Chapter – One

Introduction

The Government of India plays vital role for development of agriculture and its allied sector. The government role is diverse and varied. Some of the cited reasons for vital role are self-sufficiency, employment creation, support to small-scale producers for adopting modern technologies and inputs, reduction of price instability and improvement of the income of farm households. This vital role can take a number of forms such as import-export policies and domestic policies like price support programmes, direct payments, and input subsidies to influence the cost and availability of farm inputs like credit, fertilizers, seeds, irrigation water, etc. Of all the domestic support instruments in agriculture, input subsidies and product price support are the most common. Various benefits are cited in justifying input subsidies: economic, environmental and social (World Bank 2008). Input subsidies can bring economic benefits to the society. Inputs like fertilizers, irrigation water and electricity have significant share in agricultural subsidies in India and fertilizer subsidy has attracted much attention of policymakers, and researchers in the recent past.

Agricultural subsidy is a governmental financial support paid to farmers and agribusinesses to supplement their income, manage the supply of agricultural commodities, and influence the cost and supply of such commodities. A subsidy, often viewed as the converse of a tax, is an instrument of fiscal policy. Derived from the Latin word ‘subsidium’, a subsidy literally implies coming to assistance from behind. In India, as also elsewhere, subsidies now account for a significant part of government’s expenditures although, like that of an iceberg, only their tip may be visible.

Agricultural markets are characterized by government interventions of varied forms. The peculiarities associated with the agricultural sector made the governments to intervene at different stages of production, marketing and
consumption of agricultural commodities. The interventions are made through direct measures like provisioning of subsidies in input and output markets, or through indirect measures like control of external trade with tariff or non-tariff barriers. With the Agreement on Agriculture (AoA) in the Uruguay Round of GATT /WTO, an attempt was made to formalise the removal or reduction of these interventions, which distort the agricultural markets. The rules and regulations governing agricultural trade covered in the clauses of AoA required the nontariff barriers to be converted to tariffs, reduction of tariffs over a period of time, and reduction of subsidies for production and exports of agricultural commodities. Agricultural policies now are therefore, governed by the rules under the WTO. Measuring the extent of changes in these policies and examining the impact of such policy changes on agriculture and the economy are crucial to the member countries of WTO. In India too, government interventions in agricultural markets are seen in many forms, like fixation of support prices, procurement of marketed surplus for the public distribution to the consumers, maintenance of buffer stocks, provision of input subsidies, imposition of restrictions on movement of products and control on external trade in inputs and outputs through the tariffs and Quantitative Restrictions (QRs). Liberalisation in external trade was one of the main packages of the New Economic Reforms in 1991.

Though agriculture was not vastly covered under these policies, the impact of other policy measures towards this sector cannot be neglected (Rao, 1995). It is seen earlier that agriculture has not remained unaffected by the reform measures in the country, as the indirect impacts of liberalisation of the economy in general, on agriculture is far more important than the impacts of liberalisation measures directly affecting this sector (Parikh, et.al., 1995). In addition, there were measures towards liberalisation in external trade in agriculture from mid nineties, to meet the internal requirements, and in the late nineties, to meet the requirements under the WTO. These measures have direct impact on trade in agriculture. Thus, given the nature of liberalisation and that of agriculture in India, the impact of liberalisation policies at different phases, on different agricultural commodities would be quite varied. The impact of such changes would also be felt at a macro level on related variables like the trade balance, the terms of trade, the level of prices and growth in agriculture and
in the economy. Examining the changes in incentives/protection given to agricultural commodities and analysing the implications of liberalisation measures for agricultural sector and the economy in general, are relevant in this context.

The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. Essentially, the WTO is a place where member governments go and try to sort out the trade problems they face with each other. WTO came into effect on 1 January, 1995 with the support of at least 85 founding members, including India. They deal with: agriculture, textiles and clothing, banking, telecommunications, government purchases, industrial standards and product safety, food sanitation regulations, intellectual property, and much more. But a number of simple, fundamental principles run throughout all of these documents. These principles are the foundation of the multilateral trading system. They spell out the principles of liberalization, and the permitted exceptions.

They require governments to make their trade policies transparent by notifying the WTO about laws in force and measures adopted, and through regular reports by the secretariat on countries’ trade policies. The WTO oversees about 60 different agreements which have the status of international legal text and consists of 29 individual legal texts. By promoting the "free trade" agenda of multinational corporations above the interests of local communities, working families, and the environment, the WTO has systematically undermined democracy around the world.

It is clear that the W.T.O provides opportunities for countries to grow and realize their export potentials, with appropriate domestic policies in place.

1.1 World Trade Organization

Simply put: the World Trade Organization (WTO) deals with the rules of trade between nations at a global or near-global level. But there is more to it than that. There are a number of ways of looking at the WTO. It’s an organization for liberalizing trade. It’s a forum for governments to negotiate trade agreements. It’s a place for them to settle trade disputes. It operates as a system of trade rules. But it’s not Superman, just in case anyone thought it could solve or cause all the world’s problems. These are negotiating forum, essentially the WTO is a place where member governments go in order to sort out the trade problems they face with each
other. The first step is to talk. The WTO was born out of negotiations, and everything the WTO does is the result of negotiations. The bulk of the WTO’s current work comes from the 1986–94 negotiations called the Uruguay Round and earlier negotiations under the General Agreement on Tariffs and Trade (GATT). The WTO is currently the host to new negotiations, under the “Doha Development Agenda” launched in 2001. Where countries have faced trade barriers and wanted them lowered, the negotiations have helped to liberalize trade. But the WTO is not just about liberalizing trade, and in some circumstances its rules support maintaining trade barriers for example to protect consumers or prevent the spread of disease.

At its heart are the WTO agreements, negotiated and signed by the bulk of the world’s trading nations. These documents provide the legal ground-rules for international commerce. They are essentially contracts, binding governments to keep their trade policies within agreed limits. Although negotiated and signed by governments, the goal is to help producers of goods and services, exporters, and importers to conduct their business, while allowing governments to meet social and environmental objectives. The system’s overriding purpose is to help trade flow as freely as possible so long as there are no undesirable side-effects because this is important for economic development and well-being. That partly means removing obstacles. It also means ensuring that individuals, companies and governments know what the trade rules are around the world, and giving them the confidence that there will be no sudden changes of policy. In other words, the rules have to be “transparent” and predictable. Trade relations often involve conflicting interests. Agreements, including those painstakingly negotiated in the WTO system, often need interpreting. The most harmonious way to settle these differences is through some neutral procedure based on an agreed legal foundation. That is the purpose behind the dispute settlement process written into the WTO agreements.

The WTO began life on 1 January 1995, but its trading system is half a century older. Since 1948, the General Agreement on Tariffs and Trade (GATT) had provided the rules for the system. (The second WTO ministerial meeting, held in Geneva in May 1998, included a celebration of the 50th anniversary of the system.) It did not take long for the General Agreement to give birth to an unofficial, de facto international organization, also known informally as GATT. Over the years GATT
evolved through several rounds of negotiations. The last and largest GATT round, was the Uruguay Round which lasted from 1986 to 1994 and led to the WTO’s creation. Whereas GATT had mainly dealt with trade in goods, the WTO and its agreements now cover trade in services, and in traded inventions, creations and designs (intellectual property).

1.1.1 Principles of the Trading System of WTO

The WTO agreements are lengthy and complex because they are legal texts covering a wide range of activities. They deal with: agriculture, textiles and clothing, banking, telecommunications, government purchases, industrial standards and product safety, food sanitation regulations, intellectual property, and much more. But a number of simple, fundamental principles run throughout all of these documents. These principles are the foundation of the multilateral trading system. A closer look at these principles:

i) Trade without Discrimination

a) Most-favoured-nation (MFN): Treating Other People Equally

Under the WTO agreements, countries cannot normally discriminate between their trading partners. Grant someone a special favour (such as a lower customs duty rate for one of their products) and you have to do the same for all other WTO members. This principle is known as most-favoured-nation (MFN) treatment (see box). It is so important that it is the first article of the General Agreement on Tariffs and Trade (GATT), which oversees trade in goods. MFN is also a priority in the General Agreement on Trade in Services (GATS) (Article 2) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) (Article 4), although in each agreement the principle is handled slightly differently. Together, those three agreements cover all three main areas of trade handled by the WTO. Some exceptions are allowed. For example, countries can set up a free trade agreement that applies only to goods traded within the group discriminating against goods from outside. Or they can give developing countries special access to their markets. Or a country can raise barriers against products that are considered to be traded unfairly from specific countries. And in services, countries are allowed, in limited circumstances, to discriminate. But the agreements only permit these exceptions
under strict conditions. In general, MFN means that every time a country lowers a trade barrier or opens up a market, it has to do so for the same goods or services from all its trading partners whether rich or poor, weak or strong.

b) National Treatment: Treating Foreigners and Locals Equally

Imported and locally produced goods should be treated equally at least after the foreign goods have entered the market. The same should apply to foreign and domestic services, and to foreign and local trademarks, copyrights and patents. This principle of “national treatment” (giving others the same treatment as one’s own nationals) is also found in all the three main WTO agreements (Article 3 of GATT, Article 17 of GATS and Article 3 of TRIPS), although once again the principle is handled slightly differently in each of these. National treatment only applies once a product, service or item of intellectual property has entered the market. Therefore, charging customs duty on an import is not a violation of national treatment even if locally-produced products are not charged an equivalent tax.

ii) Freer Trade: Gradually, Through Negotiation

Lowering trade barriers is one of the most obvious means of encouraging trade. The barriers concerned include customs duties (or tariffs) and measures such as import bans or quotas that restrict quantities selectively. From time to time other issues such as red tape and exchange rate policies have also been discussed. Since GATT’s creation in 1947–48 there have been eight rounds of trade negotiations. A ninth round, under the Doha Development Agenda, is now underway. At first these focused on lowering tariffs (customs duties) on imported goods. As a result of the negotiations, by the mid-1990s industrial countries’ tariff rates on industrial goods had fallen steadily to less than 4% But by the 1980s, the negotiations had expanded to cover non-tariff barriers on goods, and to the new areas such as services and intellectual property. Opening markets can be beneficial, but it also requires adjustment. The WTO agreements allow countries to introduce changes gradually, through “progressive liberalization”. Developing countries are usually given longer to fulfill their obligations.
iii) Predictability: Through Binding and Transparency

Sometimes, promising not to raise a trade barrier can be as important as lowering one, because the promise gives businesses a clearer view of their future opportunities. With stability and predictability, investment is encouraged, jobs are created and consumers can fully enjoy the benefits of competition choice and lower prices. The multilateral trading system is an attempt by governments to make the business environment stable and predictable. In the WTO, when countries agree to open their markets for goods or services, they “bind” their commitments. For goods, these bindings amount to ceilings on customs tariff rates. Sometimes countries tax imports at rates that are lower than the bound rates. Frequently this is the case in developing countries. In developed countries the rates actually charged and the bound rates tend to be the same. A country can change its bindings, but only after negotiating with its trading partners, which could mean compensating them for loss of trade. One of the achievements of the Uruguay Round of multilateral trade talks was to increase the amount of trade under binding commitments (see table). In agriculture, 100% of products now have bound tariffs. The result of all this: a substantially higher degree of market security for traders and investors. The system tries to improve predictability and stability in other ways as well. One way is to discourage the use of quotas and other measures used to set limits on quantities of imports administering quotas can lead to more red-tape and accusations of unfair play. Another is to make countries’ trade rules as clear and public (“transparent”) as possible. Many WTO agreements require governments to disclose their policies and practices publicly within the country or by notifying the WTO. The regular surveillance of national trade policies through the Trade Policy Review Mechanism provides a further means of encouraging transparency both domestically and at the multilateral level.

iv) Promoting Fair Competition

The WTO is sometimes described as a “free trade” institution, but that is not entirely accurate. The system does allow tariffs and, in limited circumstances, other forms of protection. More accurately, it is a system of rules dedicated to open, fair and undistorted competition. The rules on non-discrimination MFN and national treatment are designed to secure fair conditions of trade. So too are those on
dumping (exporting at below cost to gain market share) and subsidies. The issues are complex, and the rules try to establish what is fair or unfair, and how governments can respond, in particular by charging additional import duties calculated to compensate for damage caused by unfair trade. Many of the other WTO agreements aim to support fair competition: in agriculture, intellectual property, services, for example. The agreement on government procurement (a “plurilateral” agreement because it is signed by only a few WTO members) extends competition rules to purchases by thousands of government entities in many countries.

v) Encouraging Development and Economic Reform

The WTO system contributes to development. On the other hand, developing countries need flexibility in the time they take to implement the system’s agreements. And the agreements themselves inherit the earlier provisions of GATT that allow for special assistance and trade concessions for developing countries. Over three quarters of WTO members are developing countries and countries in transition to market economies. During the seven and a half years of the Uruguay Round, over 60 of these countries implemented trade liberalization programmes autonomously. At the same time, developing countries and transition economies were much more active and influential in the Uruguay Round negotiations than in any previous round, and they are even more so in the current Doha Development Agenda. At the end of the Uruguay Round, developing countries were prepared to take on most of the obligations that are required of developed countries. But the agreements did give them transition periods to adjust to the more unfamiliar and, perhaps, difficult WTO provisions particularly so for the poorest, “least-developed” countries. A ministerial decision adopted at the end of the round says better-off countries should accelerate implementing market access commitments on goods exported by the least-developed countries, and it seeks increased technical assistance for them. More recently, developed countries have started to allow duty-free and quota-free imports for almost all products from least-developed countries. On all of this, the WTO and its members are still going through a learning process. The current Doha Development Agenda includes developing countries’ concerns about the difficulties they face in implementing the Uruguay Round agreements.
### 1.1.2 Objectives of WTO

The WTO has 164 members, together accounting for 90 percent of world trade. These members are mostly country governments, but can also be customs territories. Only a quarter of the countries are developed countries. The rest are developing countries, least developed countries (LDCs) and customs territories. Customs territories are countries working together to form alliances such as customs unions, free trade areas or common markets. Often they have just one spokesman or negotiating team representing the alliance at the WTO. The biggest such group is the European Union (EU). The EU is a WTO member in its own right, even though each of its member countries is also a member of the WTO. The main benefit of membership in the WTO is the right not to be discriminated against, in its trade with other members of the WTO. The objectives of WTO, as spelt out in the preamble to the Agreement that established the organization, were:

- Raise standards of living;
- Ensure full employment;
- Support a large and steadily growing volume of real income and effective demand;
- Expand production of, and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development; and
- Protect and preserve the environment.

It was further stated that the organization would seek to enhance the means of realizing the above-mentioned objectives “in a manner consistent with their respective needs and concerns at different levels of economic development” (WTO, 1995). The WTO was born out of negotiations; everything the WTO does is the result of negotiations.
1.2 WTO Agreement on Agriculture

After over seven years of negotiations the Uruguay Round multilateral trade negotiations were concluded on December 15, 1993 and were formally ratified in April 1994 at Marrakesh, Morocco. The WTO Agreement on Agriculture was one of the many agreements which were negotiated during the Uruguay Round. The implementation of the Agreement on Agriculture started with effect from January 1, 1995. As per the provisions of the Agreement, the developed countries would complete their reduction commitments within 6 years, i.e., by the year 2000, whereas the commitments of the developing countries would be completed within 10 years, i.e., by the year 2004. The least developed countries are not required to make any reductions. The products, which are included within the purview of this agreement are what are normally considered as part of agriculture except that it excludes fishery and forestry products as well as rubber, jute, sisal, abaca and coir.

Under Article 20 of the Agreement on Agriculture (AOA) which emerged from the Uruguay Round of Multilateral Trade Negotiations, the review of the Agreement is mandated one year before the end of the six-year implementation period of the Agreement i.e., 2000, with the objective of continuing the process of reform in the world trade in agriculture. The negotiations have commenced in March this year and in accordance with the time-table set for the first phase of negotiations, all WTO member nations are expected to submit their proposals by 31 December, 2000. In the process of preparations for evolving India's negotiating position on agriculture, the government has initiated regional consultations at various places, besides national level consultations with a view to generating greater awareness of the issues and to receive views and suggestions which would facilitate a consensus regarding India's position. The WTO Agreement on Agriculture contains provisions in three broad areas of agriculture and trade policy: market access, domestic support and export subsidies, these are presented in as below:

1.2.1 Market Access

This includes tariffication, tariff reduction and access opportunities. Tariffication means that all non-tariff barriers such as quotas, variable levies, minimum import prices, discretionary licensing, state trading measures, voluntary restraint agreements
etc. need to be abolished and converted into an equivalent tariff. Ordinary tariffs including those resulting from their tariffication are to be reduced by an average of 36 per cent with minimum rate of reduction of 15 per cent for each tariff item over a 6 year period. Developing countries are required to reduce tariffs by 24 per cent in 10 years. Developing countries as were maintaining Quantitative Restrictions due to balance of payment problems, were allowed to offer ceiling bindings instead of tariffication. Special safeguard provision allows the imposition of additional duties when there are either import surges above a particular level or particularly low import prices as compared to 1986-88 levels. It has also been stipulated that minimum access equal to 3 per cent of domestic consumption in 1986-88 will have to be established for the year 1995 rising to 5 per cent at end of the implementation period.

1.2.2 Domestic Support

For domestic support policies, subject to reduction commitments, the total support given in 1986-88, measured by the total Aggregate Measurement of Support (AMS) should be reduced by 20 per cent in developed countries (13.3 per cent in developing countries). Reduction commitments refer to total levels of support and not to individual commodities. Policies which amount to domestic support both under the product specific and non-product specific categories at less than 5 per cent of the value of production for developed countries and less than 10 per cent for developing countries are also excluded from any reduction commitments. Policies which have no or at most minimal trade distorting effects on production are excluded from any reduction commitments (Green Box-Annex two of the Agreement on Agriculture-http://www.wto.org). The list of exempted green box policies includes such policies which provide services or benefits to agriculture or the rural community, public stock holding for food security purposes, domestic food aid and certain de-coupled payments to producers including direct payments to production limiting programmes, provided certain conditions are met. Special and differential treatment provisions are also available for developing country members. These include purchases for and sales from food security stocks at administered prices provided that the subsidy to producers is included in calculation of AMS. Developing countries are permitted untargeted subsidized food distribution to meet requirements
of the urban and rural poor. Also excluded for developing countries are investment subsidies that are generally available to agriculture and agricultural input subsidies generally available to low income and resource poor farmers in these countries.

1.2.3 Export Subsidies

The agreement contains provisions regarding member's commitment to reduce export subsidies. Developed countries are required to reduce their export subsidy expenditure by 36 per cent and volume by 21 per cent in 6 years, in equal instalment (from 1986-1990 levels). For developing countries the percentage cuts are 24 per cent and 14 per cent respectively in equal annual installment over 10 years. The Agreement also specifies that for products not subject to export subsidy reduction commitments, no such subsidies can be granted in the future.

1.3 Agreement on Agriculture (AOA) and Domestic Support

Agriculture sector has received special treatment in all countries at every stage of development due to various reasons like livelihood, food security, large population dependence or political sensitivity. Therefore this sector enjoys an important status for both the developed and the developing countries, especially in the context of GATT/WTO negotiations as well as bilateral or regional trade arrangements. For a developing country like India, this sector has been an engine of economic growth due to livelihood & food security and its interdependence with industrial sector. Overall economic and human development of India to a great extent depends on the performance of this sector.

During 1990s, many Developing countries expected that due to reduction commitment related to domestic support, export subsidy and tariff barriers, international prices of agricultural commodities would go up and would lead to increased exports, mostly from developing countries. At that time, many scholars predicted a bright future for agricultural exports. Gulati (1994) found that on an average during 1987-88 to 1993-94, domestic prices of wheat, rice, and cotton were well below the prices prevailing in the world market i.e. agriculture sector was taxed. Debroy (1996) concluded that India’s would gain by steep increase in under WTO. Even, the study done by Bhatta and Singh (1996) indicated that Punjab is
internationally competitive and can profitably export rice and cotton to the rest of the world.

However, the outcome of AoA has not been as beneficial to the developing countries as was expected due to increase in both; agriculture subsidy and use of non-tariff measures. India’s agricultural export performance since 1995 has not been satisfactory due to external as well as internal factors. Bhalla (2004), Chand and Jha (2001), Vyas (2001), mentioned the following reasons for this trend; First, sharp increase in minimum support price, Secondly, the productivity growth rates in these crops have decelerated during the recent years which are primarily due to inadequate investment and non-availability of new technology. Thirdly, competitiveness is negatively affected due to huge export subsidy and domestic support being given by the developed nation which cause decline in international prices. The developed countries continue to protect their agriculture sector. For example, in many developed countries like USA and European Union (EU), agriculture production is heavily subsidized, exports are encouraged by export subsidy, and agriculture sector is protected from import by adopting various mechanisms like tariff and non-tariff barriers.

Many developing countries including India raised the concerns related to huge subsidies given to agriculture sector in many developed countries. At domestic fronts, many issues are discussed and debated about India’s commitment related to domestic support. Questions were raised about the flexibility of Indian government under AoA to provide domestic support to farmers. In 2001, the WTO members agreed to launch a new round of multilateral trade negotiations, known as Doha development round. During the Doha negotiations, new concepts and provisions related to domestic support emerged. Nine versions of Draft Modalities have been submitted till February 2011, viz. TN/AF/W/1 (February 2003 text), TN/AF/W/1 Rev. 1 (March 2003 text), TN/AG/W/2 (June 2006 text), TN/AG/W/3 (July 2006 text), TN/AG/W/4 (August 2007 text), TN/AG/W/4/Rev.1, (February 2008 text),

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1 Negotiating Groups have been constituted in the WTO on each aspect of the negotiations. From time to time, based on the views expressed by the WTO Members, the Chairs of these Groups bring out draft modalities containing proposals that would help realize the objectives of the negotiations. In the agriculture negotiations, the draft modalities include formulas and other methods to be used to reduce tariffs and agricultural subsidies.
The revised draft (WTO document, TN/AG/W/4/Rev.4) for agriculture was circulated on 6th December, 2008 provides new method/formulas to cut trade distorting support to agriculture sector. There are many provisions related to domestic support which have implications for all the members of WTO. There are some concerns about the likely commitments of India related to domestic support, if draft modalities are accepted. With his background, the objective of this study is to critically examine India’s commitment related to domestic support provisions especially Aggregate Measurement of Support (AMS) under AOA and possible future commitments if agriculture modality of Doha negotiations is agreed.

1.3.1 Initial Status of Domestic Support

The Agreement on Agriculture (AOA) provides provisions to estimate domestic support to agriculture sector. The key aim of reducing domestic support is to correct trade distortions in international trade of agriculture goods. Aggregate Measurement of Support (AMS) is the annual level of support in monetary terms extended to the agricultural sector. All domestic support measures, except exempt measures, provided in favour of agricultural producer are to be measured as AMS. The subsidies provided to farmers include:

a) Non-Product Specific subsidies such as those provided for irrigation, electricity, credit, fertilizers, seed etc.

b) Product Specific subsidies, which are, calculated as domestic prices minus fixed external reference price (1986-88 fob or if as the case may be).

The sum of these two is termed as Aggregate Measurement of Support (AMS) also called Amber Box. The Amber Box subsidies are considered to be trade distorting and entitled to progressive reduction commitments. The de minimis limit or AMS is fixed at 5 percent of the value of domestic agricultural output for developed and 10 percent for developing countries. Domestic support exceeding the maximum limit in the base year 1986-88 was to be reduced by 13.3 percent for developing countries and 20 percent for developed countries over and
implementation period of six year for developed countries and ten years for developing countries. It is noteworthy that reduction commitments are applicable only at aggregate level not at product specific level.

All the direct or indirect government support provided to encourage agricultural and rural development, investment subsidies and agricultural input subsidies provided to low income farmers in developing countries are exempted from the reduction commitments (Art, 6.2 of AoA). Direct payments under production-limiting programmes (Blue Box) are also exempted from reduction. There are some subsidies, which are required in the long term interest of maintaining natural resources, environmental protection and improving the former’s income. These are not to be included in the AMS and are grouped in ‘Green Box’. However, these should meet the fundamental requirement of having minimal trade distorting effects.

1.3.2 Doha Negotiations and Domestic Support

The revised draft (WTO document, TN/AG/W/4/Rev.4) for agriculture was circulated on 6th December, 2008 provides new method/formulas to cut trade distorting support to agriculture sector. In Doha round, all developed countries will have to substantially reduce trade distorting support and those with higher levels of support have to make deeper cuts from the “bound” or ceiling levels. This includes reductions both in overall current bound levels and separately in Amber box and de minimis support. Blue box support will also be capped. If after taking cuts in individual components, the overall support exceeds the ceiling, then additional cuts will have to be made in the individual components.

Therefore, Doha negotiations aim at substantial reductions in trade-distorting domestic support by

1. Setting limits for domestic support except for Green Box and Art. 6.2 subsidies. For example, overall Blue Box, product specific Blue Box, product specific AMS

2. Reducing limits for AMS, de minimis
3. Establishing a new constraint—Overall trade distorting support (OTDS)

4. Clarifying and review the Green Box criteria

All these concept and likely impact on India’s commitment (provided December text TN/AG/W/4/Rev.4 is accepted) will be discussed in Section 4. Data for this study has been taken from WTO notifications, Agriculture Statistic at Glance, and various modalities of Doha Round Negotiations.

1.4 Domestic Support in India

About the domestic support, India does not have final bound AMS. It was due to the fact that during base period 1986-88, India’s AMS was below the de minimis level i.e. 10 percent of value of production. In other words, during base period, AMS in India was zero. Therefore, the reduction commitments related to Bound AMS are not applicable. It further implies that de-minims limit becomes the upper limit to provide AMS to agriculture sector.

About the definition of de-minims, Part IV Art 6.4 of AoA states that Member shall not be required to include in the calculation of its Current Total AMS and shall not be required to reduce.

a) (i) product-specific domestic support which would otherwise be required to be included in a Member’s calculation of its Current AMS where such support does not exceed 5 percent of that Member’s total value of production of a basic agricultural product during the relevant year; and

(ii) non-product-specific domestic support which would otherwise be required to be included in a Member’s calculation of its Current AMS where such support does not exceed 5 percent of the value of that Member’s total agricultural production.

b) For developing country Members, the de minimis percentage under this paragraph shall be 10 percent.

India as a developing country has product-specific de minimis limit of 10 percent of value of specific product and non-product specific de minims limit is 10
percent of value of total agriculture production. India has made notifications on domestic support for the period 1995-96 to 2003-04 (WTO notification G/AG/N/IND/1, G/AG/N/IND/2, G/AG/N/IND/7). The product specific subsidy was negative for all commodities (except sugarcane) during 1995-2004. It is due to the fact that minimum support price of all the commodities (except sugarcane) was less than fixed external reference price (1986-88 base year) of these commodities. The non-product specific subsidy was also within the de minimis limit (see table 1 and 2). These notifications show that India has no obligation to reduce domestic support to agriculture sector.

Many studies (Bhalla (2004), Gulati (2003), Hoda and Gulati (2007) has also calculated AMS of India and found that India’s domestic support is within the de minimis limit. These studies revealed that product-specific subsidy in most of agricultural crops are negative. However, non-product specific subsidy is positive, but below the de minimis level.

Table 1.1: Aggregate Measurement of Support

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<td>Rice</td>
<td>-7577</td>
<td>-1321</td>
<td>-1479</td>
<td>-1328</td>
<td>-1685</td>
<td>-2034</td>
<td>-2113</td>
<td>-1519</td>
<td>-1883</td>
</tr>
<tr>
<td>Soya beans</td>
<td>-192</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sugar cane</td>
<td>184</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tobacco</td>
<td>-181</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wheat</td>
<td>-9625</td>
<td>-1280</td>
<td>-1266</td>
<td>-1682</td>
<td>-1838</td>
<td>-2126</td>
<td>-2764</td>
<td>-2552</td>
<td>-2006</td>
</tr>
<tr>
<td>Non-product-specific support</td>
<td>5772</td>
<td>930</td>
<td>1003</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: WTO Notifications
Table 1.2: Composition of Domestic Support (million US$)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Green</td>
<td>2196</td>
<td>2503</td>
<td>2873</td>
<td>2276</td>
<td>2493</td>
<td>2851</td>
<td>4002</td>
<td>5237</td>
<td>5883</td>
<td></td>
</tr>
</tbody>
</table>

Source: WTO Notifications

In this context, it is noteworthy to mention Art. 6.2 of AoA.

“In accordance with the Mid-Term Review Agreement that government measures of assistance, whether direct or indirect, to encourage agricultural and rural development are an integral part of the development programmes of developing countries, investment subsidies which are generally available to agriculture in developing country Members and agricultural input subsidies generally available to low-income or resource-poor producers in developing country Members shall be exempt from domestic support reduction commitments that would otherwise be applicable to such measures, as shall domestic support to producers in developing country Members to encourage diversification from growing illicit narcotic crops. Domestic support meeting the criteria of this paragraph shall not be required to be included in a Member’s calculation of its Current Total AMS”.

It implies that if a developing country provide input subsidy to low income or resource poor farmers, then it would be exempted from the calculation of AMS. However, question arises who are low income or poor farmers in India. There is no specific definition of low income or resource poor farmers in WTO. It is up to the member country to define low income or resource poor farmers.

Table 1.3: Trend in Agriculture Land Holding

<table>
<thead>
<tr>
<th>Category of holdings</th>
<th>Percentage of number of holdings</th>
<th>Percentage of area covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 2 hectare</td>
<td>78.20</td>
<td>80.30</td>
</tr>
<tr>
<td>Up to 4 hectares</td>
<td>91.30</td>
<td>92.60</td>
</tr>
<tr>
<td>Up to 10 hectares</td>
<td>98.40</td>
<td>98.70</td>
</tr>
<tr>
<td>Above 10 hectare</td>
<td>1.60</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Source: Agriculture Census

As per India’s notification on domestic support (G/AF/N/IND/1, G/AG/N/IND/2 and G/AG/N/IND/7), if a farmer had landholding up to 10 hectare,
he would come under the category of low or poor income farmers. About 99 percent of agricultural landholding comes under the above category (see Table 3).

Therefore, India has no obligation under AoA to reduce input subsidies to agriculture sector. India can provide input subsidies like fertilizer, canal irrigation and electricity etc to agriculture sector under Art. 6.2 of AoA. Though, India has flexibility to provide input subsidy to agriculture sector, but there are many constraints and related problems with input subsidies at domestic front. Overall, India has enough flexibility to provide domestic support to agriculture sector.

1.5 Domestic Support Provision Emerged during Doha Round

In 2001, the WTO members launched a new round of multilateral trade negotiations, known as Doha development round. Doha ministerial conference in 2001 recognizes the need for special and differential treatment for the developing and the least developing countries (see the following Para of Doha declaration, document no. WT/MIN(01)/DEC/1).

Para 44: We reaffirm that provisions for special and differential treatment are and integral part of the WTO Agreements. We note the concerns expressed regarding their operation in addressing specific constraints faced by developing countries, particularly least-developed countries. In that connection, we also note that some members have proposed a Framework Agreement on Special and Differential Treatment (WT/GC/W/442). We therefore agree that all special and differential treatment provisions shall be reviewed with a view to strengthening them and making them more precise, effective and operational. In this connection, we endorse the work programmed on special and differential treatment set out in the Decision on Implementation-Related Issues and Concerns.

However, the negotiations in the Doha round have reached a stalemate due to different positions taken by member countries. Since 2001, many agriculture modalities were discussed and revised. The revised draft (TN/AG/W/4/Rev. 4 or December 2008 text) for agriculture was circulated on 6th December, 2008. As a
developing country, India also got special and differential treatment in the negotiations. The likely implications of recent draft modality are discussed in following sub-sections.

1.5.1 Overall Trade Distorting Support

During Doha negotiations, a new concept called OTDS is introduced. The base level for reductions in Overall Trade-Distorting Domestic Support (hereafter “Base OTDS”) is sum of:

1. the Final Bound Total AMS specified in Part IV of a Member’s Schedule; plus

2. for developed country Members, 10 per cent of the average total value of agricultural production in the 1995-2000 base period (this being composed of 5 per cent of the average total value of production for product-specific and non-product-specific AMS respectively); plus

3. higher of average Blue Box payments as notified to the Committee on Agriculture, or 5 per cent of the average total value of agricultural production, in the 1995-2000 base period.

For developing country Members, item (2) of paragraph above shall be 20 per cent of the average total value of agricultural production in the 1995-2000 or 1995-2004 period as may be selected by the Member concerned. For developing country Members, the base period for the purposes of item (3) of paragraph above shall be 1995-2000 or 1995-2004 as may be selected by the Member concerned. The 6th December 2008 draft modalities text proposes a tiered formula for reduction of OTDS and also suggests a range of cuts in each tier (see table 4). The reductions are to be made in six equal steps over a period of five years. Developing country members would be required to undertake two-thirds of the cuts, in nine equal installments over a period of eight years.
Table 1.4: Reduction in OTDS

<table>
<thead>
<tr>
<th>Tier</th>
<th>Threshold (US$ billion)</th>
<th>Cuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt; 60</td>
<td>80%</td>
</tr>
<tr>
<td>2</td>
<td>10-60</td>
<td>70%</td>
</tr>
<tr>
<td>3</td>
<td>&lt; 10</td>
<td>55%</td>
</tr>
</tbody>
</table>

Source: WTO document, TN/AG/W/4/Rev. 4

India’s Likely Commitment

As per Para 6 of revised draft, a developing country member with no Final Bound Total AMS commitments shall not be required to undertake reduction commitments in their Base OTDS”. As India does not have Final bound total AMS commitments under AoA, therefore, there will be no requirement for India to reduce OTDS under the revised draft modality. As per Para 10 of revised modality, developing country members that are not required to undertake reduction commitments under any of the provisions of these modalities shall only be required to schedule their OTDS. Therefore, India is required to schedule their base OTDS, in monetary terms, in part IV of their schedules.

1.5.2 Final Bound AMS

As per revised modality, the Final Bound Total AMS shall be reduced in accordance with the following tiered formula (Para 13 of Revised modality):

a) Where the Final Bound Total AMS is greater than US$40 billion, or the equivalent in the monetary terms in which the binding is expressed, the reduction shall be 70 per cent;

b) Where the Final Bound Total AMS is greater than US$15 billion and less than or equal to US$40 billion, or the equivalents in the monetary terms in which the binding is expressed, the reduction shall be 60 per cent;

c) Where the Final Bound Total AMS is less than or equal to US$15 billion, or the equivalent in the monetary terms in which the binding is expressed, the rate of reduction shall be 45 per cent.

For developed country Members, reductions in Final Bound Total AMS shall be implemented in six steps over five years. The reduction in Final Bound Total AMS applicable to developing country Members shall be two-thirds of the reduction
applicable for developed country Members under paragraph 13(c) above. The reductions in Final Bound Total AMS shall be implemented in nine equal annual installments over eight years, commencing on the first day of implementation.

India’s Likely Commitment

According to Para 16 of revised modality, a developing country Member with Final Bound Total AMS levels at or below US$ 100 million shall not be required to undertake reductions. As India does not have final bound total AMS, therefore, reductions obligation not applicable for India.

1.5.3 Product Specific Limits

In AOA, there was no product-specific limit. Due to this, many developed countries concentrated their AMS on few products. For example, about 90 percent of product specific AMS in USA was concentrated on six products (see table 1.5).

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Dairy</td>
<td>73.7</td>
<td>78.7</td>
<td>43.2</td>
<td>27.6</td>
<td>30.0</td>
<td>30.5</td>
<td>56.2</td>
<td>64.1</td>
<td>37.9</td>
<td>39.5</td>
<td>63.7</td>
<td>77.2</td>
<td>62.3</td>
<td>55.2</td>
</tr>
<tr>
<td>Corn</td>
<td>0.5</td>
<td>0.5</td>
<td>14.5</td>
<td>15.1</td>
<td>16.5</td>
<td>9.0</td>
<td>1.7</td>
<td>3.1</td>
<td>24.9</td>
<td>34.4</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Rice</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
<td>2.6</td>
<td>3.7</td>
<td>5.2</td>
<td>6.3</td>
<td>6.8</td>
<td>1.1</td>
<td>1.0</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Wheat</td>
<td>0.1</td>
<td>0.1</td>
<td>4.9</td>
<td>5.8</td>
<td>5.0</td>
<td>1.3</td>
<td>0.2</td>
<td>1.5</td>
<td>0.7</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Soybeans</td>
<td>0.3</td>
<td>0.2</td>
<td>12.1</td>
<td>16.9</td>
<td>21.4</td>
<td>24.6</td>
<td>0.5</td>
<td>0.36</td>
<td>4.1</td>
<td>0.5</td>
<td>0.8</td>
<td>0.1</td>
<td>0.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Sugar</td>
<td>17.3</td>
<td>15.2</td>
<td>10.0</td>
<td>7.1</td>
<td>7.0</td>
<td>7.2</td>
<td>11.8</td>
<td>16.9</td>
<td>10.4</td>
<td>9.2</td>
<td>16.2</td>
<td>19.0</td>
<td>18.0</td>
<td>22.9</td>
</tr>
<tr>
<td>Cotton</td>
<td>0.5</td>
<td>0.1</td>
<td>8.9</td>
<td>13.9</td>
<td>6.2</td>
<td>19.1</td>
<td>10.6</td>
<td>5.9</td>
<td>18.2</td>
<td>12.4</td>
<td>17.3</td>
<td>3.2</td>
<td>17.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Sum</td>
<td>92.6</td>
<td>95.0</td>
<td>93.7</td>
<td>89.0</td>
<td>89.7</td>
<td>96.9</td>
<td>87.2</td>
<td>98.7</td>
<td>97.2</td>
<td>97.2</td>
<td>98.3</td>
<td>99.8</td>
<td>98.6</td>
<td>95.3</td>
</tr>
</tbody>
</table>

Source: USA’s notification to WTO

This led to price distortions of agricultural commodities in international market. Due to concentration of product-specific support, many developing country members demanded product-specific limit in Doha negotiations. Para 20-29 of revised draft modality are related to product specific limit. For the developing countries the relevant provisions to determine product-specific limit is given in Para 27. As per revised modality, Developing country Members shall establish their product-specific AMS limits by choosing one of the following methods, and
scheduling all their product-specific AMS commitments in accordance with the method chosen:

a) the average product-specific AMS during the base period 1995-2000 or 1995-2004 as may be selected by the Member concerned, as notified to the Committee on Agriculture; or

b) two times the Member’s product-specific de minimis level provided for under Article 6.4 of the Uruguay Round Agreement on Agriculture during the base periods referred to in sub-paragraph (a) above; or

c) 20 per cent of the Annual Bound Total AMS in the relevant year during the Doha Round implementation period.

**India’s Likely Commitment**

As a country has to adhere to Final bound AMS. It implies that the aggregation of product specific and non-product specific support cannot be more than final bound AMS. As India does not have final bound AMS (see section 4.2 above), therefore the product specific limit should not be more that de-minimis limit. Therefore, the product-specific de-minims limit will become the upper limit for product-specific support. Even under AOA, India cannot give product-specific support above the de-minims limit i.e. 10 percent of value of production.

**1.5.4 De-minims Limit**

As per Para 30 and 31 of revised modality, the de minimis levels referred to in Article 6.4(a) of the Uruguay Round Agreement on Agriculture for developed country Members (i.e.5 per cent of a Member’s total value of production of a basic agricultural product in the case of product-specific de minimis and 5 per cent of the value of a Member’s total agricultural production in the case of non-product-specific de minimis) shall be reduced by no less than 50 per cent effective on the first day of the implementation period.

For developing country Members with Final Bound Total AMS commitments, the de minimis levels referred to in Article 6.4(b) of the Uruguay Round Agreement on Agriculture (i.e. 10 per cent of a Member’s total value of
production of a basic agricultural product in the case of product-specific de minimis and 10 per cent of the value of a Member’s total agricultural production in the case of non-product-specific de minimis) to which they have access under their existing WTO obligations shall be reduced by at least two-thirds of the reduction rate of developed country members. The timeframe for implementation shall be three years from the first day of implementation.

**India’s Likely Commitment**

As a developing country, India will be required to reduce de-minimis limit. However, there is a specific Para, which shield India from reduction commitment related to de minimis. Para 32 of revised modality states that a *developing country members with no Final Bound Total AMS commitments; or with such AMS commitments, but that either allocate almost all that support for subsistence and resource-poor producers, or that are NFIDCs listed in document G/AG/5/Rev. 8; shall continue to have the same access as under their existing WTO obligations to the limits provided for product-specific and non-product-specific de minimis in the current Article 6.4(b) of the Uruguay Round Agreement on Agriculture.* As India does not have any final bound total AMs commitments, therefore, India does not required to reduce de-minimis limit. Therefore, the de-minims limit for India will remain same as given in AoA i.e. 10 percent of value of production.

1.5.5 **Blue Box Support**

During the Doha negotiations, the definition of Blue box has been broadened. As per the revised modality, the value of following domestic support, provided that it is consistent also with the limits as provided for in the paragraphs below, shall be excluded from a Member’s calculation of its Current Total AMS but shall count for purposes of that Member’s Blue box commitments and OTDS. Each Member shall specify in its Schedule which of these categories- (a) OR (b)- it has selected for the purposes of establishing all its Blue Box commitments in this Round.

A) Direct payments under production-limiting programmes if:
   - Such payments are based on fixed and unchanging areas and yields. Or
• Such payments are made on 85 per cent or less of a fixed and unchanging base level of production; or

• Livestock payments are made on a fixed and unchanging number of head.

Or

B) Direct payments that do not require production if

• Such payments are based on fixed and unchanging areas and yields. Or

• Such payments are made on 85 per cent or less of a fixed and unchanging base level of production; or

• Livestock payments are made on a fixed and unchanging number of head.

For the developed country members, the maximum value of support that can be provided under Article 6.5 shall not exceed 2.5 per cent of the average total value of agricultural production in the 1995-2000 base period on the basis of notifications to the Committee on agricultural where they exist. The definition of Blue box is modified to give a special carve-out to USA so that its counter-cyclical payment programme can be shift from Amber to Blue box.

**India’s Likely Commitment**

For developing country Members, the maximum permitted value of support shall be 5 per cent of the average total value of agricultural production in the 1995-2000 or the 1995-2004 base period as may be selected by the Member concerned. That limit shall be expressed in monetary terms and bound in Part IV in developing country Member’s Schedules.

India has never provided blue box support to agriculture sector. However, India will have flexibility to provide blue box support, if any programmes is consistent with para A or B. It is to be noted that India does not have any product specific current AMS or blue box during 1995-2003 (see India’s notification). As per Para 50 of revised modality, Where, for a particular product, a developing country Member has no product-specific entitlement to a Blue Box limit or that product under the above provisions, and no Current AMS support in the base period
for it, a product-specific Blue Box limit may still be scheduled but only where the total support for the totality of any such products concerned does not exceed 30 per cent of the overall Blue Box limit; there is a maximum for any single product of 10 per cent of the overall Blue Box limit. Therefore, India will have the flexibility to provide up to 5 percent of value of production (base period 1995-2000 or 1995-2004) and can scheduled its product specific limit. However, as mentioned earlier, India has never provided the support to agriculture under this box and it is unlikely that India will use this box to support agriculture.

1.5.6 Green Box Support

As per the AoA, measures with minimal impact (green box) on trade can be used freely and include government service such as research, disease control, infrastructure and food security. Annex B of revised modality proposed many amendments in Annex 2 (also called Green Box) of AoA. Two specific provisions of revised modality are now constituted as G-33 proposal for Bali ministerial conference of WTO. These provisions are related to Para 2 to 4 of Annex 2 of AoA.

To meet the concern of developing countries, G-33 proposal seeks to insert a new sub-paragraph (2h) in AoA. The specific new programmes and policies that would be included in green box are related to farmer settlement, land reform programmes, rural development and rural livelihood security in developing country Members, such as provision of infrastructural services, land rehabilitation, soil conservation and resource management, drought management and flood control, rural employment programmes, nutritional food security, issuance of property titles and settlement programmes, to promote rural development and poverty alleviation.

There are some specific provisions in revised modality (also now part of G-33 proposal) which are directly related to AMS calculation and thus have impact on AMS commitment. As per Annex B of Revised draft modality, acquisition of stocks of foodstuffs by developing country Members with the objective of supporting low-income or resource-poor producers shall not be required to be accounted for in the AMS. It is also envisaged that the acquisition of foodstuffs at subsidized prices when procured generally from low-income or resource-poor producers in developing countries with the objective of fighting hunger and rural poverty, as well as the
provision of foodstuffs at subsidized prices with the objective of meeting food requirements of urban and rural poor in developing countries on a regular basis at reasonable prices shall be excluded from AMS calculation.

**India’s Likely Commitment/Implication**

With new subparagraph 2h of AoA, India as well as other developing countries will have more policy space to implement policies and programmes related to land reform, drought management etc.

About the public stockholding for food security purposes and domestic food aid, the revised modality will give policy space to effectively implement food security policies without breaching the WTO commitments related to domestic support. As mentioned earlier, India has defined resource poor or low income farmers on the basis landholding. A farmer has landholding up to 10 hectare would come under the category of low or poor income farmers. About 99 percent of agricultural landholding comes under the above category. Therefore, procuring food-grains from these farmers will be exempted from the calculation of AMS. Above elements related to green box are now the main demands of G33 group in WTO and it is very hot issue for the Bali ministerial conference.

### 1.6 Characteristics of Indian Agriculture

Agriculture forms the backbone of the Indian economy. Any change in the agriculture sector has a strong multiplier effect on the entire economy. The multiplier for food industry is much higher than that for industries such as power and telecom, reason being that the food industry directly and indirectly triggers growth in a number of other industries such as transport, refrigeration, pesticides and fertilizers. This sector contributes to the Indian economy in various ways:

- It provides direct employment to 52% of working people in the country and contributes about 17.9% (economic survey 2013-14, GoI) of GDP of the country. In advanced nations like the US, agriculture accounts for a mere 2% of GDP, and employs 4% of the total labour force. The position is similar in other advanced countries. For example, agriculture contributed 2% of GDP in France with 6% share in labour force; in Germany the contribution of
agriculture to GDP was 1% with 3% share in labour force. The corresponding figures for UK were 2% and 3% (World Bank 2011).

- Agriculture also provides the foodgrains to feed the large population of the country.
- Indian agriculture is an important source of supply of raw materials to industries in the country.
- Agriculture contributes a sizeable share in India’s exports.
- Besides, it provides fodder for the large cattle population.
- Being the largest source of employment and income to millions of people, it provides a vast market for our industrial products.

In 2013-14, India had the world's third largest fishing industry. Although, agriculture contributes only 17.9% of India’s GDP, its importance in the country’s economic, social, and political fabric goes well beyond this indicator (Neelamegam et al., 2008). Agriculture has always been at the centre stage of socio-economic development in India and it will continue to remain so (Kuljit et al.). India ranks second worldwide in farm output. Agriculture and allied sectors like forestry, logging and fishing accounted for 15.7% of the GDP in 2009-10, employed 52.1% of the total workforce, and despite a steady decline of its share in the GDP, is still the largest economic sector and plays a significant role in the overall socio-economic development of India. Yields per unit area of all crops have grown since 1950, due to the special emphasis placed on agriculture in the five-year plans and steady improvements in irrigation, technology, application of modern agricultural practices and provision of agricultural credit and subsidies since the Green Revolution in India. However, international comparisons reveal the average yield in India is generally 30% to 50% of the highest average yield in world. In Indian agriculture the factors like high soil productivity, supply of balanced crop nutrients, efficient water management, improved crops, better plant protection, post production management for value-addition and marketing, are responsible for higher yield as compared to most of the other countries. Through the five year plans, agricultural policy focused on raising public investment in irrigation, which was envisaged as the
prime mover of farm growth. (Ramakumar). The following table indicates the production of food items in last years.

Agriculture will continue to remain at the centre stage of socio-economic development in India. As M.S. Swaminathan, the director of India's National Commission on Farmers, who led the country's green revolution in the 1970s said "If the government were to agreed to something which will kill our agricultural sector, and then their political futures will be finished". Notwithstanding its outstanding performance in making the country self-sufficient in foodgrains, deceleration of its performance beginning with mid-nineties is of serious national concern. Agriculture contributes to economic development of India in at least four ways:-

a) Product contribution i.e. making available food and raw materials; Major source of raw material like cotton textile industries, sugar and vanaspati ghee.

b) Market contribution i.e. providing market for goods produced by other sectors

c) Factor contribution i.e. making available labour and capital to the non-agricultural sector

d) Foreign exchange contribution i.e. by means of producing extra product to be export and to get the foreign money in lieu of that.

The recent deceleration of growth in Indian agriculture- both in production as well as in crop productivity- has however been a cause of worry. Unless this trend is reversed, India may not be able to take on the opportunities that may be made available to it in the wake of globalization and WTO. Reversal of this trend would however require action on a number of fronts the most the coverage of irrigation to a much larger cultivated area (Malik). India is the second largest producer of food in the world: more than 200 million tonnes of foodgrains, 150 million tonnes of fruits and vegetables, 91 million tonnes of milk, 1.6 million tonnes of poultry meat, 417 million livestock, and 6.05 million tonnes of fish and fish products. The Indian agriculture has made great strides over the years. The foodgrain production has
increased more than four fold - from 51 million tonnes in 1950-51 to 257.07 million tonnes during 2014-15 growing at an annual average rate of more than 2.4 percent per annum.

1.7 Challenges of Indian Agriculture

The country has made significant improvements in agricultural production, but the achievements have been mainly confined to a few areas. The major challenges for our agriculture system would always be increasing production and productivity to ensure food security for the rising population. Agriculture productivity in India is challenge because of fragmented land holding. Consolidation of land holding is one of the measures to get maximum out of it. Government has to take innovative steps to get farmer benefited with the subsidy schemes directly as applicable in other countries to make the farmers self reliant. Meeting this challenge means also ensuring food security and a better standard of living for the rural people. India’s performance in agriculture affects overall rural development and the extent of rural poverty. Therefore, the performance of the economy is crucially dependent upon that of agriculture. Banking industry in India has to take suggestive measures to cover excluded or unbanked people get benefited to make them out of the rural indebtedness due to the private money lenders. India has a wide network of rural finance institutions, many of the rural poor remain excluded, due to inefficiencies in the formal finance institutions, the weak regulatory framework, high transaction costs, and risks associated with lending to agriculture. Apart from occasional poor monsoons and some demand-related problems, the long term trend of agricultural production in India can largely be attributed to a variety of factors such as declining public investment; failure to carry out essential reforms to conserve water and soil; unabated degradation of natural resources, and weakened support systems due to financial problems of state governments. While reversing the trend of declining investment in agriculture, often cited as the most important factor for deceleration in growth, especially during the 1990s, could contribute significantly to reversing the observed deceleration in the growth of agriculture, it will not, however, be prudent to expect that investment alone will reverse this trend.
1.8  **Relation between Agricultural Subsidy, India and WTO**

The agriculture subsidy is an important socio-economic concept in India. The agriculture subsidy reduces the cost of production of products and ensures proper price through MSP while in other side it provides high motivation among farmers to produce agro-crops. The input subsidy and MSP are positively impacted and enhanced the economic and social level of small and medium farmers and provided social-economical safety-net to them from the paradox of plenty, uncertainty of rain, unexpected natural risks and various types of disasters. In other side, agriculture exporters, large farmers and commercial crop producers get better market price of products through such input subsidies.
The subsidy puts in the activities which pollutes the trade. The concept of WTO to develop the member countries through trades liberalization and rationale of AoA clarified that member countries may reduced the domestic support in stipulated time period. The WTO classified domestic subsidies into three categories known as the Amber, Blue and Green boxes. The Amber box has provision to secure to alter on inputs and products by reducing the subsidy while the Green Box has provisions to protect socio-economic of people by providing the subsidies on food security, crop insurance, disease control and other facilities related to social security. The social welfare issues are more important in comparison to export business in developing and democratic country like India.

1.9 Objectives, Hypothesis and Methodology

The process of economic liberalization, privatization and globalization of Indian economy in 1991 and subsequent emergence of World Trade Organization (WTO) in synergizing global trade policies have totally changed the ways and practices of businesses all over the globe. It has major implications for all sectors of the Indian economy particular in Agriculture, Industry and Services sectors. The ‘outward looking’ exports promotion strategy adopted in 1991, led to significantly faster growth of production and exports in India since then. The increased domestic competition in international economic environment owns to formation WTO and other global economic crises. The trade to GDP ratio in 1990-91 was around 11 percent which has increased to near about 50 percent in 2013-14 in India indicated tremendous growth in trades (World Bank, 2014). This clearly indicates greater degree of openness of Indian Economy.

The WTO mandated mechanism has completely changed the ways the business and trade is taking place nationally, regionally and globally. In a world characterized by rising pace of globalization (fast growing foreign trade in commodities and services for countries like India and greater flow of cross border capital), the role of WTO has become extremely important. As WTO decision making is based on negotiations and consensus, the signatories to WTO agreements are bound to abide by these agreements. However, WTO compliance often entails major changes in an economy, and adjustment costs could be very high if proper
policies and strategies are not adopted in a proactive manner. Consequently, the desired role of the Central Government and the State Governments in India has also taken strategic shifts. The present study titled ‘An Analytical Study of Functioning of WTO in Context to Agricultural Subsidy with Special Reference to India’. explores the impacts of WTO provisions in regard to agriculture subsidy, circumstances & problems of Indian farmers and peculiarity of Indian agriculture. Apart from these, the study evaluates the agriculture support in India in context of WTO on selected agro-products, namely Rice, Wheat, Cotton and Sugarcane and assesses the impacts of export performance of India during pre and post WTO period.

1.9.1 Objectives

The specific objectives of the present study are given as follows:

- To understand the function of WTO and analyzing provision assigned between WTO and India in sphere of agriculture;
- To examine the impacts of WTO provisions in regard to agriculture subsidy and domestic food subsidy in India;
- To measure the circumstances & problems of Indian farmers and peculiarity of Indian agriculture;
- To assess the impacts of export performance of India during pre and post WTO period;
- To analyze the Aggregate Measurement of Support (AMS) during WTO period in case of non-product specific support; and
- To suggest the remedial pathways for enhancing the agriculture production and improving ways for living conditions of farmers.

1.9.2 Hypothesis

1) \( H_0 \): There is no significant change in agricultural growth rate of India during pre and post WTO period.

\[ H_1: \text{There is significant change in agricultural growth rate of India during pre and post WTO period.} \]
2) \(H_0\): There is no significant change in agricultural exports of India during pre and post WTO period.

\(H_1\): There is significant change in agricultural exports of India during pre and post WTO period.

3) \(H_0\): There is no significant change in food subsidy (related to green box) of India during pre and post WTO period.

\(H_1\): There is significant change in food subsidy (related to green box) of India during pre and post WTO period.

4) \(H_0\): There is no significant change in fertilizer and electricity subsidy (related to amber box) of India during pre and post WTO period.

\(H_1\): There is significant change in fertilizer and electricity (related to amber box) of India during pre and post WTO period.

5) \(H_0\): There is no significant change in Non-product specific Aggregate Measurement of Support (AMS) during pre and post Doha round.

\(H_1\): There is significant change in Non-product specific Aggregate Measurement of Support (AMS) during pre and post Doha period.

1.9.3 Methodology

The study has based on secondary information. The secondary data/information has been collected from the country report of WTO, UNDP reports, World Bank reports, Economic Survey, Asian Development Reports, Agriculture Census of India, various reports of Ministry of Agriculture, GOI, reports Ministry of Finance GOI, Ministry of Commerce and Industry, GOI, reports and plans of Planning Commission, GOI, Reports of National Sample Survey Organization (NSSO) and various reports of the experts or non-government organizations working on agriculture sectors. The secondary data and information has been covered both from published and unpublished documents. The reference period for the study is divided into two period; i) Pre and Post WTO period and ii) Pre Doha and Post Doha period. Further, all hypothesis have been tested on the available secondary data by applying appropriate \(t\)-test, formula given below.
Mean, \( M = \frac{\sum x}{N} \)

S.D. = \( \sqrt{\frac{\sum (X - M)^2}{N}} \)

t = \frac{M_1}{\sigma_2} \approx \frac{M_2}{\sigma_0}

1.9.3.1 Approaches

The objective one (1) has been assessed through the WTO documents, country reports and few major studies while in case of objective two (2), objective three (3) and objective four (4), it have been examined by the WTO documents, agriculture census, reports of Ministry of agriculture, reports of Ministry of Finance GOI, Ministry of Commerce and Industry, GOI, reports, plans of Planning Commission, GOI, and Economic Survey. The objective five (5) has been examined through the report analyzed by Lars Brink which done in his working paper. Lastly, the study has provided remedial suggestions for enhancing the agriculture production and improving ways for strengthen the conditions of farmers based on overall above analysis of objectives. The all hypothesis have been tested on the available secondary data by applying different appropriate statistical modules.

1.9.3.2 Testing of Hypothesis

For testing the hypothesis, the reference period for the study has been divided into two period; i) Pre and Post WTO period and ii) Pre Doha and Post Doha period. Further, all hypothesis have been tested on the available secondary data by applying different appropriate statistical modules. The hypothesis one (1) has been tested by taking the national published data of Planning Commission, Government of India related to national growth rate of Indian agricultural. The hypothesis two (2) been analyzed by taking export data from Government of India, which has been published in different Economic Survey Reports. The third (3) hypothesis has been examined on the data published in different Economic Survey Report, published by the Ministry of Finance, Government of India. The fourth (4) hypothesis has been tested on data available in Fertilizer statistics, Fertilizer Association of India, Various
Issues, New Delhi and data available in Annual Report of State Electricity Boards, Departments, Power and Energy Division, Planning Commission, New Delhi, Various Issues. The last fifth (5) hypothesis of non-product specific Aggregate Measurement of Support (AMS) during WTO period tested by taking data of Lars Brink, which he used in his working paper published in April 2014, by International Agricultural Trade Research Consortium, titled ‘Support to Agriculture in India in 1995-2013 and the Rules of the WTO’.

1.10 Limitations of the Study

The study in the process is faced by both methodological and data constraints. The study has analyzed the impact of WTO specifically on Indian agriculture sectors. Such study is highly time and resource consuming. This study depends largely on a disaggregate analysis which are static in nature, choosing only those variables that are closely related to our objectives. The study also faces certain constraints on data in the measurement of production trends of agro-products, import-export of selected commodities, trends of subsidy provided by Government of India in agriculture sector and consequential impacts on living condition of farmers.