his paper “WTO and Indian Agriculture Insight, Implication and Imperatives”. He notices some problems of Indian farmers. Firstly the governments of developed countries spend huge amounts on agricultural subsidies. This has resulted in the decline of prices of agricultural commodities in the world market. The policies of the Indian Government have compelled the farmers of the country to compete with cheaper foreign agricultural commodities when they have to spend more and more for ever increasing cost of agricultural inputs such as seeds, fertilizers, pesticides, electricity, etc. Increasing cost of inputs, decline in growth rates and lower prices of outputs have adversely affected the farmers and it has accelerated the indebtedness, desperation, destitution and starvation to a vast majority of rural people particularly the small and marginal farmers and tenant cultivators in India. He says two major factors are responsible for the present downfall of Indian agriculture. First, the government has substantially reduced the development expenditure in agriculture sector owing to its eagerness to reduce the fiscal deficit. Secondly, import liberalization has contributed in a big way for the reduction in prices of agricultural products. Having failed to get remunerative prices for their products, many farmers have curtailed their farm operations which in turn have increased unemployment among the agricultural workers. Thus import liberalization is a major cause for the existing plight of poor farmers. He analyzing that the crop uncertainties due to vagaries of nature and perish ability of most of the agricultural commodities make the supply erratic. Hence the alternating shortage and surplus resulting from bad and good harvests destabilise the prices and earnings for
the producers. This has made our export earnings uncertain and instable. Export earning instability will have an impact on domestic instability and reduce the efficiency. Hence India’s opening up of agriculture to the world trade and increased emphasis on production for exports is therefore likely to bring economic instability within the country and consequently, instability in the earnings of producers and their patterns of investment.

**Jagannath Lenka (2010),** current Issues in Indian Agriculture is an edited volume based on papers presented in the 44th Annual Conference of the Indian Econometric Society organized by the central University, Hyderabad and invited papers from the distinguished scholars. These papers highlight current agricultural issues relating to farmers' suicide, employment, growth, productivity, technology, diversification, finance and market. It is expected that the book will be useful to academics, researchers and the general readers interested in agricultural economics.

**Steve Wiggins, (2010),** said Input subsidies need to be contemplated with caution, with a clear consideration of the costs and benefits compared with conventional best practice of addressing market failures directly and using social policies to address social objectives with respect to poverty and food insecurity. In order to achieve these benefits, there will be a need for complementary spending on public goods. For agriculture, these usually consist of rural roads, agricultural research and extension, education, primary health care, and clean water. The working paper “The Use of Input Subsidies in Developing Countries” published in Global Forum on agriculture 29-30 November 2010 Policies for Agricultural Development, Poverty Reduction and Food Security OECD Headquarters, Paris.

**Zhangyue Zhou, (2010),** the paper (Achieving food security in China: past three decades and beyond) aims to review and assess China's food security practice over the past three decades with a view of drawing implications for further improving its food security in the future. A normative food security framework is used to assess China's food security achievements and examine any remaining and emerging issues in its pursuit for food security. He found China has done well in achieving grain security in the past three decades. However, it cannot be concluded that China has achieved its food security according to the normative food security framework. This is because there are serious problems in the aspects of food safety and quality,
environmental sustainability, and social stability. To achieve long-term food security, China has to tackle the wide spread issues of unsafe foods and foods of dubious quality, environmental pollution and degradation, and the establishment of a social security system.

**Thomas et. al. (2011),** stated that the emerging world demand for Indian agricultural commodities offers great opportunity. Indian agricultural exports have increased manifolds. However, the contribution of agricultural export in the total export of the country has decline. This study has explores the growth performance of India’s agricultural exports from 1991-92 to 2009-10, using compound annual growth rate and percentage share in total export of India as well as Gross Domestic Product. An in depth composition and structure analysis of the agricultural export is undertaken. The study has also examined the changing dynamics of the contribution of individual group of commodities in the basket of agricultural export.

**Sharma, (2012),** analysed the Doha Negotiations in context of domestic support to Indian Agriculture sector and pointed out that India has notified support after the establishment of WTO. Product specific support was negative and below the demines limit during the first decade. Non-Product specific support which includes subsidies on fertilizers. Credit, irrigation electricity etc. was also below the de minimus limit. Therefore, India does not have any obligation to reduce any bind of support to the agriculture support.

**Singh Kulwinder et. al. (2012),** analysed that India has a competitive advantage in a broader range of export commodities. The rapidly increasing world demand for India's exports has played a significant role in the satisfactory export performance. Apart from expanding world demand, India's export performance benefited from the competitiveness and market-wise distribution during the study period. The gap between actual growth and potential growth of India's exports is primarily attributed to their competitive strengths. Export promotion measures, adopted by Indian policymakers, have significant effect on its export competitiveness as it would be difficult for exports to sustain competitiveness in this era of global competition and flexible of exchange rate.
Mousavi et. al. (2013), has investigated the causal relationships among quantity of agricultural export and real exchange rate in India by using time series data for the period between 1980 and 2010. All the macroeconomic series used here are non-stationary, integrated at order one but not co-integrated. The long run relationships between exchange rates and agricultural export were explored by using co-integration analysis. A Granger-causality analysis has been carried out in order to assess whether there is any potential predictability power of one indicator for the other. The finding shows that there is no significant relationship between quantity of agricultural export and real exchange rate. In Other words, both the variables do not cause each other in either direction. The result also shows that the variables are not cointegrated, so there is no the long run relationship between agricultural export and exchange rates in India.

R. Rajendran et. al. (2013), has investigated that the trade volume of India is increasing slowly. At present we are in the position to view seriously the impact of increased Indian foreign trade on three important and closely related areas that are food security, water and environment. Study on the impact of foreign trade on these areas becomes need of the hour on the following grounds: Food security is severely threaten by stagnant food production; shrinking in food production area; slow down in yield of food crops; overall slowdown in the growth of agriculture; and, increase in absolute size of population and demand for food grains. Per capita water availability is decreasing sharply in the recent years; and, widespread water conflicts occur among water using sectors.

Solunkhe and Deshmekh, (2013), have presented their view in the article “An overview of Govt. agriculture Subsidies in India”. They point out that agriculture subsidies play vital role in the performance of agriculture sector. As per the economic survey Govt. of India allocate various agricultural subsidies for growth of agriculture sector. Agriculture subsidies are distributed by every country but it percentages in very low and percentage of dependent is very large in India. The Govt. of India takes sessions sector work as imp. Tool for the help of agriculture sector.