

Chapter – One

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Chapter One

Introduction

Agriculture remains the back bone of societies since ages and histories, and it is of no difference in case of India. India became self reliant in agricultural production and it had increased its agricultural export tremendously after the Green Revolution occurred in the later 1960s. This helped the Industrial sector to grow fast as Industrial sector of any country remains interlinked with agricultural sector of that country, that is why when agricultural sector develops Industrial sector also develops simultaneously at the same time. The green revolution also helped obtaining food security of the nation and helped India becoming self reliant. The agricultural sector comprised around **50%** of India's GDP in the early 1950's. Today around **17.32%** of India's GDP (India's GDP is US \$ **2.848** trillion),^[1] **13.25%** of India's total export and **47%** of total employment comes from agricultural sector. About 70% people directly or indirectly depends on it and about **43%** of India's total land is covered by agricultural sector. India became self sufficient in Food grain production decades after independence. It is now producing around **280** million metric tons of food grains in the world and ranks first in many major agricultural food crops in the world. As per the WTO data in 2014-15 India's share of Global export was 2.10% and its import was 1.26%, that does not means the value of Import also lower than export but on the contrary the value the import was higher than export (The value of Import was US\$ 1.82 trillion in 2012 where export was US\$ 1.66 trillion dollar). The export share of India's agricultural sector has also increased. After liberalization phase started in the world with **WTO**(1st Jan 1995) and **AOA** many thing has dramatically changed in agricultural sector of India, for example, **Total yield or Output, Farm Pattern, Agricultural Infrastructure, Annual Compound Growth rate in Production & Export, Imports, Prices of major agricultural food and non food materials, Export Competitiveness, Quantitative restrictions in import, Tariff & non Tariff barriers , Export subsidy, Domestic support, Sanitary & Phyto sanitary measures, Geographical Indication, Trade related intellectual property rights** etc. WTO which has replaced GATT (general agreement on trade & tariff 1947-1994) was established on the basis of multilateral trade agreements among nations, and is committed to Free trade, non discriminations in trade, Removal of Quantitative Restrictions, Non tariff barriers between nations and free & fair competitions in trade among nations. India who is a founding member among 162 member nations of WTO, maintaining and obeying most of the clauses related to Developing nations in WTO charters. Our study have looked into the norms and rules of WTO, how far India has followed those rules and what are the consequences has happened to India's agricultural trade since WTO and a comparison between the pre & post WTO era in trading of Indian agricultural commodities. And our Findings in this small study is that India has benefitted in many extent in agricultural trade in the post liberalisation or post WTO period and the trade indicators are positive in many extent but declining trend of India's agricultural export to total export and its inefficiency in expertise in international agri-trade , increasing income inequality and disparity among farmers and declining or lack of both public & private investment in agricultural development in the Post WTO period is an emerging cause of Concern. In our Study we have tried to understand various changes in India's agricultural sector that have occurred during the last two decades after liberalisation, including Changes in Indian IPR regime with TRIPS regime and farmers Rights, trading of some major commodities and Impact of WTO regime in the agricultural trading sectors of the developing countries in the post WTO regime.

The WTO is an institutional body to promote International Trade was formed on 1st January, 1995 with the objective of promoting global trade in a more liberalised way. The WTO came into existence after the GATT (General Agreement on Tariffs and Trade) which was formed on 1948 with 23 member countries with the objective of growth and development of all member countries. In place of ITO, GATT was established in 1947 by the western nations. Since it came into existence GATT emphasized for the expansion and promotion of global trade by reducing tariffs and other forms of protection imposed by member countries on trade. This continued effort of GATT finally increased its members from 23 countries to 123 countries. The GATT also provided framework for settlement of trade disputes. Continued reduction in trade barriers helped trade growth consistently outpace production growth.

[1] Source: Wikipedia

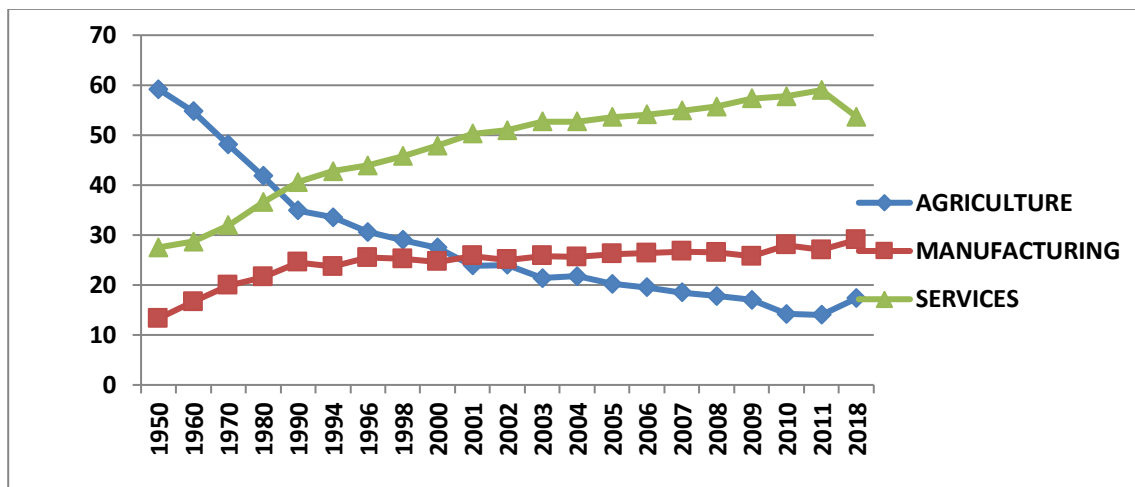
Though the functioning of GATT was quite satisfactory in encouraging countries to engage and liberalise trade but there existed several limitations of the GATT appeared in the early 80s. It was less effective in the settlement of conflicts and disputes between DCs and LDCs in tariff, nontariff barriers and market access. World trade became more and more complex and GATT failed to apply its principles into practice, and thereby led GATT members to have fresh round of trade negotiations. The eighth round of multilateral trade negotiations popularly known as **Uruguay Round**, covered new areas like agriculture, textile, TRIMS, TRIPS, services etc. The eighth and the most popular Uruguay Round commenced in 1986, which was to be concluded in 1990 but this could not be happened as the issues involved in it faced huge dissatisfaction among the participating countries. At the Uruguay Round, developing countries took on unprecedented obligations not only to reduce trade barriers, but to implement significant reforms on trade procedures, custom valuation and on many areas of regulation that established the basic business environment in domestic economy (example, technical, sanitary standards and intellectual property law). On December 20, 1991, the Director General of GATT and the Chairman of the trade negotiations committee, Arthur Dunkel, drafted a proposal which included most negotiating areas of International trade (including Agriculture, MFN, TRIPS, TRIMS, SPS, GI, CBD etc) and after almost a decade of discussion & negotiations the draft was finally accepted by 117 nations on 15th April, 1994 in Marrakesh, Morocco. Uruguay Round enclosed mandate to have negotiations in 15 areas, in part 1, negotiations on trade in goods to be concluded in 14 areas and in part 2 negotiations on trade in services. Thus this new round of negotiations also known as WTO agreement not only covers traditional GATT subjects but also new areas like Trade Related Intellectual Property Rights (TRIPS), Trade Related Investment Measures (TRIMS) and Trade in Services etc. In this way the GATT was converted to WTO on first January 1995 as a conclusion of the Uruguay Round agreement to give encouragement and promotion global trade. Several agreements had taken place in WTO summits. Some of them like Agreement on Agriculture (AOA) are mostly important. With the implementation of the provisions of the Agreement on Agriculture (AOA) by the members of WTO, the international trade opportunities are expected to change as trade barriers are reduced and free trade takes place. These changes would also ensure that competition among the countries in producing individual product or commodity will play a major role in the international trade. There was an institutional effort made by the GATT under Uruguay round to liberalise Agricultural trade by formalising rules under Agreement On Agriculture (AOA) which would work on reduction of trade distorting tariff & Nontariff Barriers imposed by countries on Agricultural trade. AOA emphasised on (i) **removal of QRs**, (ii) **Conversion of Non-Tariff Barriers to Tariff**

Barriers, and reduction of Domestic Subsidies to agricultural export & Tariff on import gradually over a certain period. As the Agricultural policies are now administered by the rules under the WTO, therefore understanding the long term implications of these changed policies on domestic agricultural trade are very important to the WTO member countries like India which exercises a good amount of State influences in agricultural sector like, maintaining MSP, giving Input Subsidies, maintaining QRs, restrictions & good amount of Tariff on movement of external imports and exports, ,good amount of Public stock holding of agricultural produce , Setting Buffer Stocks etc. The provision for removal of restrictions on agricultural import was mandated like 6 years time period was for developed nations (by year 2000) and 10 years for developing nations (by year 2004). Total agricultural export is around 11% of India's total export and it is the third largest producer of agricultural commodities in the world. Though declining agricultural growth rate along with export shows country's loss in agri-trade due to deteriorating terms of trade in the post WTO regime as compare to the Pre WTO Regime but the amount of total yield in agricultural production & export has increased many folds since Independence. In India the looking after of agricultural sector is done by mainly by the State Governments with the support & help of Central government. Though the growth rate in yield production in agricultural sector in India was very poor in the last decade then also India was a massive producer of Wheat, Rice, Fruits, Vegetables, Cotton and Sugarcane, leading Producer & Exporter of Meat & meat preparation, spices, Milk & milk products, Livestock's, Fruits & vegetables, Fisheries, Poultries and hold number one position in producing Pulses, Milk, Jute etc as per the recent study done by Economic Survey of India (GOI) 2015.

1.1: A brief Look on the Trends of India's Foreign Trade & WTO:

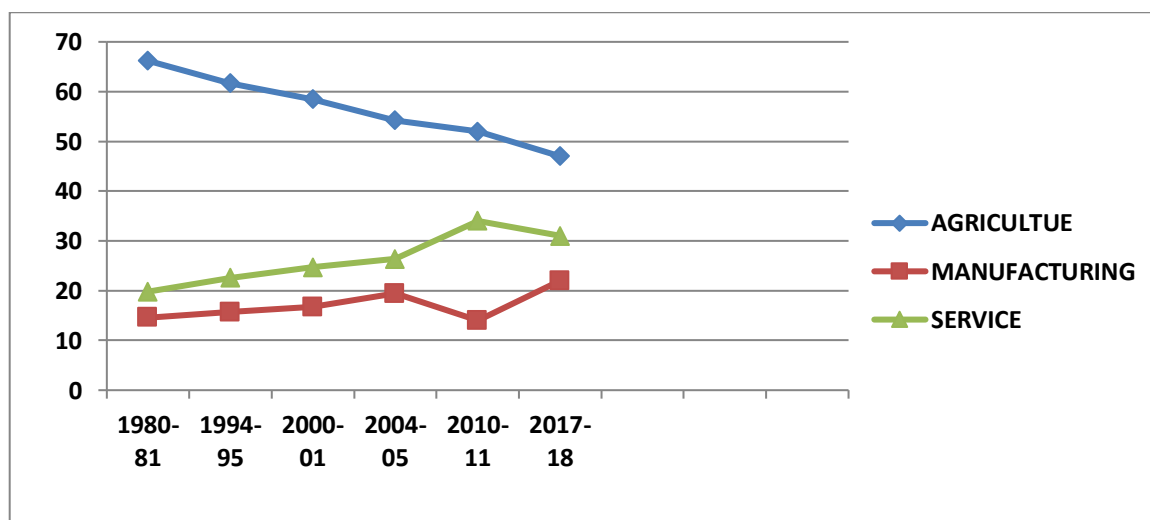
After the recent global recession the world trade is recovering slowly after 2012 with low growth rate of about 3.5% in the recent time. The economic crisis has also affected the volume of world trade as it has been growing very slowly since the crisis (as per the IMF data it was US\$ 18.30 trillion in 2012-13). There exist several reasons behind the low growth rate of world trade other than recent economic crisis. These may include Trade wars between USA & China, Natural Calamities in East Asia (Indonesia, Japan), Oil price hike due to wars and instabilities in the Middle East and West Asian nations. It is noteworthy that the rate of economic Growth is higher in developing countries than the developed nations in most cases. India though is an integral part of Global economy is said to have faced less effect of global economic crisis because of its dependence on domestic demand mostly. The following figures show the trends of India's foreign trade in the Post WTO period and agricultural growth in production since independence.

Figure 1.1: Trends of Percentage share of Primary, Secondary and Tertiary Sector in Indian GDP



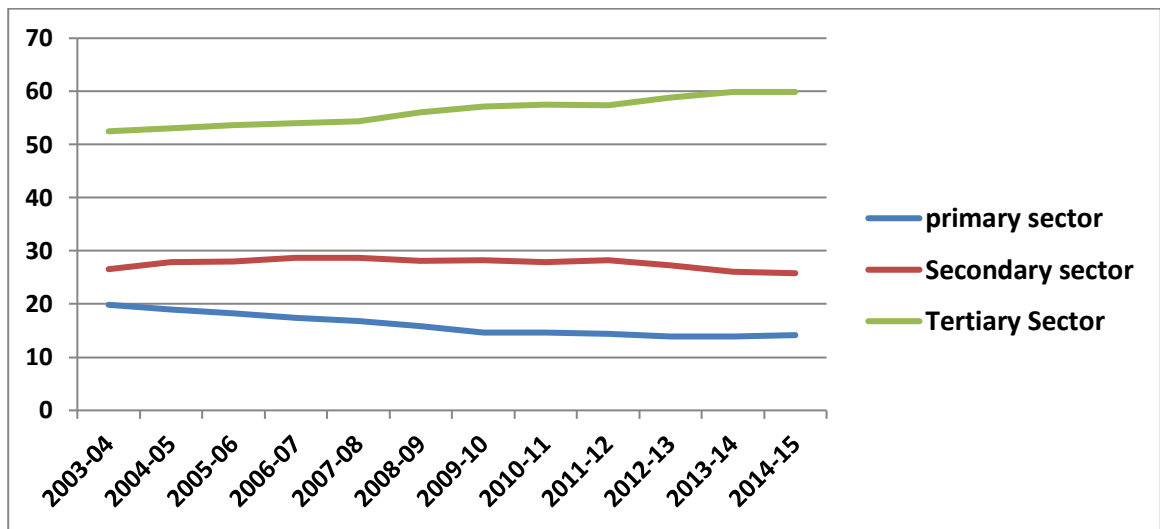
Source: RBI, Statistics on Indian Economy.

Table1.2: Trend of Percentage share Primary, Secondary & Tertiary sector in Employment in India



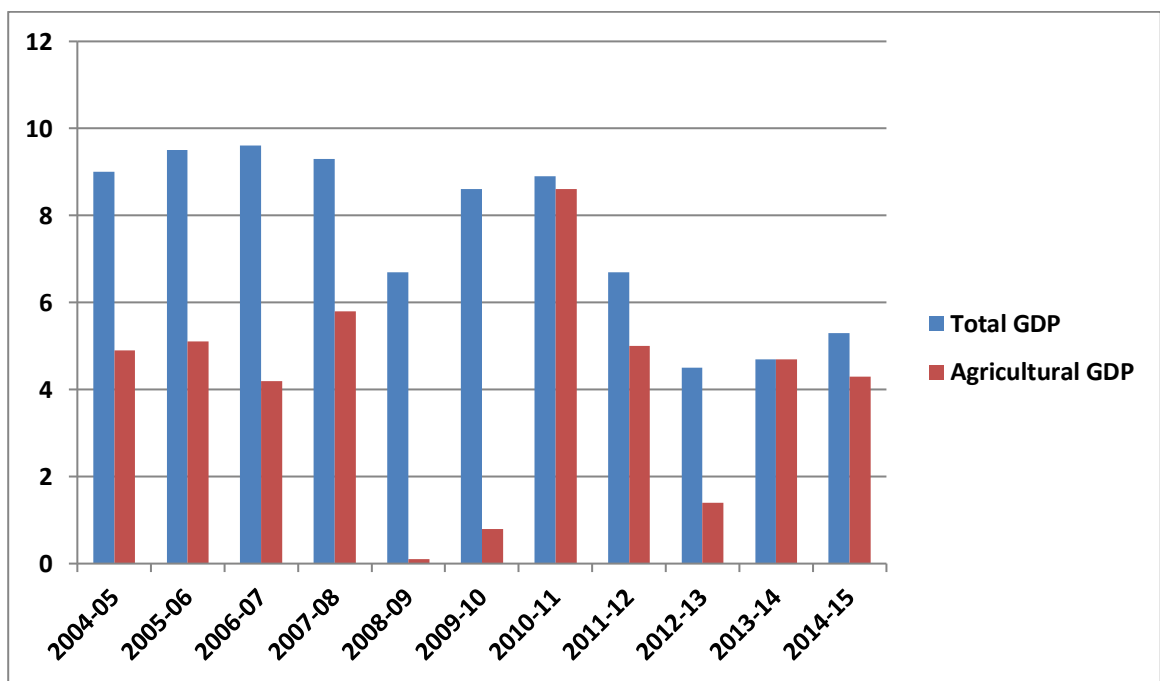
Source: RBI, Statistics on Indian Economy.

Figure1.3: Latest Trend of Share of Indian GDP at different Sectors at Constant 2004-05 prices.



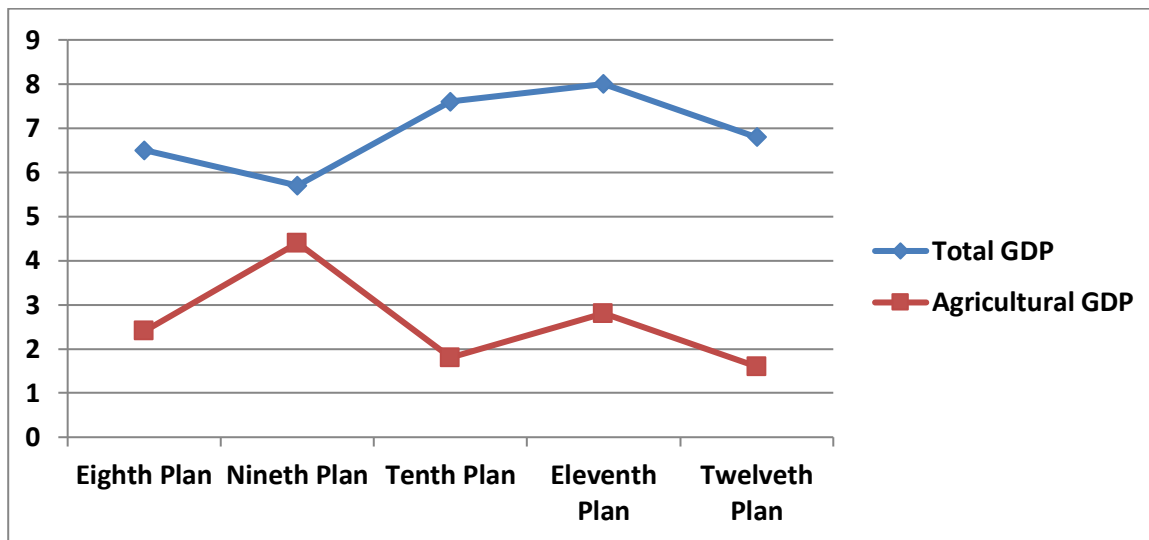
Source: CSO

Figure 1.4: Latest Trend of Indian Overall & Agricultural GDP Growth Rates at Constant prices of 2004-05



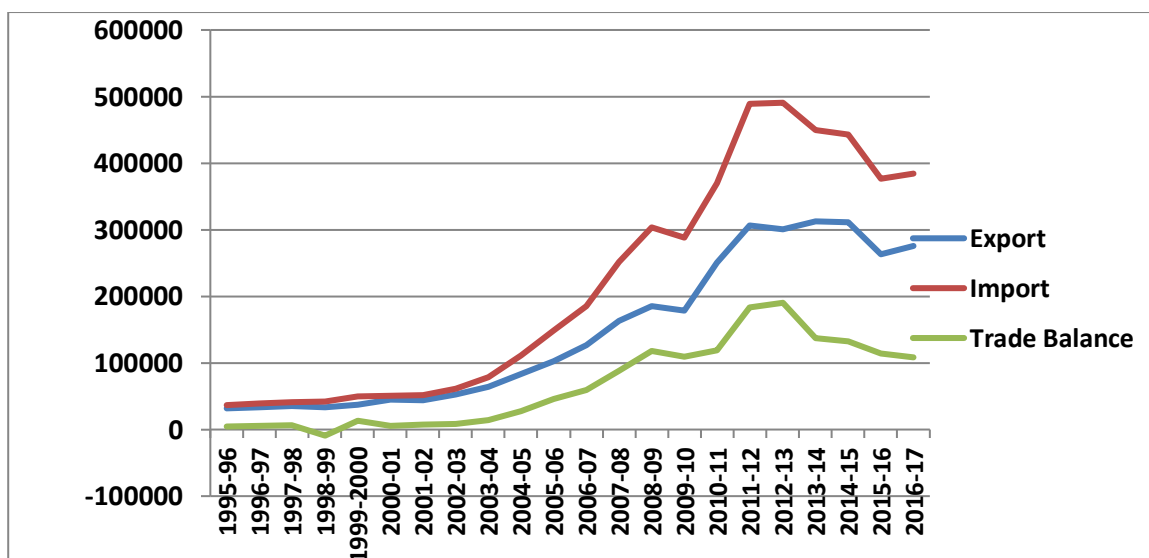
Source: Based on CSO Data

Figure 1.5: Trends of Agricultural growth Along with Total GDP growth rates in different latest Plan Period



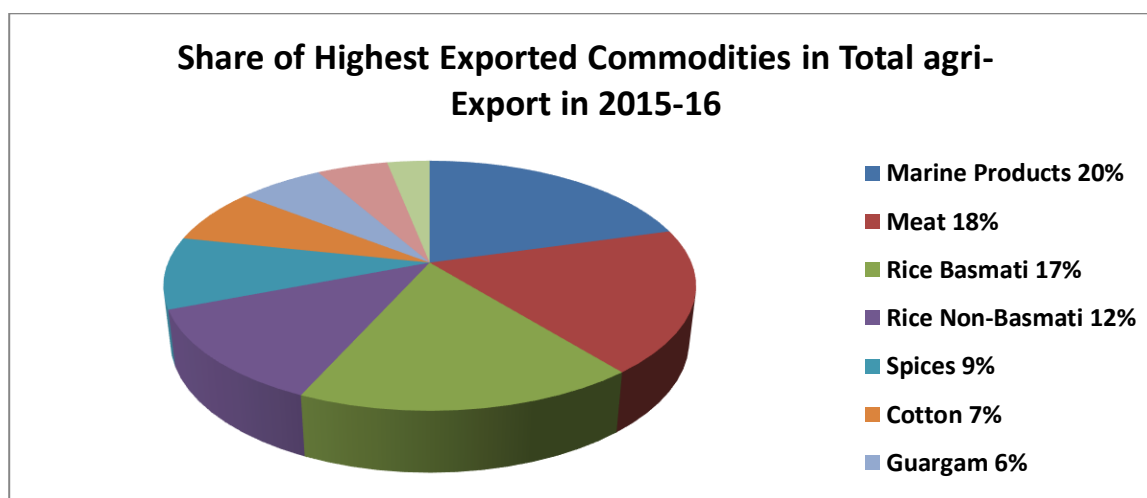
Source: Based on CSO Data.

Figure1.6: Trends of India's Foreign Trade (Export, Import & Trade balance) since 1950 (In US\$ million)



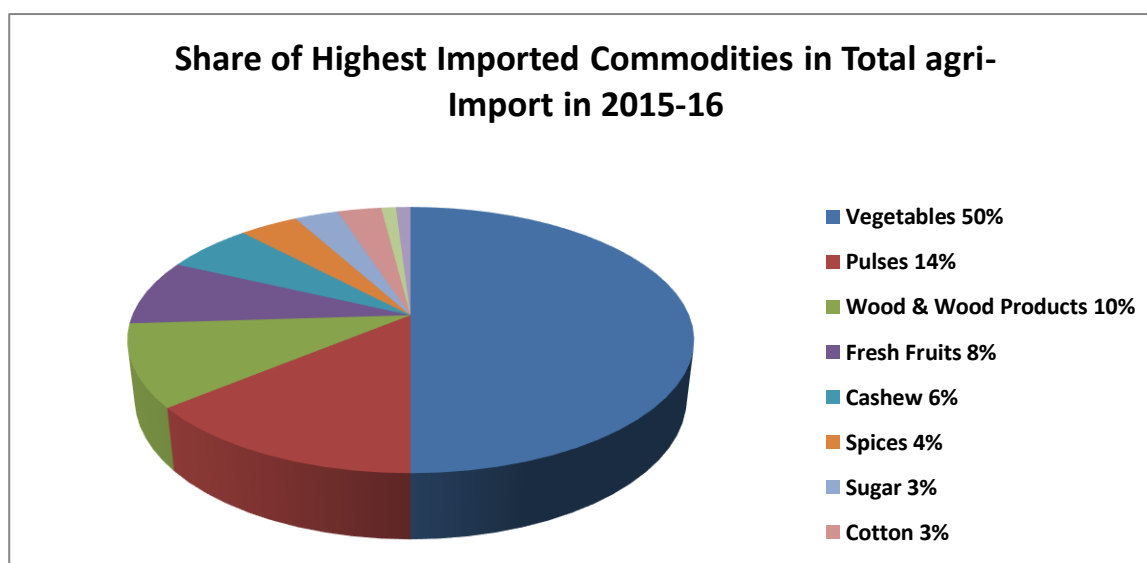
Source: RBI, Hand Book of Statistics on Indian Economy.

Figure 1.7: Share of Highest Exported Commodities in Total agri-Export in 2015-16



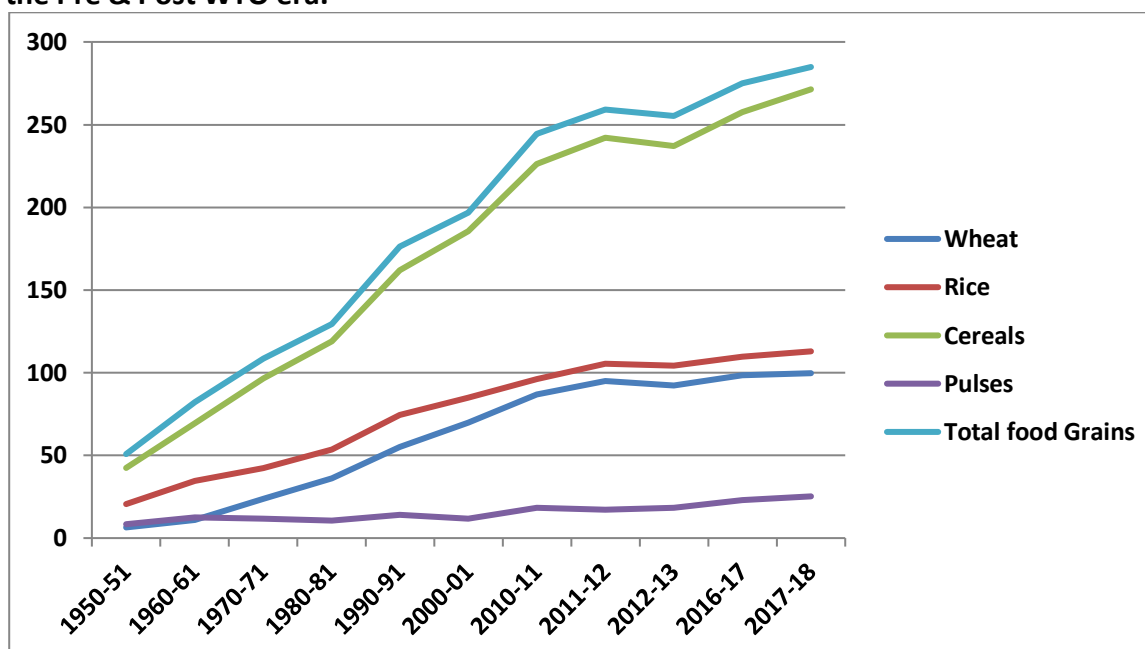
Source: CSO Based data.

Figure 1.8: Share of Highest Imported Commodities in Total agri-Export in 2015-16



Source: CSO Based data.

Figure 1.9: Trends of India's major agricultural Commodity Production (in million tonnes) In the Pre & Post WTO era.



Source: RBI, Hand Book of Statistics on Indian Economy.

The above figures show how India's export/import and agricultural production growth have taken place in the Pre & Post WTO eras. The trade (export/import) have grown since 1995-96 with moderate rate and it took pace after 2005-06 then again after 2015 the export / import growth decreased noticeably. In case of production of some of the major Indian agricultural commodities the growth rate was like consolation in the Post WTO era as it was higher in the Pre WTO era.

1.2: The History, structure, organisation & Functions of World Trade Organization (WTO):

The formation of WTO was a major part of the long process had been continuing since the starting of the Uruguay round agreement in the 1980s. The WTO was meant to form a internationally based multilateral world trading system based on equity & equal justice of free & fair trade which would give assistance to marginalised or developing countries to participate and gain benefits from international trading system. The Breton Woods (1944 in new Hampshire, USA) conference gave birth to many international organisation to look after and help trade and countries to overcome from the economic destructions of the world war two like IMF (1945), World bank (international bank for reconstruction & Development in 1945) , ITO (international Trade Organisation in 1948) etc. These organisations along with their branches (IDA) has been giving loans to poor countries, helping in managing exchange rate volatility and helping international trade both directly & indirectly to spread and develop.

The ITO was replaced by GATT (General Agreement On Trade & Tariff) in 1947-48 as new multilateral organisation with 23 founding members and an objective to (a) To Promote, increase and boosts the World Trade, (b) Providing Dispute settlement Mechanism (DSM) in international trade arena (c) Give space to the member countries to sit together and discuss on the negotiation on Tariff system and (d) Maintaining rules & regulations internationally to maintain trade smoothly. The GATT was quite successful in maintaining and lowering tariff barriers to international trade. The GATT has a history of eight rounds of trade agreements in which the Uruguay Round in 1986 was most famous.

In this round the discussion on liberalisation and reform on many areas took place like Tariff & Non Tariff measures, IPRs, Agriculture, textiles, MFN, several service rules and dispute settlements measures took place. The ending of this round was completed with the foundation of WTO on 1st January 1995. The Uruguay Round agreement which was started in September 1986 in Punta Del Este in Uruguay ended in April 1994 in Marrakesh Morocco. In the following table we can see different rounds of GATT in different time.

Table 1.1: Different Rounds of GATT (Year Wise)

Years	Different Rounds	Number of Countries Participated	Issues Discussed
1947	Geneva, Switzerland	23	Tariff
1949	Annecy , France	13	Tariff
1951	Torquay, Britain	38	Tariff
1956	Geneva, Switzerland	26	Tariff
1960-1961	Dillon Round, Switzerland	26	Tariff
1964-1967	Kennedy	62	Tariff & Anti-Dumping Measures
1973-1979	Tokyo, Japan	102	Tariff & Non Tariff Measures
1986-94	Uruguay	128	Tariffs, Non-Tariff measures, IPRs, Textiles, Goods & services, agriculture, dispute settlement, WTO.

Source: WTO data from Web.

The GATT was diluted and WTO forms on the basis that the GATT was dealing in trade of only goods but WTO is formed to not only deal with goods trade but also with Services, IPRs, different rules for agriculture (AOA contents).

1.3: The WTO:

The WTO is an intergovernmental international organisation formed on 1st January 1995 with 123 founding members (164 members now) after completion of Uruguay round agreements and dilution of GATT (head quartered at Geneva Switzerland) the WTO was established for maintaining a internationally justified free & fair trade and building a multilateral body of trade which is non discriminating and helpful to countries for peaceful and smooth trade among nations. WTO works on barrier less free trade. It holds ministerial Conferences and rounds to help solving issues between nations and conduct negotiations on trade among nations. It also helps solving trade disputes among nations so that countries can conduct smooth and fair trade without unnecessary conflicts. The WTO is working on the basis of Doha round agreement which had taken place on 2001 and is still active today but the formation of WTO was the end result of Uruguay round agreement (from 1986-94).

The structure of the WTO is divided into seven division which are **(a) Ministerial Conference, (b) General councils, (c) Trade policy Review Body, (d) Dispute settlement Body, (e) Councils on Trade in Goods & Services, (f) Director general & Secretariats, (g) WTO Committee on Trade and Development and Committee on Trade and Environment.**

The **Ministerial conference** which held once in every two year is the apex decision making and lawmaking body or governing body of WTO represented by finance minister or governor of every 164 countries. This is of a democratic structure and any decision taken by this body is based on voting system.

The **General council** which is based on Geneva is a council with every country's representative of ambassador status works on maintaining and implementing the WTO rules properly and efficiently.

The **Trade Policy Review** agents under the WTO are also the representatives from all the countries who looks after the rules and trade policies and search for their effectiveness or loop holes and even this body looks after that the rules are implemented among nations properly or not.

The WTO has a **Dispute Settlement Body (DSM)** which is comprised of representatives from many countries and it has permanent appellate body looks after the trade disputes raised among nations and try to solve it according to the International law on trade.

The **Councils on Trade in Goods & Services** under WTO is a body represented by members from all countries which looks after trading of both goods & services and IPRs at the same time.

The **Director General** of WTO is elected by member states and the office of the DG is at Geneva. There are 700 **secretariats** at WTO who can't elect DG works as administrative officers there at WTO.

The **WTO Committee on Trade and Development (1965)** and **Committee on Trade and Environment (1971)**, is a WTO body works for sustainable growth & development of countries and at the same time maintaining conserving environment for future sustainability.

Table 1.2: Following are the different ministerial conferences conducted by WTO

Locations	Years
Singapore	1996
Geneva, Switzerland	1998
Seattle, USA	1999
Doha, Qatar	2001
Cancun, Mexico	2003
Hong Kong	2005
Geneva, Switzerland	2009
Geneva, Switzerland	2011
Bali, Indonesia	2013
Nairobi, Kenya	2015
Buenos Aires, Argentina	2017

Source: WTO data from Web.

1.4: The WTO has the following functions (as per the Article III of WTO charter):

(1)The WTO looks after the matter that all member countries should obey sincerely the WTO norms independently with accountability and implement the WTO agreements properly.

(2)WTO also looks after any country's national trade policy and asks countries to maintain accountability and transparency of trade policies.

(3)The WTO give trainings to least develop countries and even it gives technical assistance to them frequently so that these countries can grow faster and sometimes it gives space to the developing countries and asks them to sit together and negotiate on trade related issues.

(4) WTO looks after the issue of unemployment throughout the world and helps countries to fight against the issue of Unemployment and in doing so it seeks help from the IBRD (World Bank) and IMF. It maintains good relations with these international organisations to help developing or poor countries for economic development.

(5) The WTO provides trade related Dispute settlement body (**DSM**) which is a legal body of WTO, to solve trade related dispute issues between member countries in a legal way.

(6) The WTO always works hard to maintain a lower tariff barrier between nations so that export /import could rise and reach to a level so that countries can produce goods and services up to its optimum capacity and in this way it can reach to the equilibrium level and in this way it can rise and maintain higher standard of living and a better society.

The scenario of global agricultural trading system is being changed from the view point of global Trends of export /import, Volume, Compositions and directions of agri-trade in the Post WTO regime, for example, though the share of vegetable oil, wheat, Rice etc have high shares in global share of agri-trade but the production, consumption & export pattern of agricultural commodities is changing every day after the WTO regime as the demand for traditional commodities like rice, wheat, tea, coffee, Oil meals, Marine Products have been replaced by high value agri-products like fruits & vegetables, Spices, Milk & Milk products, Meats, Fishes, Egg and many other horticultural products. These high value agri-products are helping rural areas to increase their income levels. New forms of markets creates new opportunities for goods and services to be traded for example the emergence of future trading market which is a new addition to the existing forms of market in the post WTO era is responsible for growth in the volume of commodity trade in agriculture and reduction in price uncertainty and market fluctuations. One of the main concerns in most of the member countries is Environmental issues related to growth of trade & GDP of nations. As the global trade is flourishing it is flourishing at the cost of environment. This argument is becoming popular among many members in WTO forum that is why the environmental issue for sustainable growth & development is essential before taking any other decision in WTO ministerial conferences. In the Post WTO period the world is witnessing massive changes in growth, distribution and development in the economies of the World. For example the last Economic crisis led the western world's economies to a distressing situation where their growth rate are getting reduced to a minimum level and the world share of trade also getting out from these developed nations (only 35% global trade share are now with the Developed nations) where developing nations has been very much successful in increasing their share in global trade by outstanding performance in growth. GDP of Countries like India, China have grown many times since WTO came into existence and in most cases the export growth is much higher than the overall GDP growth of these nations but in developed world other than USA most countries were not successful to grow as faster as the developing world particularly from the time of World Economic Crisis begin.

1.5: India's Probable Challenges and opportunities in the WTO Regime

The WTO (Including AOA & TRIPS) regime after GATT provides a international multilateral, rule based, free & fair and non discriminate world trading system with 164 member countries administers about 90% of the world trade. The WTO accepts Special & Differential (S&DT) treatment for developing countries as one of the main objectives of it to integrate developing countries (about two third of WTO members are from developing countries which are mostly suffers from lack of capital formation & Infrastructural constraints as compare to the DCs) dependant on trade for their economic development) to the world trading system. There are other provisions for developing countries lies in the WTO trade

negotiations for example the **non-reciprocity condition**, the benefits of getting extra time to full fill trade requirements of WTO, fundamental reforms in Industrial & agricultural sector, abolishing QRs and quotas used against developing countries reductions in Custom duties & bound limit of duties, etc, which helps developing countries to cope with the DCs and acquire benefit from trade in the new world order. In case of India as it is a faster developing country and a founding member of WTO so it would definitely gain benefits from new international order framed by WTO in expanding its export and trade volume of agricultural sector which will be helpful for India to achieve faster economic growth and development of Society. The MFN (most favored nation) & dispute settlement criteria under WTO may help India in expanding trade under WTO.

There are certain areas exists where India may have to face Challenges and these areas poses cause of concern related to economic and trade sovereignty under the WTO regime as it decides and frame rules of international trade secondly, new trade rules under AOA, TRIPS, TRIMs, TBT, SPS, and GI India will have to struggle to comply with these laws and compete in international trade and thirdly the developed nations which take most decisions and dominates WTO related rules, conventions and ministerial conferences (particularly countries like USA which is violating and dominating international trade rules for its own business interest from last century and still in trade war with China) are ready with their big MNCs to flood the domestic markets of developing nations including India. So it is a challenge for India to cope with these new issues of trade under neo liberal international trade principles and give safe guard to its employment and agriculture.

In the next chapters we shall try to understand these issues more vividly with data analysis and discussion.

1.6: Research Questions:

We have noticed that there exists Tremendous differences, in production, distribution, marketing, export, import, pricing, structural change and policy making, between the pre and post WTO Regime. That is why the essential Research question necessarily comes within our mindset that why this happens and what are the objective and visions of the policy makers in doing so. With the rising of big farmers with big size land holding, earning huge profit along with the investors in the forward trading market, giving more emphasis on agricultural cash crops production, giving birth to a highly volatile price regime, cutting down import taxes and lowering subsidies making us more interested in this subject to study and to do research on this.

According to the **World Bank reports**, the sluggish growth in agriculture along with its declining percentage in the GDP is associated with, [2]

(a) Lack of Infrastructural & institutional facilities and illiteracy, general socio-economic, backwardness, slow progress in implementing land reforms and inadequate or inefficient finance and marketing services.

(b) Adoption of modern agricultural practices and use of technology is inadequate, hampered by ignorance of such practices, high costs and impracticability in the case of small land holding.

(c) The allocation of water is inefficient, unsustainable, and inequitable with the deteriorating irrigation infrastructure.

(d) Declining trends of public Investments in Indian agriculture and protections to the farmers.

(e) Declining TOT for LDCs and developing nations in the new trade regime.

In the course of our research work and study we shall deal with the following questions : Do the new agricultural policies under WTO has been able to give rise to Indian agricultural growth , Productivity, export, the export performance and competitiveness of major Indian agricultural commodities during pre and post –WTO regime? Expanding market along with helping India to eradicate poverty, Malnutrition, and generate employment etc? Secondly, which of the areas related to agriculture has been affected hardly after the implementation of recently amended WTO policies?

1.7: Objectives of the study:

Agricultural commodity trade plays an important role for country's overall growth & development. India has been traditionally an agriculture based nation and agricultural sector plays a vital role in its economy. But since the inception of the WTO under the economic liberalization phase there has been a tremendous change is visible in growth, Expansion, Volume, composition & Direction of agricultural commodity trade in India. Some economists think this was natural and positive in helping economy to develop while others think this was an intervention by international neoliberal wealthy nations to economy & independent trade sovereignty of India with neo imperialist ambitions. The following are the objectives of our study to understand,

1. The impact of WTO regime on Growth of Agricultural GDP & Export of major Indian agricultural trading Commodities and a comparison between the Pre & the Post WTO periods.

2. The impact of the WTO on foreign trade including agricultural trade and the role of the Government.

3. The impact of WTO on Composition & Direction of Major Indian agricultural Commodity trade and the difference of these in the Pre & Post WTO regimes.

4. The impact of WTO in agricultural export Diversification & changing destinations of agricultural trade and a comparison between the Pre & Post WTO regimes.

5. The effect of AOA (Agreement on Agriculture) on Indian agriculture and a comparison between the Pre & the Post WTO eras in this regard.

6. The effect of WTO regime on export competitiveness of major Indian agricultural commodities.

7. The impact of the new IPR regime under TRIPS of WTO on farmers rights, biodiversity and overall farm economy.

8. The probable remedial suggestions & recommendation measures to improve Agricultural commodity trade in India.

1.8: Research Hypothesis:

We can put forward the following research hypothesis for our Study.

- In the Post WTO regime India was able to increase its volume, growth, Export share and diversification of agricultural commodity trade in the world as compare to Pre WTO period.
- The AOA and TRIPS regimes under WTO have some detrimental effects related to farmer's rights, Biodiversity of India, Seeds rights, Geographical Indications etc.
- India's agricultural GDP has increased many times in Post WTO period but the growth and the percentage share of it to total GDP of India has gone down in the Post WTO period as compare to Pre WTO period.

1.9: Research Methodology:

Our study which is based on the secondary data, has been divided into two time period, i.e. Pre WTO period (From 1986-87 to 1995-96) and post WTO period (from 1996-97 to 2016-17). These data has been collected from various secondary data sources which includes www.rbi.gov.org.in , Handbook of Statistics on Indian Economy, Reserve Bank of India (RBI),government data from Ministry of Agriculture & Cooperation, NSSO reports, Agricultural census data, Beauru of Economics & Statistics, CMIE and other public reports, state government department of agriculture, internet website www.wto.org, Economic survey of India, (GOI), Directorate General of Commercial Intelligence and Statistics (DGCI&S), Kolkata, data like Ministry of agriculture, A.P.E.D.A., FAO trade & production year books, FAO Stat Agriculture Data Base, World Bank world development Indicators, Indian Journal of Agricultural marketing and Indian Journal of Agricultural Economics, Related data published on E.P.W.S., Ministry of commerce Government of India and various papers published on interested topics. Reference period of the study is taken from 1986-87 (pre WTO period) to 2016-17 (post WTO period). We have taken 1994-95 as the cut off date for pointing the pre and post WTO periods was the beginning of the WTO era from 1st January 1995, with the support of 123 founding members including India. This research study would discuss the comparative performance of trade of major Indian agricultural commodities during pre (1986-87 to 1995– 96) and post WTO (1995-96 to 2016 – 17) regime. It would analyze the export performance and competitiveness of major Indian agricultural commodities during pre and post –WTO regime.

Tools used in data analysis:

Compound Annual Growth rate (CAGR):

The **Compound Annual Growth rate (CAGR)** is a term for measuring geometric progression ratio used in many areas including measuring of growth of various type of data like agricultural export, investment etc in a specified time period.

In our Study we have Used **CAGR (Compound Annual Growth Rate)** to show how different exporting commodity's export growth is taking place.

The mean annual growth rate can be synonymously referred to as compound Annual Growth rate (CAGR) of growth of agricultural production or export of a specified number of years. To calculate this we first divide the last year's value of agricultural growth by initial years value of growth then raise the value to the power of 1 divided by total number of specified years and ultimately we subtract 1 from it, Which can be shown as,

$$\text{CAGR} = (\text{Ending Value} / \text{Beginning Value})^{(1/\text{numbers of Years})} - 1$$

Secondly,

We have used Simpson Index to show year wise diversification of Major Indian Agricultural trading Commodities. It is used after taking three yearly export data together in both Pre & Post WTO period.

$$\text{Simpson Index} = D = 1 - (\sum n(n-1) / N(N-1))$$

Where,

D= Diversity,

N= the values of export of all agricultural commodities in a particular year.

N=the Value of export of a particular agricultural commodity in a particular year.

The value of D or Simpson Index varies between 0 and 1, where 0 implies no diversity and 1 implies infinite diversity of that particular agricultural commodity.

Other than these, averages, Percentage & ratio method has been used to show direction & composition of trade on yearly basis.

Thirdly,

We have used the **Nominal Protection Coefficient (NPC)** to determine whether the Agricultural commodities are importable or exportable. The NPC is a ratio of the price of a foreign good when it enters into any country and the final price of that good when it reaches to the consumers after all taxes are levied on it.

Where, **$\text{NPC}_i = P_i^d / P_i^w$**

Where **NPC_i** = Nominal protection coefficient of commodity i.

P_i^d = Domestic price of commodity i.

P_i^w = World reference price of commodity i, adjusted for transportation, handling and marketing expenses.

Here, $NPC < 1$ indicates the commodity is exportable and $NPC > 1$ indicates that the commodity is importable.

1.10: Limitation of the study:

There exists certain limitations of the Study. Our Study is entirely based on secondary data. The data is collected from www.rbi.gov.org.in and various online and offline publications, (both Govt. & Non Govt. sources). Because of non availability of various data the objective of the study was influenced by the limited data sources.

1.11: Review of Literature:

Empirical Studies: Some important studies done recently have shown that terms of trade in agricultural trade declines in many very poor countries (Least Developed Countries as mentioned by the UN) especially Sub-Saharan African countries. These heavily indebted marginalized countries fell in the group where few agricultural commodities comprise about 90% of their total export making them marginal player in global trade (Watkins and Fowler 2002; FAO 2004; UNCTAD 2004). One study recently done by FAO shows the terms of trade has declined to about half of these developing nations. A different opinion regarding TOT is found in case of BRICS and ASEAN nations by policy makers.

One major finding in recent studies it has been revealed that since 1950 to 2015 it is found that real prices for agricultural exports of developing countries exports declined comparing to the relative prices of Imports of their manufactured goods by almost 70 percent (FAO 2014). The DCs mostly rely on exporting synthetic products and protectionism in domestic import of agricultural goods from LDCs. That is why the third world countries united drawing attention of the world in the WTO conference of CANCUN in 2003 on the pricing problems associated with the commodities. Though the chance is very less that the final outcome of the **DOHA** round will end with proper solution to the LDCs long standing grievances.

The 12 OECD countries controls about 65% of the world's total Agricultural trade which was reflected in the book 'Negotiating the Future of Agricultural Policies' by Bilal (2001). Though the U.S., EU, Canada, and Australia have proven production advantages in wheat and other cereals and other temperate zone commodities, India has benefitted from its good comparative advantage in many agri-commodities.

Market should be open rather than manipulated being the narrative and contention of the Developed world particularly the USA and EU, these countries always tried to create pressure on developing nations for maintaining open market norms but they themselves violated these norms time and time again by putting tariff barriers, QRs, Anti Dumping measures and other different types of protectionist measures on importing agricultural goods from developing nations. Here India's role is very crucial and different as India being in

a comparatively advantageous position (India's agricultural export has risen multiple times after the WTO to the Developed nations) and being a developing nation has always tabled argument against the DCs for the discriminations to LDCs by them and protectionist measures adopted by them. India's role has been positive and constructive in the post trade liberalization era for multilateral free and fair trade.

There has been substantial empirical literature on various aspects of this research paper. Where some of the researchers have expressed their opinion which is as follows,

Matthew Saunders and Rolf Mirus (2003): They argued in favour of free trade and against protectionism and they argued in favour of proposed changes to anti dumping agreements. And even they have argued in favour of Proposed Changes to the Agreement on Subsidies and Countervailing Measures.

Peter M. Rosset(2004) : According to him the three basic pillars of AOA are (i) Market access ii)Export subsidy iii) Domestic support. He showed a lot in the media about "trade wars" between the U.S. and Europe, about steel quotas and cotton subsidies, and about how dissatisfied poor countries are with global trade rules.

R S Deshpande, J Prachitha

(2005): These persons have put forwarded impacts of WTO policies on the Indian state of Karnataka, where according to their study the cell recommends that India's concern on food security, rural employment and need to protect the environment should not be neglected in a purely market-oriented approach. They argued that it is necessary to adopt market-friendly approach without government support.

Ashok Gulati and A. Sharma (1994): Both of these two authors have explained the upcoming situation of Indian agriculture under the WTO regime. According to them Indian agriculture will not gain much in the open trade environment under the free trade regime of WTO.

Martin Khor(2004): He has studied and worked on the topic "THE WTO AGRICULTURE AGREEMENT: FEATURES, EFFECTS, NEGOTIATIONS, AND WHAT IS AT STAKE". Here his paper starts with a brief summary of the main features of the commitments made by Members in the World Trade Organization's Agreement on Agriculture (AOA).

Samar Datta (2000). According to S. Dutta, India is self sufficient in competing with the world in rice export. And India needs not to worry about the competitive environment under the WTO regime other than price manipulation of the rival exporters of rice. India should stay at its zero import duty position on rice.

Rani, Pooja (2015): in this paper "A Study of WTO and Agriculture Sector in India" they have explained the global trade that how it is well connected. What they have found regarding WTO and India is that after engaging with WTO India has increased its domestic production and export of agricultural product and it has been helpful in increasing employment level of the country in agricultural sector. According to them Indian agricultural growth will take momentum in the coming future as investments are taking place in agricultural infrastructure in the country.

Deepika MG(2005): In her theses named **“CHANGING TRADE SCENARIO IN AGRICULTURE AND ITS IMPLICATIONS FOR THE INDIAN ECONOMY”** she wanted to express that tough trade liberalisation assumed a special significance in the context of economic reforms in the late eighties and early nineties in India, they were not directly made applicable to the agricultural sector due to its unique characteristics.

Hedayat Hosseinzadeh(2008): The main object of his research was to examine the economic effects of Globalization and the trade openness on Iran's agricultural sector. He reviewed the agricultural exports and imports policies in Iran during the period from 1980 to 2004. He surveyed the impact of economic liberalization and privatization policy on the performance of agricultural export and import during 1980-2004. He studied the future prospects of agricultural products, exports and imports.

K.B.Umesh, Akshara M., Shripad Bhat, Harish Kumar.K., Srinivasan, S.M.(Beijing 2009) : In 2009 these people have worked together for presenting paper in Economists Conference, Beijing, China, August 16-22, 2009 on the topic **“Performance Analysis of Production and Trade of Indian Silk under WTO Regime”** where they have showed that India is the second largest producer of silk and also the largest consumer of silk in the world having a strong tradition bound domestic market. In this paper, they estimated growth functions for India's aggregate production and trade parameters using annual data from 1984/85 to 2006/07.

Andre M. Nassar, Diego Ures (2009): In their IFPRI Discussion paper named **“Brazil: Shadow WTO Agricultural Domestic Support Notifications”** where they has argued that Brazil is presenting itself as being in a comfortable position with respect to domestic support in the Doha Round negotiations, and our analysis confirms this position. New rules are necessary to guarantee that policies oriented to create demand for biofuels will not jeopardize world agricultural markets. WTO rules, however, must be improved in order to capture the specific situations of biofuels, which are not the same as other agricultural commodities.

Veeramani C (2007): Mr. Veeramani in his paper titled **“Sources of India's export growth in pre and post reform period”** have discussed about the export performance and growth during the pre(1950-90) & post WTO period(1991-2005) and found more volatility or fluctuations but speedy performance in the Post WTO period.

M.Ranga & D. Sharma (2014): in their paper **“WTO and Indian Agriculture”** showed that if aspects there exists no real insecurity, related to WTO norms (like market access, domestic support , export subsidy, removal of tariff, provisions related to IPR, non tariff barriers etc) be dealt with good vigilance there exists no real threats or insecurity on agricultural trade.

Renuka Mahadevan(2003): In her paper named **“PRODUCTIVITY GROWTH IN INDIAN AGRICULTURE:THE ROLE OF GLOBALIZATION AND ECONOMIC REFORM”** she has explained that although India missed the opportunity to open up two decades ago, its attempts to do so now must be regarded as better late than never. Having realized that globalization is a necessary but not a sufficient condition for high growth production, India has undertaken economic reforms, both internal and external.

Bhowmik, Debesh(2006): In his paper titled “WTO and Agreement on Agriculture” Mr. Bhowmik expressed concerns about the consequences and implications of WTO and particularly AOA on Indian Farmers. He said these contents like Plant variety act of TRIPS Under WTO may reduce the rights of the Indian farmers and there remains a gap between the rich and the poor countries in implementations of WTO norms and severe inequality in their impact on society.

Mithilesh Kumar (2006): In his work titled “**TEMPORAL CHANGES IN DAIRY INDUSTRY IN INDIA**” he has explained that the dairy sector occupies a dominant place in providing food, income, employment and foreign exchange to the Indian economy. The positive trend in export and negative trend in imports was observed due to the successful implementation of Operation Flood and set of Government policies regarding international trade.

Mahajan and Nanda (2011): They have a recent study regarding the impact of WTO and Structural changes after liberalisation on India’s agricultural trade. According to them in the time period from 1995-2006 India’s export share growth has fluctuated from time to time with a declining tendency except for some commodities like Spices, Sugar, and Cereals etc.

Kavitha, N. V. and Reddy, N. Suma (2015): Their paper named “**A Study on the Commodity Derivatives Market and Development in India - Towards Sustainability**” was based on the agricultural commodity trading in India. They have shown on their paper that how the Government of India has initiated reforms in the commodity market of agriculture so as to solve the issue of dependent farmer or people using old agricultural exchange mechanism of agricultural commodity trade.

Vijayakumar B.K.(2007): Mr. Vijayakumar worked on impact of WTO on the Indian state of Karnataka’s cereal production and his research was named “ **CHANGES IN CEREALS ECONOMY OF KARNATAKA PRE AND POST WTO ANALYSIS**” where he analysed that the global competitiveness of cereals (rice and maize) and their economics of production over the period of time in Karnataka. In his study, he has made an attempt to estimate NPC, DRC, direction of trade, integration between domestic and international prices and supply response of rice and maize. The findings of the study would help the planners and the policy makers to formulate appropriate agricultural development, export and stabilization policies for the state as a whole.

Sunny and Waheed (2010): They have conducted a detailed analysis of Composition, Growth, Percentage share of Indian agricultural export to total export (from 1991-2010), and find that though India’s total export has grown many fold in the Post WTO regime but the share of agri-Export to total export has declined in the Post WTO era as compared to Pre WTO regime.

B. Sheshagiri & G. G. Honkan (2011): This paper named “**Impact of W.T.O on Indian Agriculture : Performance and Prospects**” showed that the developed countries which have high tariff on agricultural import from countries India should bring down their tariff rate in order to improve agricultural commodity trade. Their study highly suggests that there is huge scope in increasing agricultural trade between developed and developing nations like

India even without resorting to paradigm shift to new improved technology or policy regarding that.

Nitin Vinod Dacha(2005): In his paper “**Prospects of the Uruguay Round Agreement on Agriculture and the Reality of its Impact on Indian Agricultural Trade**” he showed that Inconsistencies within the developed countries agenda concerning agricultural liberalization have stalled the progress of the process at least until the next trade round. It seems that developed countries only concede when it is convenient and have protected themselves exclusively at times through the use of such measures as the ‘special safeguard’ provision and the ‘peace clause’.

Baura and Chakaborty (2004) – In their paper of Impact of WTO regime on Indian Agriculture, Barua & Chakraborty studied & analysed various aspects and contents of **WTO like SPS, TBT, GI , TRIPS etc** and concluded that India’s export has revamped and increased in Post WTO period

Alex F. McCalla and John Nash (2007): In their edited book titled “**Reforming Agricultural Trade for Developing Countries**” they have expressed their view in the process of trade reform in liberalised trade regime of international agricultural trade under the WTO of Developing countries and expressed their concern about the implications of WTO regime on these countries.

S.K. Niranjan (2016) & D. Ranjith (2016) : In their work they both analysed the pattern of import and export since the beginning of WTO regime , where they found Indian imports of agricultural goods were cheaper as most of the exporting nations were giving huge subsidies to their domestic agricultural production & export. Both of them concluded that India’s post WTO trading experience of agricultural commodities was not much satisfactory as compare to the pre WTO phase.

S. P. Shukla(2000): In his paper titled “**From GATT to WTO and Beyond**” he intended to show that to analyse the evolution of the international trading system from its inception as the GATT in 1947 to its latest incarnation in the form of WTO, comprising the complex array of agreements forming its substance and mandate. His study focuses on the adequacy and in adequacy of the system as it evolved and functioned in an environment of changing international economic and political reality.

Kiran and Mishra (2009): They have expressed their view in favour of the new IPR regime under TRIPs and said that India has immense chances in coming future to gain from the IPR regime and it has to go long way to reach China & USA in the field of intellectual property regime.

Madhusudan Ghosh (2017): In his paper titled “**WTO, Trade Liberalization and Indian Agriculture**” Mr. Madhusudan Ghosh showed Impact of trade liberalisation in the early 90’s on Indian agricultural commodity export & Import and overall agricultural trade. He explained the changing pattern, diversification & composition of production growth, Export /

Import Growth and share of agricultural production & Export to total & agricultural GDP in the Pre & Post WTO period.

Priya Singh (2014): In her Thesis titled “**India and New Enlarged European Union Trade Relationship in the post reform Period**” she tried to explain the changes in the historical deep trade relationship between India & European Union as whole trade area and with Individual nations of EU. She also explained the impact of WTO and liberalisation policies on this trade relation and their future Implications.

Christopher L.Blackden (2014): In his dissertation paper named “**Transitional Policy articulations: India, Agriculture & the WTO**” Mr. **Christopher L.Blackden** of University of Kentucky have explained the impact of neo liberal policies of WTO and liberalisation, Globalisation on Indian agriculture and the political economics implications of these policies on Indian society and food security.

Sandip Prabhudas Solanki (2007): In his thesis titled “**Globalisation & its Impact on Indian Economy**” Mr. S.P. Solanki have explained what is globalisation means and he cited many definitions given by authors, economists, Scholars etc about Globalisation. Later on he explained how the new economic policies under WTO and reform period have affected India in many ways.

Training Programme on WTO and Its Implications on Indian Agriculture [Reading Material National Institute of Agricultural Extension Management (MANAGE)]: Several reading materials of this training program explained the different contents of WTO, how they work and the Implications of these policies on society both negatively and positively.

Dr.Nabeel A Mancheri,(2017): In the article titled “**Doha Round Dilemmas: What Stakes India holds in the WTO?**” he explained the reasons behind the successive failures of Doha round negotiation talks which he said the longest continuing negotiations of international trade.

Valeria Piñeiro and Martin Piñeiro (2017): In their Chapter of edited book titled “**The future of the global agri-food trade and the WTO**” they have shown the unequal world trading (export/import) system where the most of the fruits of liberalised Agricultural trade is going in favour of the Developed countries who are engaged in trade distorting behaviours.

Vijay Kumar (2014): In his thesis paper available on internet titled “**An Analytical Study of WTO on the Indian Agriculture Sector**” did a massive analytical job on major agricultural export commodities about the change in their growth of yield, diversification and export state wise during the Pre & post WTO period.

Tawheed Nabi & Dr. Jasdeep Kaur Dhami (2013): In their paper titled “**Analysis of India’s Agricultural Export performance in the Pre & Post WTO regime**” they have analyzed export performance of India in the Pre & Post WTO regime and they have also showed the changing pattern of export share of Indian agricultural commodities in the pre & Post WTO era.

Saghir Ahmad Ansari* and Waseem Khan (2015): In their paper titled “**India’s Agricultural Trade Potential in Post-WTO Period**” they have explained the scenario of Indian agricultural commodity trade in terms of direction, Composition and transitions of trade in the Post WTO period. They have Used Bella Balassa Index to explain India’s revealed comparative advantages in agricultural trade in the Post WTO regime.

Prof. Rajan Sudesh Ratna,Dr. Sachin Kumar Sharma,Dr. Murali Kallummal & Mr. Anirban Biswas (2010): In their paper titled “ **Agriculture under WTO Regime : Cross country analysis Of Selected Issues**” they have showed Impact of WTO & AOA regime on different countries including Japan, the US, India & Australia.

Vibha Mathur (2009): In her paper titled “**Sectoral Analysis of India’s Foreign Trade**” Vibha Mathur has argued in favour of WTO and suggested that India should restructure its economy according to the WTO in order to compete in world trade to increase its Shares and market. She reaffirmed that the Initial returns may not be according to the expectations or Impressive but the long futuristic implications will definitely be beneficial for India.

Dr. Shree Bhagwat & Angad Singh Maravi (2016): In their Paper titled “**A Study of Impact of the WTO Regime on Indian Agricultural Commodities**” they have tried to explain the WTO, AOA and the export performance of Major Indian Agricultural Commodities in the Post WTO regime.

Dr. Shamsher Singh (2014): In his paper titled “**Analysis of Trade Before and After the WTO: “A Case Study of India”**” Dr. Singh tried explaining using statistical tools the implications of WTO regime on overall economy of India. He explained both the Pre & Post WTO era in terms of change in trade performance in Agriculture & Industrial sectors.

Shabana Anjum and Arifa Khan (2017): In their paper titled “**Changing Pattern in India’s Agricultural Exports under WTO**” they have argued that in the Pre WTO era there was an effort by India to gain specialisation in agricultural trade but no such attempt was visible in the Post WTO era. They have also pointed out that though India’s share of global agri-Export have increased in the Post WTO period but it have not gained expertise in agri-commodity trade.

Alliance Sud (2017): The Paper on headings “The fourth industrial revolution will deepen the digital divide’ on Position on the Eleventh WTO Ministerial Conference Buenos Aires, 10 – 13 December 2017 in Alliance Sud focussed on various proposals of Developed Nations put forwarded in 11th MC of WTO in 2017 in Buenos Aires, Argentina and explained the justification behind the resistance of these new issues by developing countries.

Horticultural Statistics at Glance (2017): The Horticultural Statistics data book (online) provided by Ministry of Agriculture & farmers Welfare (GOI) helped us by providing latest data, the changing pattern and sector wise trade diversification of horticultural commodity trade.

Ahmed Shaban Ali Saif Altaer (2010): In his paper titled “**The WTO and Developing Countries: The Missing Link of International Distributive Justice**” Mr. Ahmed Shaban Ali Saif

Altaer has critically evaluated the impact of WTO, TRIPS, TRIMS and other WTO contents on developing and developed world. He tried to explain giving practical examples of negative impact of Trips regime on India, Bangladesh, and China etc.

State of Indian Agriculture (2015-16): The **State of Indian Agriculture** is a statistical E-book provided by the Govt. Of India, Ministry of Agriculture & Farmers Welfare, Department of Agriculture, Cooperation & Farmers Welfare, Directorate of Economics & Statistics, New Delhi that helped us by providing significant latest data on Indian agriculture, Farmers situation, soil Condition and Food security related issues.

Hemasree L. (2014): In her thesis paper titled “**Performance Analysis of Indian Agricultural Trade**” Hemasree L. has shown change in direction, trend & Changing Destinations, Growth, Composition and share of import & Export of major Indian agricultural commodities in the world during pre & Post WTO regimes.

Puja Rani (2015): In her paper titled “**A Study of WTO and Agriculture Sector in India**” she has displayed the employment, productivity and export share of Indian agricultural sector during the Pre & Post WTO era and the number of troubles faced by the sector during that time and some recommendations to solve them.

Ranja Sengupta (2017): In her paper titled “**The road to Buenos Aires, December 2017: Agriculture remains key**” she has explained how trade distorting measures by the Developed nation has been hampering international trade under WTO and the impact on Developing countries at the same time she has shown that the failure of the successive WTO summits since Bali round has been taking place and its inefficiencies in not reaching to any fruitful solutions on Doha round negotiations even in the 11th Ministerial conference of 2017.

1.12: Chapter Contents:

Our entire study is based on seven chapters, where

Chapter one Contains the Introduction and significance of the research, Structure of the WTO, research Hypothesis, our objective of the study, Research Methodology and review done by us on existing literature of our study.

The **chapter two** describes the significance of World trading system along with the impact of WTO on Developing country perspective.

Chapter Three describes the impact of WTO and AOA regimes on Indian agriculture where we have discussed India’s stand on AOA rules, the implication of Doha Mandate, Implications of WTO framed international trade policies under AOA on India, Trend of Indian agricultural trade, Year wise Values and Percentage share with GDP of Major Indian Commodity Exports & Imports during the Pre & Post WTO periods, Direction & Composition of Indian agricultural trade under the WTO regime, The average value & Percentage Share of major Indian Agricultural Commodity Export & Import to total national Agricultural Export & Import of India, Trend of Agricultural Trade performance of India from the inception of WTO, Indian

Agricultural commodity Export (A Comparison between PRE & Post WTO era), Five yearly Compound Annual Growth rate (CAGR) of Indian Agricultural Import & Export commodities, Percentage Share of Indian Agricultural exports in World Agricultural Exports and value of Indian Agricultural Exports, Share of Few Agricultural Commodities in Percentage in India's Total Exports in Pre-WTO Period, Share of Few Agricultural Commodities in Percentage in India's Total Exports in Post-WTO Period, Compound Annual Growth Rate of value of export of few Agricultural trading Commodities in Pre and Post WTO era, NPC (Nominal Protection Coefficient) results of Indian major agricultural commodity export share estimated to compare before and after the WTO, Agricultural export, import of India from 1990-91 to 2012-13 (During Pre & Post WTO Era), and lastly Several Major destinations for the export of Indian agricultural Commodities during 2014-15 & Conclusion.

The **chapter four** is the key chapter in our study which is dedicated to study and understand the year wise, growth, composition, direction, destination & export competitiveness of some of the major Indian Agricultural commodities during the Pre & Post WTO Regimes and make a comparative analysis in the changing pattern of trade between Pre & Post WTO eras.

The Chapter Five deals with the Impact of TRIPS, Biodiversity, GI act, CBD act, SPS, Technical barriers to trade (TBT) agreement and AOA in the Post WTO regime and the implications of these on Indian agriculture.

The **Chapter Six is about** the negotiations & Outcomes of 11th WTO summit at Buenos Aires and the Implications of it on agricultural sector of Developing Countries including India. In this chapter we have tried to explain the various new issues which have been highlighted in the 11th conference like E commerce & investment, Environmental issues to trade, women empowerment & MSME etc.

The Chapter seven is the last chapter of our study where we tried to highlight the summery of our study, conclusive understanding of the study and put forwarded recommendations & Suggestions for the betterment of India's agricultural trade.