

## GLOBAL AGRICULTURAL AGGREGATE SUPPORTS & MEASURES DURING WTO REGIME: AGRICULTURE DEVELOPMENT & PROMOTION OF FOREIGN TRADE

M.B. Dastagiri<sup>1</sup>, S. M Jainuddin<sup>2</sup> and Sweety Sharma<sup>3</sup>

<sup>1</sup>Principal Scientist, ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad-500030. India.

<sup>2</sup>Assistant Professor, University of Agricultural Science, Raichur, Karnataka. India. E-mail:

<sup>3</sup>Junior Research Fellow, ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad-500030. India.

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**ABSTRACT:** *Globally, agriculture has been protected from ancient time. WTO Members seek to continually improve market access through the regular WTO work programs and through negotiations. This study investigates the trends and growth rates of tariff and non-tariff measures, aggregate measures of agriculture adopted by WTO member countries in particular and continents in general. It also suggests policies for the development and protection of agriculture in the world. The continents wise viz., Africa, Asia, Europe, Least Developed Countries, Middle East, North America, South and Central America which covers the total 164 WTO member countries were selected for the study. The study found that during the period 2000 to 2016, Russia, India, China and New Zealand are given more domestic support to agricultural sector than compared to other WTO member countries. Among the developed and under developed countries, highest outlay was made by China excluding OECD members in both producer supports and general service supports. Technical Barriers to Trade (TBT), Sanitary and Phytosanitary (SPS) and Anti-dumping (ADP) were emerged as most prominent non-tariff measures to protect agriculture in the world. The highest non-tariff measures were imposed by Asia followed by Europe and North America. The USA imposes the highest number of Sanitary and Phytosanitary (SPS), Technical Barriers to Trade [TBT] and Countervailing (CV) measures. The India, Indonesia, Poland, Australia, Norway and Venezuela are imposed highest numbers of non-tariff measure like Anti-dumping [ADP], Safeguards (SG), Special Safeguards [SSG], Quantitative Restrictions, Tariff-rate quotas [TRQ] and Export Subsidies [XS] respectively. The bound duties and MFN applied duties for imports of major commodities in India were found to be more or less high than Japan, USA and European Union. It gives a price advantage to locally-produced major agriculture goods over similar goods which are imported. The India has imposed highest tariffs and import duties than Japan, USA and European Union in both agriculture and non-agriculture sector. Finally, the study concludes that each country tried to protect its domestic market by erecting high barriers in or another way in trade in agricultural products. The study is suggesting that WTO has to make necessary correction agreement and club all measures into one and deal.*

**KEYWORDS:** Global Agricultural, Aggregate Supports, Agriculture Development

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### INTRODUCTION

Agriculture has traditionally benefited from special arrangements which sheltered it from the full impact of GATT disciplines. Even today, in the WTO agricultural policies are covered by a separate agreement that, to a degree, still shelters it from generally applicable rules

(UNCTAD, 2003). Other WTO agreements also discipline trade in agricultural products. Those with the biggest impact on trade in agricultural products are: the GATT 1994; the Agreement on Safeguards; the Import Licensing Agreement; the Agreement on the Application of Sanitary and Phytosanitary Measures or the SPS Agreement; the Agreement on Technical Barriers to Trade or the TBT Agreement and, the Agreement on Trade Related Aspects of Intellectual Property Rights or the TRIPs Agreement (UNCTAD, 2003). These agreements, along with the Agreement on Subsidies and Countervailing Measures or the SCM Agreement and the Agreement on Implementation of Article VI of the GATT 1994 or the Antidumping Agreement are also briefly examined (UNCTAD, 2003).

### **Agreement on Agriculture (AoA)**

Disciplines in the field of agriculture have been quite flexible compared to the general disciplines in GATT 1947 in respect to market access, domestic and export subsidies. It allowed countries to use non-tariff measures such as import quotas and subsidies. In such a scenario trade in agricultural products between countries became highly distorted. Each country tried to protect its domestic market by erecting high barriers in trade in agricultural products, which sort of insulated the markets from external trade (Ronald, 2006). The AoA tried to eliminate the uncertainties in the world market that can be caused by arbitrary changes in the tariff policies by domestic governments (Bhagirathi Lal Das, 1999).

The AoA, with regard to domestic support or subsidies, requires member countries to reduce trade-distorting subsidies (Ronald, 2006). The domestic subsidies have been divided into three categories: Green, Blue and Amber. The Green and Blue Box subsidies are permitted under the provisions of WTO and the reduction commitments do not apply to them. Amber Box subsidies are those to which the reduction commitments apply (Ronald, 2006).

The WTO Uruguay Round achieved two things in relation to agriculture. It introduced specific disciplines on market access, domestic support and export subsidies (UNCTAD, 2003). Market access simply means the right which exporters have to access a foreign market. The WTO agreements allow WTO Members to protect their markets. The specific border measures to protect markets allowed under the Agreement on Agriculture are tariffs and Non-tariff quotas.

Market access for goods in the WTO means the conditions, tariff and non-tariff measures, agreed by members for the entry of specific goods into their markets (WTO, 1995). WTO Members seek to continually improve market access through the regular WTO work programme and through negotiations such as those launched at the Doha Ministerial Conference in November 2001 (WTO, 1995). The US, EU and Japan are by far the largest providers of Green Box subsidies (WTO, 2006; Diakosavvas, 2003). The India's commitment for Agreement on Agriculture (AoA) were as follows in Market Access; as India was maintaining Quantitative Restrictions due to balance of payments reasons. it did not have to undertake any commitments in regard to market access (Anonymous, 2006). In Domestic Support in India; India does not provide any product specific support other than market price support (Anonymous, 2006). In Export Subsidies in India, exporters of agricultural commodities do not get any direct subsidy. (Anonymous, 2006).

The numerical targets for agriculture for developed and developing country were mentioned in Table 1. The agreement requires WTO members to cut both the amount of money spend on export subsidies and the quantities of export that receive subsidies (Table 1). Taking the

average of 1986-1990 as the base level, developed countries have agreed to cut the value of the export subsidies by 36 percent over six years, starting in 1995 and the developing countries have agreed to cut the value of the export subsidies by 24 percent. Developed countries have also agreed to reduce quantities of subsidized exports by 21 percent over six years and the developing countries by 14 percent over 10 years.

**Table 1: Numerical targets for agriculture During Uruguay Round**

<b>Target Variables</b>	<b>Developed Countries 6 years: 1995 to 2000</b>	<b>Developing Countries 10 years:1995 to 2004</b>
<b>Tariffs</b>		
Average cut for all agricultural products	-36 %	-24 %
Minimum cut per products	-15 %	-10 %
<b>Domestic Support</b>		
Total AMS cut for sector (base period :1986-88)	-20 %	-13 %
<b>Exports</b>		
Value of Subsidies	-36 %	-24 %
Subsidized quantities (base period 1986-90)	-21 %	-14 %

Source: Agriculture: fairer markets for farmers, WTO Website, Accessed on 5<sup>th</sup> September, 2017

Note: Least developed countries do not have to make commitments to reduce tariffs or subsidies. The base level for tariff cuts was the bound rate before 1 January 1995; or, for unbound tariffs, the actual rate charged in September 1986 when the Uruguay Round began. The other figures were targets used to calculate countries' legally-binding "schedules" of commitments.

Agricultural support is defined as the annual monetary value of gross transfers to agriculture from consumers and taxpayers arising from government policies that support agriculture, regardless of their objectives and economic impacts (OECD, 2017). This indicator includes the total support estimate (TSE), measured as a percentage of GDP, the producer support estimate (PSE), measured as a percentage of gross farm receipts, the consumer support estimate (CSE), measured as a percentage of agricultural consumption, and the general services support estimate (GSSE), measured as a percentage of total support (OECD, 2017). Agricultural support is also expressed in monetary terms, in million USD and million EUR. TSE transfers represent the total support granted to the agricultural sector, and consist of producer support, consumer support and general services support. PSE transfers to agricultural producers are measured at the farm gate level and comprise market price support, budgetary payments and the cost of revenue foregone (OECD, 2017). CSE transfers from consumers of agricultural commodities are measured at the farm gate level (OECD, 2017). If negative, the CSE measures the burden (implicit tax) on consumers through market price support (higher prices), that more than offsets consumer subsidies that lower prices to consumers. GSSE transfers are linked to measures creating enabling conditions for the primary agricultural sector through development of private or public services, institutions and infrastructure (OECD, 2017). GSSE include policies where primary agriculture is the main

beneficiary, but does not include any payments to individual producers. GSSE transfers do not directly alter producer receipts or costs or consumption expenditure (OECD, 2017).

Some review of literature regarding positive and negative benefits of non-tariff measures and domestic supports. Muniswamy Gopinath (2008) studied WTO domestic support of Major Countries Viz., India, European Union, USA and Japan. The results of the study show that during the period 2005-06, India has made highest domestic support payment to Public Stockholding for Food Security followed by relief from natural disasters and general services. USA has made highest payments under Domestic Food Aid followed by general service and decoupled income support during 2001. European Union has more concentrated on structural adjustment through investment aid and environment payments followed by general services during 2003-04. Japan has made highest domestic payments to general services followed by environmental payments during 2002-03. The ambiguous trade effect of NTMs evidently differs across sectors, and varies among countries, depending on the economic development level (Eyal Ronen, 2017). Winchester *et al.* (2012) validate the significant trade-restrictive effect of stringent MRLs for plant products in importing countries compared to exporting countries. Chen *et al.* (2006) determine that in developing countries, the testing procedures and lengthy inspection times significantly reduce firms' propensity to export to developed countries, predominantly in agricultural firms. Fontagné *et al.* (2013) show that SPS compliance costs create market entry prohibition and increase the probability to exit the restricted market by 2%. Many researchers recognized the trade-enhancing effects of NTMs due to their beneficial impact on public health, well-being, animal welfare, food safety and sustainable environment (Eyal Ronen, 2017). Josling *et al.* (2004) find that in nations where consumer awareness to such features is valued, demand is stimulated for products under such policies. Thilmany and Barrett (1997) reported that the NTMs may positively affect trade flows is the correction of market imperfections. Chevassus-Lozza *et al.* (2008) report positive trade effects of sanitary measures, despite some negative or insignificant impacts of phytosanitary and quality measures. The agreements on Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) of the World Trade Organization (WTO) were designed to provide the member countries with the freedom to choose a particular measure that allows them to achieve legitimate policy objectives, such as the protection of human health and the environment (WTO, 2012). Thus, non-tariff measures (NTM) for may help in promotion, protection and enhance the trade between countries.

There are wider research gaps on WTO-AOA to move beyond existing metrics in WTO agricultural trade governance. This on account of major changes in farm support policies and in the overall policy framework. The way ahead requires a pragmatic and ground-breaking approach Irene Musselli (2016). This study investigates the tariff and non-tariff measures, aggregate measures of agriculture adopted by WTO member countries. The study compares protection measures undertaken by WTO member countries in particular and continents in general. Finally, the study will help to understand the aggregate measures of agriculture and non-tariff measures undertaken by different countries and it will help to suggest some critical policies for protection and promotion of international trade.

The specific objectives of the study are as follows

1. To estimate the trends and growth rates in Global Agricultural Supports of major countries
2. To study the Global Aggregate Measures of Agriculture adopted by major Countries.

3. To analyze the Tariff and Non-Tariff Measures (NTM) imposed by major countries
4. To suggest suitable Global trade policies for protection and promotion of international trade

## METHODOLOGY

This is basically world trade agreements and domestic support research study. The study based on data collected from secondary and published sources. The continents wise viz., Africa, Asia, Europe, Least Developed Countries, Middle East, North America, South and Central America which covers the total 164 WTO member countries were selected for the study. The secondary data on non-tariff measure viz., Sanitary and Phytosanitary [SPS], Technical Barriers to Trade [TBT], Anti-dumping [ADP], Countervailing [CV], Safeguards [SG], Special Safeguards [SSG], Quantitative Restrictions [QR], Tariff-rate quotas [TRQ], Export Subsidies [XS] and Aggregate Measures of Agriculture [AMA] like Producer Support Estimates, Consumers Support Estimates [CSE] and General Service Support Estimates [GSSE] were collected from the year 2011 to 2016 and analyses growth rates, trends and meta-analysis. The data on Tariffs and Aggregate Measure of Agriculture (AMA) of four major countries viz., India, European Union, USA and Japan were collected from WTO websites and published sources. The total 164 WTO member countries were selected and for each non-tariff measures, the countries will be classified in to the top 10 countries which accounted major share of non-tariffs and rest as other countries. Data on these variables were collected from various sources viz., WTO Reports, UNCTAD, OECD Reports, APEDA, DGCIS, NHB, FAO STAT, CMIE, NABARD, EXIM Bank, Foreign Trade Year Book, Planning commission reports. The secondary data on agriculture support of WTO major countries viz., European Union (28 countries), OECD and other WTO member countries were collected from 2000-01 to 2015-16 and estimated the growth rates by using Compound Annual Growth Rates formula.

### Growth rate formulae: (Damodar N. Gujarati and Sangeetha, 2007)

The compound growth rate (r) will be calculated by fitting Exponential function to the variables of interest viz., agricultural support measures for the period 2000-01 to 2015-16.

$$Y_t = Y_0 (1+r)^t \text{ -----1}$$

Assuming multiplicative error term in the equation1, model may be linearized by logarithmic transformation

$$\ln Y_t = A + Bt + \epsilon \text{ -----2}$$

Where, A (=lnA<sub>0</sub>) and B (=ln (1+r)) are the parameters to be estimated by ordinary least square regression, t= time trend in year, r = exp (B) -1

**RESULT AND DISCUSSION****Global Agricultural Domestic Support**

Agricultural support is defined as the annual monetary value of gross transfers to agriculture from consumers and taxpayers arising from government policies that support agriculture, regardless of their objectives and economic impacts (OECD, 2017).

The compound annual growth rates of global agricultural supports (2000-2016) were presents in Table 2. During 2000-2016, the highest and positive growth rates in agricultural support were observed in Russia (22.68 %) followed by India (20.19 %), China (19.93 %), New Zealand (12.34 %), Philippines (6.41 %), Costa Rica (6.36 %) and Brazil (6.01). During the same period, the negative growth rates in agricultural support were observed in Mexico (-3.44 %), Chile (-2.59 %), USA (-2.47 %), Japan (-1.52 %) and OECD (-0.37 %) members.

The study found that during the period 2000 to 2016, Russia, India, China and New Zealand are given more domestic support to agricultural sector than compared to other WTO member countries.

**Table 2: CAGR of Agricultural Domestic Support of Major Countries (2000-01 to 2015-16)**

Country	2001-01 (Million US \$)	2015-16 (Million US \$)	Growth Rates (%)
Australia	780.04101778	890.21761192	0.78
Canada	4335.3820311	4777.1896215	0.57
Ice land	153.46424787	222.30802092	2.20
Japan	54087.760289	41666.362575	-1.52
Korea	19259.316117	20039.270887	0.23
Mexico	7604.6223222	4194.500000	-3.44
New Zealand	19.710724668	142.44130871	12.34
Norway	2153.0054632	3128.3623498	2.22
Switzerland	5481.17354	7288.1231953	1.69
Turkey	9035.9132087	17182.470971	3.85
United States of America	50880.500624	33277.271943	-2.47
Chile	562.3029226	359.9737062	-2.59
Israel	786.231704	1361.0379525	3.28
OECD Member Countries	242964.28604	228052.49612	-0.37
Brazil	2727.5682198	7362.2856907	6.01
China	9653.5109856	212182.44246	19.93
Colombia	2342.3570188	3297.0799012	2.03
India	1711.1651614	35969.07528	20.97
Russia	369.39297734	11927.501871	22.68
European Union (28 Countries)	87824.861824	99735.092058	0.75
Costa Rica	187.62505661	535.52379232	6.36
Philippines	2178.844683	6263.9232717	6.41

Source: OECD Data, Accessed on 29 September, 2017

### **Global General Services Support Estimate and Producer Support Estimates**

General Services Support Estimate of WTO member countries were presented in Table 3. During the year 2016, the total global estimates of the general service support were about 1, 21,692.48 US Dollars. Out of the world total for general service estimates, highest payments were made by OECD member countries (32.74 %) followed by China (28.56 %) European Union (8.97 %), USA (7.86 %) and Japan (7.17 %). The more or less similar trends were observed in rest of the preceding years. The figure 3 indicates that china were made more domestic support payments under general service estimates than compared to developed countries like USA, Japan, EU, Canada, Australia and underdeveloped countries excluding OECD member countries. During 2012-16, major countries have showed more are less similar trend (figure 1&2) in general service support estimates.

Producer Support Estimate of WTO member countries were presented in Table 4. During the year 2016, the total global producer support estimates were 700185.22 US Dollars. Out of the world total producer support estimates, highest outlay was made by OECD member countries (32.57 %) followed by China (30.30 %), European Union (14.24 %), Japan (5.95 %) and USA (4.75 %). The lowest producer support estimates outlay was observed in Ukraine, Vietnam and Kazakhstan. The China has made more outlay for producer support (figure 3) than compared to other developed and developing countries except OECD members.

The study found that highest outlays were made by OECD member countries followed by China and EU under both general service support and producer support. Among the developed and under developed countries, highest in both producer supports and general service supports were by China excluding OECD members.

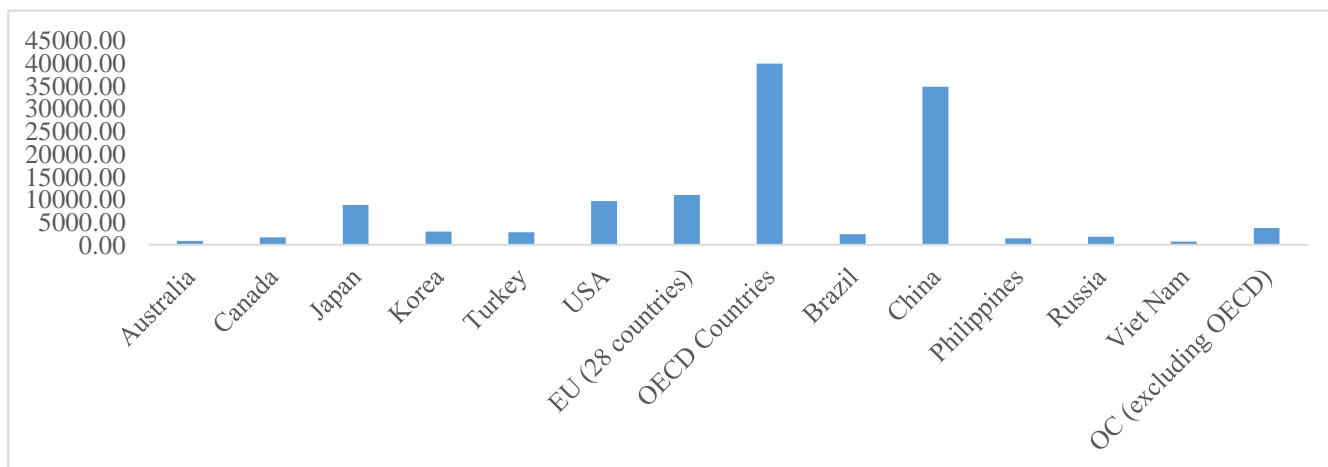
**Table 3: Global General Services Support Estimate (2011-2016)**

Country	2011		2012		2013		2014		2015		2016	
	GSSE (US\$)	Percentage to Total	GSSE (US\$)	Percentage to Total	GSSE (US\$)	Percentage to Total	GSSE (US\$)	Percentage to Total	GSSE (US\$)	Percentage to Total	GSSE (US\$)	Percentage to Total
Australia	1084.30	0.84	1161.26	0.89	1113.56	0.78	1215.40	0.88	865.73	0.63	863.09	0.71
Canada	2475.41	1.91	2338.20	1.79	2302.26	1.60	2096.69	1.52	1824.74	1.34	1616.24	1.33
Japan	12593.77	9.70	11558.42	8.87	9878.22	6.88	8548.10	6.18	7878.17	5.77	8722.27	7.17
Korea	2493.00	1.92	2869.31	2.20	3083.11	2.15	2860.07	2.07	2870.91	2.10	2859.27	2.35
Norway	190.35	0.15	212.82	0.16	225.02	0.16	218.09	0.16	164.43	0.12	162.10	0.13
Switzerland	789.35	0.61	764.66	0.59	777.26	0.54	785.87	0.57	760.08	0.56	734.57	0.60
Turkey	3384.25	2.61	2242.35	1.72	3311.80	2.31	3038.13	2.20	2902.61	2.13	2719.07	2.23
USA	5751.00	4.43	6093.50	4.68	10323.50	7.19	7823.00	5.66	8747.00	6.41	9568.00	7.86
EU (28 countries)	16171.24	12.46	15780.57	12.11	15274.87	10.64	15663.89	11.32	12178.39	8.92	10915.79	8.97
OECD Countries	46724.48	35.99	44939.25	34.48	48197.35	33.58	44288.67	32.02	40064.48	29.35	39843.89	32.74
Brazil	4151.45	3.20	3764.03	2.89	3930.67	2.74	3708.05	2.68	1945.95	1.43	2307.56	1.90
China	23538.18	18.13	28583.04	21.93	32989.33	22.99	37802.55	27.33	47038.80	34.45	34751.28	28.56
Indonesia	1677.58	1.29	1727.40	1.33	1761.59	1.23	1700.93	1.23	2047.82	1.50	0.00	0.00
Philippines	634.28	0.49	1116.83	0.86	1380.87	0.96	1489.48	1.08	1432.09	1.05	1385.97	1.14
Russia	3511.08	2.70	2042.32	1.57	3657.34	2.55	2026.56	1.47	1558.82	1.14	1730.44	1.42
South Africa	361.55	0.28	367.02	0.28	366.59	0.26	368.94	0.27	336.52	0.25	278.03	0.23
OC (Excluding OECD)	4296.78	3.31	4774.15	3.66	4946.66	3.45	4690.04	3.39	3909.09	2.86	3234.91	2.66
Total	129828.05	100.00	130335.13	100.00	143520.01	100.00	138324.48	100.00	136525.62	100.00	121692.48	100.00

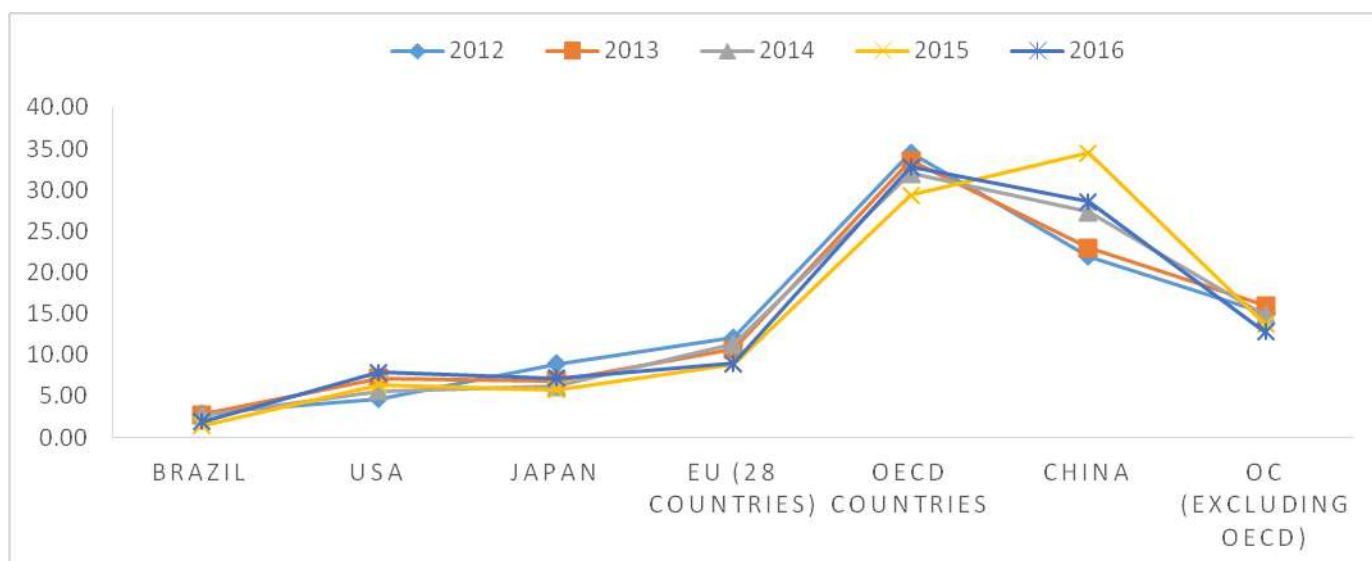
Source: OECD Data base, Accessed on 4th September, 2017. GSSE: General Services Support Estimate

Source: OECD Data base, Accessed on 4th September, 2017. GSSE: General Services Support Estimate





**Figure 1: Major Country wise General Services Support Estimate 2016 (US \$)**



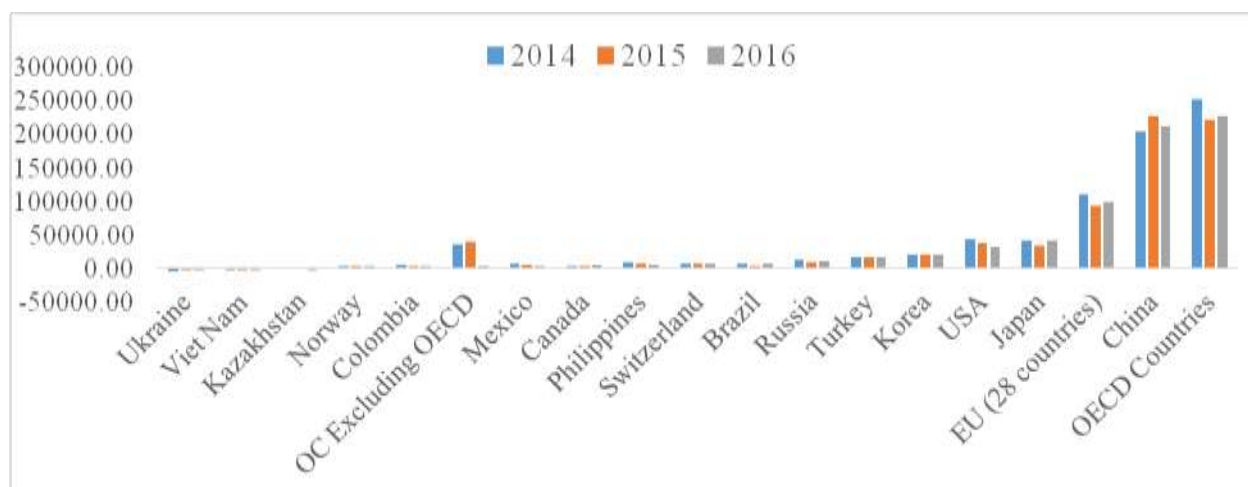
**Figure 2: Country wise Trends of General Services Support Estimate 2012-2016 (%)**

**Table 4: Producer Support Estimates of Major Countries (2014-16)**

Country	2014		2015		2016	
	PSE (US \$)	Percentage to Total	PSE (US \$)	Percentage to Total	PSE (US \$)	Percentage to Total
Ukraine	-3100.91	-0.39	-2018.00	-0.27	-2536.07	-0.36
Viet Nam	-433.41	-0.06	-1339.52	-0.18	-1202.03	-0.17
Kazakhstan	1496.47	0.19	1546.38	0.21	-363.19	-0.05
Norway	3969.74	0.51	3268.90	0.44	3128.36	0.45

Colombia	5323.49	0.68	3716.31	0.50	3297.08	0.47
OC Excluding OECD	35569.81	4.53	40224.87	5.44	3912.14	0.56
Mexico	6685.60	0.85	6202.78	0.84	4194.50	0.60
Canada	4560.70	0.58	3935.25	0.53	4777.19	0.68
Philippines	8667.65	1.10	7846.87	1.06	6263.92	0.89
Switzerland	7200.72	0.92	7327.75	0.99	7288.12	1.04
Brazil	7541.51	0.96	3757.79	0.51	7362.29	1.05
Russia	12732.92	1.62	9125.04	1.23	11927.50	1.70
Turkey	16982.51	2.16	17312.50	2.34	17182.47	2.45
Korea	21176.80	2.69	20846.99	2.82	20039.27	2.86
USA	43784.42	5.57	38176.71	5.16	33277.27	4.75
Japan	42587.44	5.42	35198.34	4.76	41666.36	5.95
EU (28 countries)	111873.11	14.23	93848.30	12.69	99735.09	14.24
China	205792.37	26.18	227837.41	30.80	212182.44	30.30
OECD Countries	253603.21	32.26	222830.63	30.13	228052.50	32.57
Total	786014.15	100.00	739645.31	100.00	700185.22	100.00

Source: OECD Data base, Accessed on 4<sup>th</sup> September, 2017



**Figure 3: Producer Support Estimates of Major Countries (2014-16)**

### Continental and Country-wise Non-Tariff Measures

Continent wise non-tariff measures were presented in Table 5. It is evident from the Table 5 that the Technical Barriers to Trade (21925) is most prominent non tariff measure imposed in the world followed by Sanitary and Phytosanitary (15670), Anti-dumping (2084), Tariff-rate quotas (1274) and Quantitative Restrictions (1108). Out of the world total Technical Barriers to Trade [TBT] measures, highest number of TBT were imposed by Asia (22.88 %) followed by Europe (18.62 %) and Middle East (17.99 %). Out of the total Sanitary & Phytosanitary

and Anti Dumping measure, highest number of SPS and ADP were imposed by Asia (30.71 % and 37.86 % respectively) followed by North America (27.50 % and 23.03 % respectively), South & Central America (24.64 % and 17.85 % respectively) and Europe (8.49 % and 15.64 % respectively).

Non-tariff measures imposed by top 10 WTO member country were presented in Table 6. It is evident from the Table 6 that the USA imposes the highest sanitary and phytosanitary (SPS) measures (18.59 %) followed by Brazil (7.70 %) and China (7.61 %) in the world. In Technical Barriers to Trade [TBT], the USA imposes the highest numbers of TBT (6.64 %) followed by China (5.38 %) and EU (4.78 %). In Anti-dumping [ADP], the India imposes the more numbers of Anti-dumping [ADP] measure (16.03 %) followed by USA (15.98 %) and Brazil (9.55 %). The USA, Indonesia, Poland, Australia, Norway and Venezuela are imposed highest numbers of non-tariff measure like Countervailing (CV), Safeguards (SG), Special Safeguards [SSG], Quantitative Restrictions, Tariff-rate quotas [TRQ], and Export Subsidies [XS] respectively.

The study found that the Technical Barriers to Trade (TBT), Sanitary and Phytosanitary (SPS) and Anti-dumping (ADP) were emerged as most prominent non tariff measures in world. The study also showed that highest non tariff measures were imposed by Asia followed by Europe and North America. The study found that the USA imposes the highest number of Sanitary and Phytosanitary (SPS), Technical Barriers to Trade [TBT], Countervailing (CV) measures. The India, Indonesia, Poland, Australia, Norway and Venezuela are imposed highest numbers of non-tariff measure like Anti-dumping [ADP], Safeguards (SG), Special Safeguards [SSG], Quantitative Restrictions, Tariff-rate quotas [TRQ], and Export Subsidies [XS] respectively.

**Table 5: Continental-wise Non-Tariff Measures Imposed by WTO member countries**

<b>Non-Tariff Variable</b>	<b>Africa</b>	<b>Asia</b>	<b>Europe</b>	<b>Least Developed Countries</b>	<b>Middle East</b>	<b>North America</b>	<b>South and Central America</b>	<b>Grand Total</b>
Sanitary and Phytosanitary [SPS]	348 (2.22)	4813 (30.71)	1330 (8.49)	141 (0.90)	700 (4.47)	4310 (27.50)	3861 (24.64)	15670 (100.00)
Technical Barriers to Trade [TBT]	1920 (8.76)	5017 (22.88)	4082 (18.62)	896 (4.09)	3945 (17.99)	2616 (11.93)	3909 (17.83)	21925 (100.00)
Anti-dumping [ADP]	75 (3.60)	789 (37.86)	326 (15.64)	00 (0.00)	4 (0.19)	480 (23.03)	372 (17.85)	2084 (100.00)
Countervailing [CV]	8 (3.45)	28 (12.07)	25 (10.78)	00 (0.00)	00 (0.00)	160 (68.97)	9 (3.88)	232 (100.00)
Safeguards [SG]	12 (19.67)	23 (37.70)	3 (4.92)	1 (1.64)	9 (14.75)	00 (0.00)	6 (9.84)	61 (100.00)
Special Safeguards [SSG]	00 (0.00)	123 (19.43)	269 (42.50)	00 (0.00)	00 (0.00)	173 (27.33)	68 (10.74)	633 (100.00)
Quantitative Restrictions [QR]	35 (3.16)	806 (72.74)	63 (5.69)	32 (2.89)	00 (0.00)	57 (5.14)	69 (6.23)	1108 (100.00)
Tariff-rate quotas [TRQ]	82 (6.44)	179 (14.05)	681 (53.45)	00 (0.00)	12 (0.94)	84 (6.59)	228 (17.90)	1274 (100.00)
Export Subsidies [XS]	62 (14.45)	8 (1.86)	214 (49.88)	00 (0.00)	6 (1.40)	29 (6.76)	110 (25.64)	429 (100.00)

Note: Figures in parenthesis indicates percentage share to grand total

Source: World Trade Organization, 2017, Accessed on 25<sup>th</sup> July, 2017. <https://www.wto.org/>.

**Table 6: Major Country-wise Non-Tariff Measures Imposed by WTO member countries**

Non-Tariff Variable	Top 10 Countries Imposed Non-Tariff Measures										Other countries	Grand Total
	USA	Brazil	China	Canada	Peru	EU	Korea RP	NZ	Chile	Japan		
Sanitary and Phytosanitary [SPS]	2913 (18.59)	1207 (7.70)	1192 (7.61)	1091 (6.96)	677 (4.32)	591 (3.77)	554 (3.54)	554 (3.54)	538 (3.43)	498 (3.18)	6010 (38.35)	15670 (100.00)
	1455 (6.64)	1179 (5.38)	1047 (4.78)	996 (4.54)	961 (4.38)	817 (3.73)	798 (3.64)	775 (3.53)	640 (2.92)	615 (2.81)		
Technical Barriers to Trade [TBT]	1455 (6.64)	1179 (5.38)	1047 (4.78)	996 (4.54)	961 (4.38)	817 (3.73)	798 (3.64)	775 (3.53)	640 (2.92)	615 (2.81)	13565 (61.87)	21925 (100.00)
	334 (16.03)	333 (15.98)	199 (9.55)	186 (8.93)	140 (6.72)	116 (5.57)	100 (4.80)	87 (4.17)	75 (3.60)	72 (3.45)		
Anti-dumping [ADP]	334 (16.03)	333 (15.98)	199 (9.55)	186 (8.93)	140 (6.72)	116 (5.57)	100 (4.80)	87 (4.17)	75 (3.60)	72 (3.45)	442 (21.21)	2084 (100.00)
	125 (53.88)	32 (13.79)	23 (9.91)	17 (7.33)	8 (3.45)	6 (2.59)	5 (2.16)	3 (1.29)	3 (1.29)	3 (1.29)		
Countervailing [CV]	125 (53.88)	32 (13.79)	23 (9.91)	17 (7.33)	8 (3.45)	6 (2.59)	5 (2.16)	3 (1.29)	3 (1.29)	3 (1.29)	7 (3.02)	232 (100.00)
	6 (9.84)	5 (8.20)	4 (6.56)	4 (6.56)	4 (6.56)	3 (4.92)	3 (4.92)	3 (4.92)	3 (4.92)	3 (4.92)		
Safeguards [SG]	6 (9.84)	5 (8.20)	4 (6.56)	4 (6.56)	4 (6.56)	3 (4.92)	3 (4.92)	3 (4.92)	3 (4.92)	3 (4.92)	24 (39.34)	61 (100.00)
	223 (35.23)	173 (27.33)	60 (9.48)	57 (9.00)	39 (6.16)	27 (4.27)	20 (3.16)	7 (1.11)	7 (1.11)	7 (1.11)		
Special Safeguards [SSG]	223 (35.23)	173 (27.33)	60 (9.48)	57 (9.00)	39 (6.16)	27 (4.27)	20 (3.16)	7 (1.11)	7 (1.11)	7 (1.11)	13 (2.05)	633 (100.00)
	122 (11.01)	112 (10.11)	103 (9.30)	92 (8.30)	91 (8.21)	83 (7.49)	60 (5.42)	59 (5.32)	42 (3.79)	42 (3.79)		
Quantitative Restrictions [QR]	122 (11.01)	112 (10.11)	103 (9.30)	92 (8.30)	91 (8.21)	83 (7.49)	60 (5.42)	59 (5.32)	42 (3.79)	42 (3.79)	334 (30.14)	1108 (100.00)
	214 (16.79)	87 (6.82)	86 (6.75)	72 (5.65)	70 (5.49)	67 (5.25)	62 (4.86)	58 (4.55)	53 (4.16)	52 (4.08)		
Tariff-rate quotas [TRQ]	214 (16.79)	87 (6.82)	86 (6.75)	72 (5.65)	70 (5.49)	67 (5.25)	62 (4.86)	58 (4.55)	53 (4.16)	52 (4.08)	453 (35.55)	1274 (100.00)
	72 (16.78)	62 (14.45)	44 (10.25)	44 (10.25)	20 (4.66)	18 (4.19)	17 (3.96)	17 (3.96)	16 (3.72)	16 (3.72)		
Export Subsidies [XS]	72 (16.78)	62 (14.45)	44 (10.25)	44 (10.25)	20 (4.66)	18 (4.19)	17 (3.96)	17 (3.96)	16 (3.72)	16 (3.72)	103 (24.00)	429 (100.00)

Note: EU-European Union, NZ-New Zealand, KSA-Kingdom Saudi Arab, RP-Republic, Note: Figures in parenthesis indicates percentage share to grand total

Source: World Trade Organization, 2017 <https://www.wto.org/>

### **Major Country-wise Tariffs Measures**

Customs duties on merchandise imports are called tariffs. Tariffs give a price advantage to locally-produced goods over similar goods which are imported, and they raise revenues for governments.

The tariffs and imports duties of major economies viz., India, Japan, USA and European Union were presented in the Table 7, 8, 9 and 10 respectively. The average bound duties imposed on animal products were around 106.10, 13.90, 2.30 and 16.20 for India, Japan, USA and European Union respectively. Among the group of products, average bound duties were found to be highest imposed on oilseeds, fats, oils, coffee, tea, sugar and confectionery, where as MFN applied duties were found to be highest in Beverages & tobacco (68.60) followed by coffee, tea and sugars and confectionery in India. The bound duties and MFN applied duties were found to be highest in dairy products (95.10) followed cereals and preparation (57.10) and Sugars and confectionery (29.30) in Japan. The bound duties were found to be highest in dairy products (16.00 and 37.40) followed by Sugars and confectionery (13.20 and 24.60) and Beverages & tobacco (15.00 and 19.00) in USA and European Union respectively. The MFN applied duties found to be highest in dairy products followed by Sugars and confectionery and Beverages & tobacco in USA and European Union respectively.

Table 11 indicates the tariffs and imports duties imposed by major countries on agriculture and non agriculture. The result indicates that India, Japan, USA and European Union have imposed higher imports duties on agriculture than non agriculture. The India has imposed highest tariffs and import duties than Japan, USA and European Union in both agriculture and non agriculture sector.

The study found that the bound duties and MFN applied duties for imports of major commodities in India were found to be more or less high than Japan, USA and European Union. It gives a price advantage to locally-produced major agriculture goods over similar goods which are imported. The India has imposed highest tariffs and import duties than Japan, USA and European Union in both agriculture and non agriculture sector.

**Table 7: Tariffs and imports duties of India**

Product group	Final bound duties				MFN applied duties			Imports	
	AVG	Duty free in %	Max	Binding in %	AVG	Duty free in %	Max	Share in %	Duty free in %
Animal products	106.10	0	150	100	31.10	0.00	100	0.00	0.00
Dairy products	65.00	0	150	100	33.50	0.00	60	0.00	0.00
Fruit, vegetables, plants	100.00	0	150	100	29.40	0.50	100	2.00	18.50
Coffee, tea	133.10	0	150	100	56.40	0.00	100	0.10	0.00
Cereals & preparations	115.30	0	150	100	31.30	15.40	150	0.10	33.30
Oilseeds, fats & oils	169.70	0	300	100	35.10	0.90	100	3.00	0.20
Sugars and confectionery	124.70	0	150	100	35.90	0.00	60	0.20	0.00
Beverages & tobacco	120.50	0	150	100	68.60	0.00	150	0.20	0.00
Cotton	110.00	0	150	100	6.00	80.00	30	0.10	99.90
Other agricultural products	104.80	0	150	100	22.30	13.60	70	0.50	0.20
Fish & fish products	100.70	0	150	11.10	29.90	0.10	30	0.00	0.00

Source: Tariffs profile, WTO (2017), Accessed on 16<sup>th</sup> September, 2017.

**Table 8: Tariffs and imports duties of Japan**

Product group	Final bound duties				MFN applied duties			Imports	
	AVG	Duty free in %	Max	Binding in %	AVG	Duty free in %	Max	Share in %	Duty free in %
Animal products	13.9	45.70	324	100	10.80	46.60	324	1.8	3.10
Dairy products	95.1	0.00	558	100	65.70	9.10	558	0.2	21.70
Fruit, vegetables, plants	8.90	19.60	277	100	9.40	19.40	277	1.40	14.80
Coffee, tea	13.70	22.20	133	100	14.30	22.70	133	0.50	62.10
Cereals & preparations	57.10	8.20	613	100	32.30	21.60	613	1.40	64.60
Oilseeds, fats & oils	7.50	46.20	380	100	5.90	46.0	380	0.90	77.40
Sugars and confectionery	29.30	7.30	135	100	20.60	9.50	50	0.10	47.60
Beverages & tobacco	16.20	19.10	38	100	14.60	30.90	38	1.20	62.00
Cotton	0.00	100.00	0.00	100	0.00	100	0.00	0.00	100.00
Other agricultural products	3.60	66.50	200	100	3.10	68.10	250	0.80	67.60
Fish & fish products	4.90	4.90	12	91.30	5.70	3.20	15	2.10	4.10

Source: Tariffs profile, WTO (2017), Accessed on 16<sup>th</sup> September, 2017.

**Table 9: Tariffs and imports duties of USA**

Product group	Final bound duties				MFN applied duties			Imports	
	AVG	Duty free in %	Max	Binding in %	AVG	Duty free in %	Max	Share in %	Duty free in %
Animal products	2.30	30.80	26	100	2.20	30.80	26	0.60	21.40
Dairy products	16.00	0.30	63	100	16.60	0.30	63	0.10	13.50
Fruit, vegetables, plants	4.90	20.20	132	100	4.70	21.10	132	1.50	25.80
Coffee, tea	3.30	53.50	48	100	3.30	53.50	48	0.60	76.40
Cereals & preparations	3.60	21.00	38	100	3.10	20.10	38	0.70	32.80
Oilseeds, fats & oils	4.40	23.90	164	100	7.20	25.90	164	0.40	34.70
Sugars and confectionery	13.20	2.90	64	100	16.40	2.70	64	0.20	6.00
Beverages & tobacco	15.00	27.70	350	100	19.10	26.20	350	1.10	50.60
Cotton	4.60	38.30	16	100	4.60	38.30	16	0.00	79.90
Other agricultural products	1.10	58.90	52	100	1.00	61.00	52	0.40	67.80
Fish & fish products	1.00	82.10	35	100	0.80	84.60	35	0.90	92.00

Source: Tariffs profile, WTO (2017), Accessed on 16<sup>th</sup> September, 2017.

**Table 10: Tariffs and imports duties of European Union**

Product group	Final bound duties				MFN applied duties			Imports	
	AVG	Duty free in %	Max	Binding in %	AVG	Duty free in %	Max	Share in %	Duty free in %
Animal products	16.20	24.30	104	100	15.70	28.40	104	0.40	17.90
Dairy products	37.40	0.00	105	100	35.40	0.00	96	0.00	0.00
Fruit, vegetables, plants	11.30	21.70	157	100	10.50	19.40	157	2.00	14.70
Coffee, tea	6.10	27.10	23	100	6.10	27.10	23	1.10	73.30
Cereals & preparations	15.90	6.50	63	100	12.80	13.00	63	0.60	35.60
Oilseeds, fats & oils	5.80	47.00	170	100	5.60	48.10	170	1.70	73.40
Sugars and confectionery	24.60	0.00	127	100	23.60	11.80	127	0.10	23.30
Beverages & tobacco	19.00	19.60	152	100	19.60	19.20	152	0.70	21.60
Cotton	0.00	100.00	0.00	100	0.00	100.00	00	0.00	100.00
Other agricultural products	4.80	64.70	366	100	3.60	65.50	117	0.50	69.40
Fish & fish products	11.40	11.70	26	100	12.00	8.20	26	1.40	25.30

Source: Tariffs profile, WTO (2017), Accessed on 16<sup>th</sup> September, 2017.



**Table 11: Agriculture and Non-Agriculture Tariffs & imports duties of major countries**

Particulars	India			Japan			EU (28 Countries)			USA		
	Total	Ag	Non-Ag	Total	Ag	Non-Ag	Total	Ag	Non-Ag	Total	Ag	Non-Ag
Simple average final bound	48.50	113.50	34.50	4.50	17.40	2.50	5.00	11.90	3.90	3.40	4.80	3.20
Simple average MFN applied (2016)	13.40	32.70	10.20	4.00	13.10	2.50	5.20	11.10	4.20	3.50	5.20	3.20
Trade weighted average (2015)	7.60	38.00	5.60	2.10	11.10	1.20	3.00	7.80	2.60	2.40	3.80	2.30
Imports in billion US\$ (2015)	370.60	23.10	347.50	637.10	53.70	583.40	1721.60	122.00	1599.60	2137.80	118.50	2019.30

Source: Tariffs profile, WTO (2017), Accessed on 16<sup>th</sup> September, 2017.

Note: Ag- Agriculture, Non Ag- Non Agriculture

## CONCLUSION

Disciplines in the field of agriculture have been quite flexible compared to the general disciplines in GATT 1947 in respect to market access, domestic and export subsidies. It allowed countries to use non-tariff measures such as import quotas and subsidies. In such a scenario trade in agricultural products between countries became highly distorted. Each country tried to protect its domestic market by erecting high barriers in trade in agricultural products., which sort of insulated the markets from external trade.

The study found that during the period 2000 to 2016, Russia, India, China and New Zealand are given more importance to agricultural sector than compared to other WTO member countries. It also found that highest outlays were made by OECD member countries followed by China and EU under both general service support and producer support. Among the developed and under developed countries, highest in both producer supports and general service supports were by China excluding OECD members. The study found that the Technical Barriers to Trade, Sanitary and Phytosanitary and Anti-dumping were emerged as most prominent non tariff measures in world. The study also showed that highest non tariff measures were imposed by Asia followed by Europe and North America. The study found

that the USA imposes the highest number of Sanitary and Phytosanitary (SPS), Technical Barriers to Trade [TBT], Countervailing (CV) measures. The India, Indonesia, Poland, Australia, Norway and Venezuela are imposed highest numbers of non-tariff measure like Anti-dumping, Safeguards, Special Safeguards, Quantitative Restrictions, Tariff-rate quotas, and Export Subsidies respectively. The India has imposed highest tariffs and import duties than Japan, USA and European Union in both agriculture and non agriculture sector. It gives a price advantage to locally-produced major agriculture goods over similar goods which are imported.

### Research Implications

Information on the current status of supports and measures a critical input into trade policy debates and helps demonstrate that further efforts are still worthwhile. These examined issues have a significant impact on trade negotiations on world trading rules. It adds value to the current stock of research directed at the impacts of domestic support and measures policies.

The study findings have important implications to be consider in designing WTO Agreements or policies or programs to boost agricultural development and promotion of foreign trade. A significant finding of this study is that while many trade and domestic support policies are aimed at increasing protection of agriculture. Sanitary and Phytosanitary (SPS) and Anti-dumping (ADP) were emerged as most prominent non-tariff measures to protect agriculture in the world. The impacts of current support policies have a number of implications for further multilateral agreement on agricultural trade and domestic support & measures policy reform. There is still something to be gained from all regions in pursuing further reforms. Finally, the study concludes that each country tried to protect its domestic market by erecting high barriers in or another way in trade in agricultural products. The study is suggesting that WTO has to make necessary correction agreement and club all measures into one and deal.

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