

WTO and Global Agricultural Trade Policies: Philosophy, Practice, Effects and Vision

MB Dastagiri^{1*}, Naga Sindhuja PV² and Rakesh S³

¹*Principal Scientist, ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, India*

²*Young Professional, ICAR-NAARM, Rajendranagar, Hyderabad, India*

³*Research Associate, ICAR-NAARM, Rajendranagar, Hyderabad, India*

***Corresponding Author:** MB Dastagiri, Principal Scientist, ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, India.

Received: April 22, 2020; **Published:** May 18, 2020

Abstract

Competition among the nations is the biggest problem within the international trading system. WTO deals with the rules of trade among countries and plays an important role for supporting global economic development. Trade policy refers to a frame of rules and regulations concerning the exchange of goods globally. Tariffs, quotas, and export import regulations are some of the WTO trade policies. CAGR formulae, Delphi survey method and meta-analysis were used for analysis. The study analyzed the WTO agricultural trade policies, percentage of agricultural exports and imports in the total merchandise trade, trends, elasticity's, growth rate and instability across the continents. The study also analyzed the effect of WTO and different countries trade policies effects on global economy in general and agriculture in particular and future vision. The study analyzed the importance of WTO trade policies in the global agriculture trade. Favorable trade in the agricultural products had been noticed in the European and American continents whereas the negative trade balance has been noticed in the Asian and African continent. Total merchandise trade was found to be high in the Asian continent due to the existence of highly populated countries such as China and India. Europe exported and imported more agricultural products in the world. African agricultural trade was very poor than other continents. Agricultural exports growth rate was higher than imports in the Asia but reverse trend was seen in other continents. Stability has been found in the agricultural trade in all continents. The exports price elasticity of agricultural products in Europe was marginally higher than imports. Agricultural commodities trade was shown negative growth in the Brazil and Argentina of the American continent and Angola of the African continent. USA and China imposed high tariff rates, which affect the whole global economy. WTO members discussed regarding elimination of export subsidies. Global agricultural trade polices of different countries shows that different countries adopted the different agricultural policies and strategies to protect their domestic trades and protection of local farmers. Governments should encourage precision farming and advanced green house technologies in the African continent. WTO helped to protect the producers, consumers and multi-stake holders by balancing the trade policies. WTO has to take an action for balancing the trade smoothly and freely. Integration, equality and co-ordination among the member countries are very important factors to take up any decision on WTO trade policies. This study used for policy makers, decision makers, producers, consumers and multi-stake holders.

Keywords: WTO; Global Agricultural Trade Policies; CAGR Formulae

Introduction

Competition among the nations is the biggest problem within the global trading system. The draft of the 1948 which was given by Havana Charter designed to create the ITO. ITO gave the possibility that international cartels and limited business practices would aggravate market access. US Senate rejected the International Trade Organization informally and gave birth to GATT. Mainly GATT dealt with trade in goods. GATT was composed with 75 member countries. It was collapsed because GATT ran in favor of the industrial countries, and lost confidence among the developing countries. Hence, WTO was established at 1 January 1995 headquarters at Geneva, Switzerland. It was created by the negotiation of Uruguay round (1986-94). 164 member countries represented 98% of the world trade. WTO deals with the rules of trade among the countries in the world. WTO [1] is the biggest reform of international trade for supporting economic development and promoting relations among nations. The main aim of WTO is to make sure the trade flows freely, predictably and smoothly. Administering trade agreements of WTO, forum for trade negotiations, handling trade disputes, monitoring national trade policies, training and technical assistance for developing countries, and co-operation with other international organizations are the main functions of WTO. Presently WTO rules are codified in three agreements: The General Agreement on Tariffs and Trade (GATT), General Agreement on Trade in Services (GATS) and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). However, WTO and its agreements also covered trade in services and intellectual property. The main principles associated with WTO are non-discrimination, predictability, free trade, and promotion of economic growth and development. The rules which WTO mainly served are anti-import tariffs, easy custom procedures, domestic taxes, protection laws, reduce quotas and subsidies [2].

Under the agreements of WTO, locally-produced and imported goods should be treated equally. The WTO agreements allowed countries to made changes using “progressive liberalization”. Government introduced the multilateral trading system to build the business environment predictable and stable. A ninth round, under the Doha Development Agenda, is mainly focused on lowering tariffs or customs duties of imported goods. Recent trade policies were imposed by WTO that members of WTO countries agreed to eliminate the subsidies of agricultural exports. The main intension behind that is delivering a key target of the sustainable development goal of zero hunger (Nairobi Ministerial Conference, 2015). Government has introduced trade restrictions covering a substantial amount of international trade affecting \$747 billion in global imports over the previous two years. Average tariffs have halved nearly, from 10.5% to 6.4%. In recent years, WTO members have accepted to update border procedures through a landmark agreement on trade facilitation projected to lift trade by over \$1 trillion/year. They have liberalized trade and abolished harmful farm export subsidies.

Countries must decrease their own distorting domestic supports and their tariffs to increase the gains in agricultural and food sectors. These policies led to lower export competitiveness and limit countries ability to participate in agro-food GVCs by increasing the cost of inputs (Institute of International Economics). Most of the countries adjusted their trade policies with food prices to insulate their domestic local markets from high global market prices [3]. Future price shocks reduced investments mainly in agricultural production, which has negative long-run impacts on food supply. Volatility in food prices may increase political risks which could induce governments to adopt ill-designed ad hoc market interventions. Lowering import barriers or raising export barriers to insulate local market prices of individual countries from global prices assisted for removal of poverty. If all countries do this, however, world prices will rise, reducing the effectiveness of insulation and increasing the problems of net food importers-suggesting that careful thought is needed to deal with this collective action problem [4].

Restrictions on trade helped to raise global prices on food commodities, which combated with food insecurity and poverty among the poorest people in the world. Global economy is mainly depended on the international trade. There are no or limited studies on WTO agricultural trade policies. Hence, the current study was made on WTO rules and trade policy on global agriculture and also analyzed the percentage share of agricultural exports and imports with the world merchandise trade along the continents. The study analyzed the trends, growth rate, stability and elasticity of agricultural exports and imports along the continents across the world. The global agricultural trade policies of different countries in the world were assessed.

Objective of the Study

The objectives were:

1. To examine the WTO rules and trade policies on global agriculture.
2. To estimate percentages and share of continents agricultural exports and imports with the world total merchandise trade.
3. To analyze the trends, growth rate, stability and elasticity of agricultural exports and imports across the continents in the world.
4. To analyze country-wise the effects of global agricultural trade policies on global trade.
5. To suggest strategies and policies and future vision for the development of global trade.

Data and Methodology

The study is basically quantitative frame work of the effects of WTO trade policies on global agriculture in general and trade in particular. The study period was from 1990-91 to 2017-18. Selected continents for study purpose were Asia, Africa, America and Europe. The data and information on exports and imports value of total agricultural commodities from selected continents were collected. Total agriculture products include agriculture, livestock, fisheries and forestry. The secondary data sources were United States Department of Agriculture Foreign Agricultural Service, Organization for Economic Co-operation and Development, FAOSTAT, Centre for Monitoring Indian Economy, World Trade Organization, United Nations Environment Programme, United Nations Conference on Trade and Development and Foreign Trade Policy Reports. Agricultural trade policies were collected from the top 4 countries among the continents. The study estimated the percentage share of total agricultural exports and imports with the global trade across the continents. The trends, growth rate, stability and elasticity of total agricultural exports and imports were analyzed. The meta analysis of country wise policies are critically appraised. The best policies are arrived to safeguard each country. By using Delphi survey method of Dalkey and Helmer, 1963 to validate the results. The study suggests for the best geopolitical and the global agriculture developmental measures.

Growth rate formulae [5]

CAGR is computed by fitting an exponential function to the variables of interest namely, allocation of funds, producer support estimates and consumer support estimates for the period 1995 to 2018.

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

Let us considering multiplicative error term in the equation 1, model may be linearized by logarithmic transformation

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

Where, A (=lnA₀) 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

Instability index

Coefficient of variation (CV) = Standard deviation × 100

Mean

Results and Discussions

WTO agricultural trade policies

Market access, domestic support and export subsidies are the three main agricultural policy pillars in the WTO agriculture agreement, whose main objective is to reform agricultural trade. In 1995, WTO dealt with binding commitments legally on market access in the form of reduced import duties and related issues, domestic subsidies in the form of income and price support, which influenced trade and export subsidies.

WTO agricultural trade policies have presented in the table 1. Uruguay round negotiations provided a long term trade reforms and domestic policies in the agricultural sector. WTO recommended Doha Round of multilateral trade negotiations to address the problem. The main of this round was to reduce tariffs in importing countries. However, under special safeguards, countries may raise the tariff to protect the domestic agriculture. In Bali Ministerial Conference, WTO members expanded the general service programs for rural development, food security and poverty alleviation in the developing countries. These programs are related to land reform and rural livelihood policies. Nairobi conference focused on domestic policies. WTO members negotiated among the policy measures such as quantitative import restrictions, custom duties were raised or lowered according to the global market prices, minimum import prices to protect domestic farmers, voluntary export restraint agreements, discretionary government powers to issue import licenses, and non-tariff measures through state trading enterprises.

Years	Negotiations	WTO Agriculture Trade Policies
1986-94	Uruguay Round Negotiations	It provided a framework for agricultural trade long- term reforms and domestic policies. Special treatment has given to the rice in the Japan, Republic of Korea and Philippines whereas cheese and sheep meat in the Israel.
1995	WTO	Market access, domestic support, and export competition were the three agricultural policy pillars. Developed countries agreed to lower their tariffs by an average of 36% on all agricultural commodities. For developing countries, the same was 24%, subjected to a minimum 10% phased in over 10 years.
2000		For developed countries, the first year of the Agriculture Agreement and the WTO raised gradually to 5% of domestic consumption by 2000.
2001	Doha Round Negotiations	Doha launched for reducing tariffs. However, raise the tariffs temporarily under special safeguards for dealing with import surges or price falls, to provide market access for tropical products. WTO recommended multilateral trade negotiations to address not only tariffs but also investment, competition policy, and environment.
2004		For developing countries, the first year of the Agriculture Agreement and the WTO arose gradually to 5% of domestic consumption by 2004.
2008		WTO Members developed a comprehensive draft on the problems faced in agricultural market access.
2011	Geneva Ministerial Conference	To focus on the issues related to the trade in the Doha round.
2013	Bali Ministerial Conference	In this conference, WTO members expanded general services for developing countries by summing up of rural development, land reform policies, food security and poverty alleviation programs.
2015	Nairobi Ministerial Conference	This conference focused on the domestic protection policies. >1, 000 tariff quotas on individual products, minimum import prices, quantitative import restrictions, voluntary export restraint agreements, variable import levies, discretionary government powers when issuing import licenses, and non-tariff measures maintained through state-trading enterprises across the WTO’s membership.
2018-19		US- China trade war affects the international trade. United States suddenly raise tariffs on nearly 50% of its imports from China. Immediately China retaliated with tariffs on more than 70% of imports from the US.

Table 1: World trade organization agriculture trade policies.

Source: WTO and International Institute of Economics.

Global exports and imports

Percentage share of agricultural exports and imports to the world merchandise trade across the continents have presented in the table 2. Agricultural exports and imports shared 7.90% and 8.00% with the world total merchandise trade, respectively. Agricultural exports (3.38% and 2.22%) shared more percentage with total merchandise trade than agricultural imports (3.22% and 1.38%) in the European and American continent, respectively. However, in the Asian and African continent, agricultural imports (2.82% and 0.46%) shared more percentage than agricultural exports (1.65% and 0.31%) with the total merchandise trade. It means negative trade balance has been observed in the Asian and African continent. This may be due to existence of the highest populated countries in the Asian continent and poor agricultural performance due to adverse climatic conditions such as drought in the African continent.

The study found that world shared nearly equal 8% of agricultural trade with the global merchandise trade. Favorable trade in the agricultural products had been noticed in the European and American continents whereas the negative trade balance has been noticed in the Asian and African continent. This is because of existence of the highest populated countries in the Asian continent and poor agricultural performance due to adverse climatic conditions such as drought in the African continent.

Continent	Total Exports	Total Imports	Agricultural Exports	Agricultural Imports	% to the Total Exports	% to the Total Imports
Africa	422.76	524.55	54.65	82.88	0.31	0.46
America	2962.58	3851.20	392.83	247.53	2.22	1.38
Asia	7286.89	6768.76	292.51	506.64	1.65	2.82
Europe	6776.43	6530.22	599.21	578.84	3.38	3.22
World	17731.53	17956.01	1401.42	1436.62	7.90	8.00

Table 2: Continent wise percentage share of agricultural exports and imports to the world (2017-18).

Source: FAOSTAT and CMIE.

From figure 1, Asian continent (42%) has shown the more percentage share of exports in total global merchandise trade followed by Europe (39%). The largest populated countries are in the Asian continent such as China, India etc. However, the American and African continents shared 17% and 2% with the world.

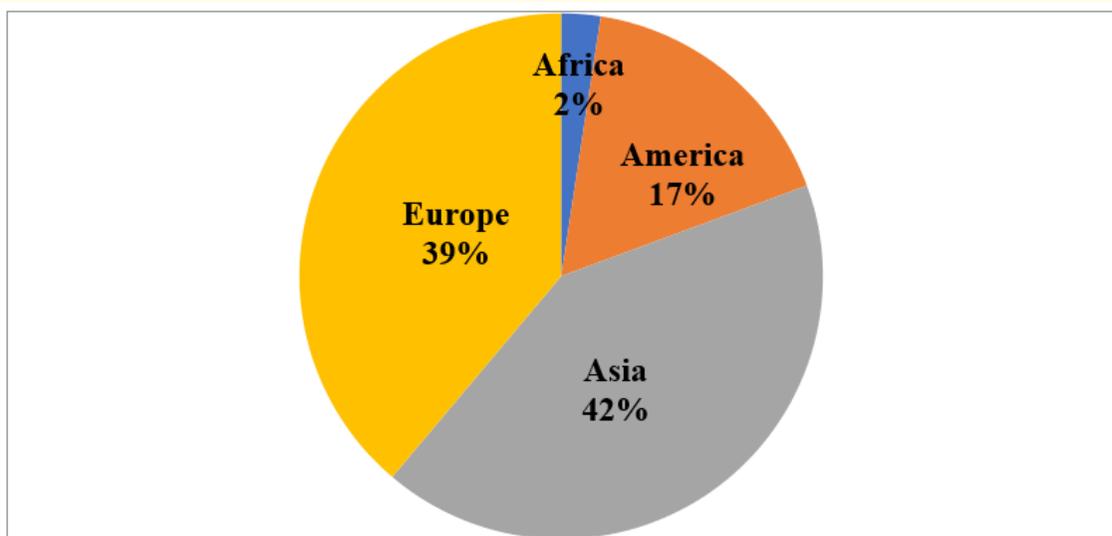


Figure 1: Total merchandise exports in the world across continents (2017-18).

Figure 2 represented the total merchandise imports in the globe. The total commodities imported by the Asia (38%) were more followed by Europe (37%) and America (22%).

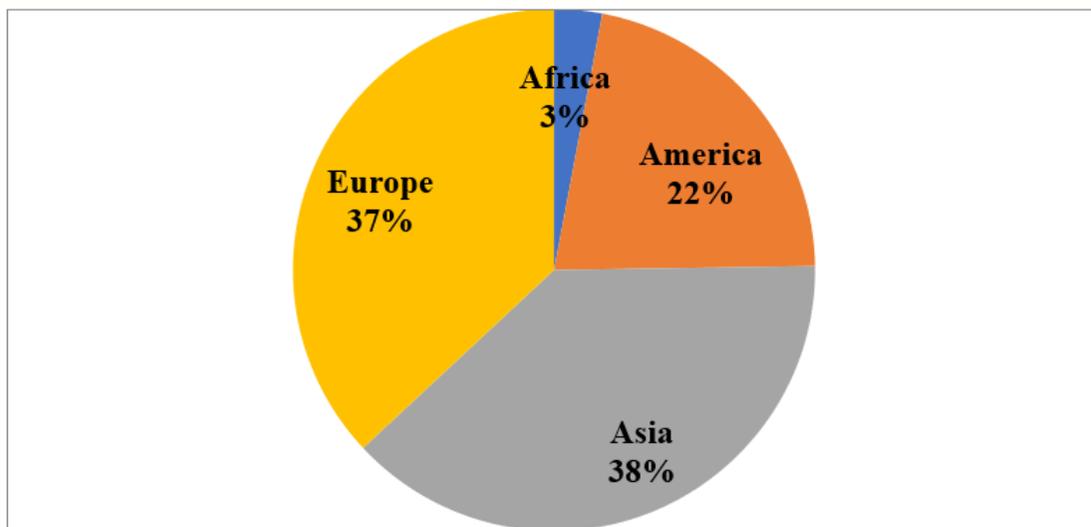


Figure 2: Total merchandise imports in the world across continents (2017-18).

From figure 3, it was shown that agricultural exports in Europe (45%) were higher than America (29%) and Asia (22%) during 1990-91 to 2017-18.

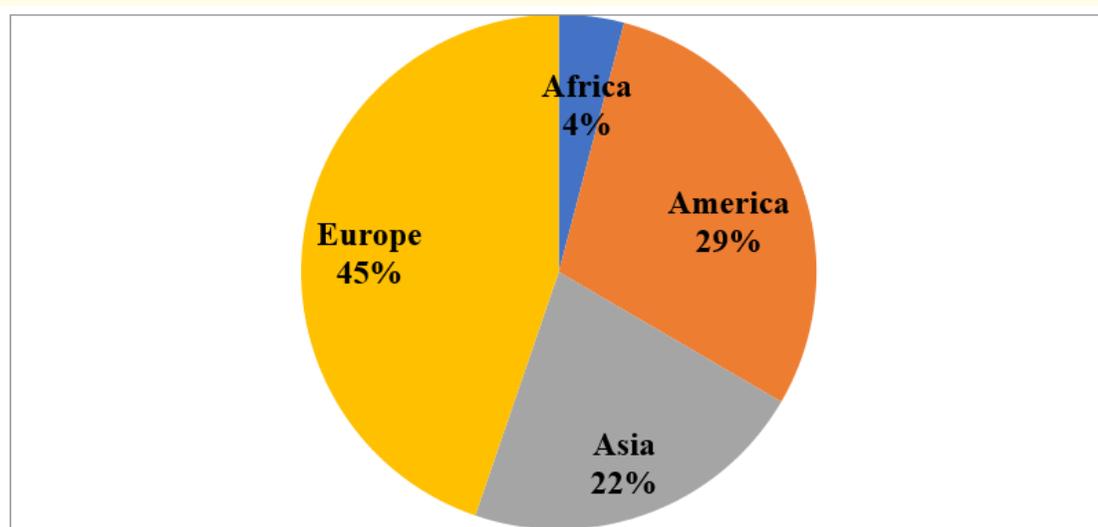


Figure 3: Agricultural exports in the world across the continents during the 2017-18.

Figure 6 represented the imports of total agricultural products in all continents across the world during 1990-91 to 2017-18. In the

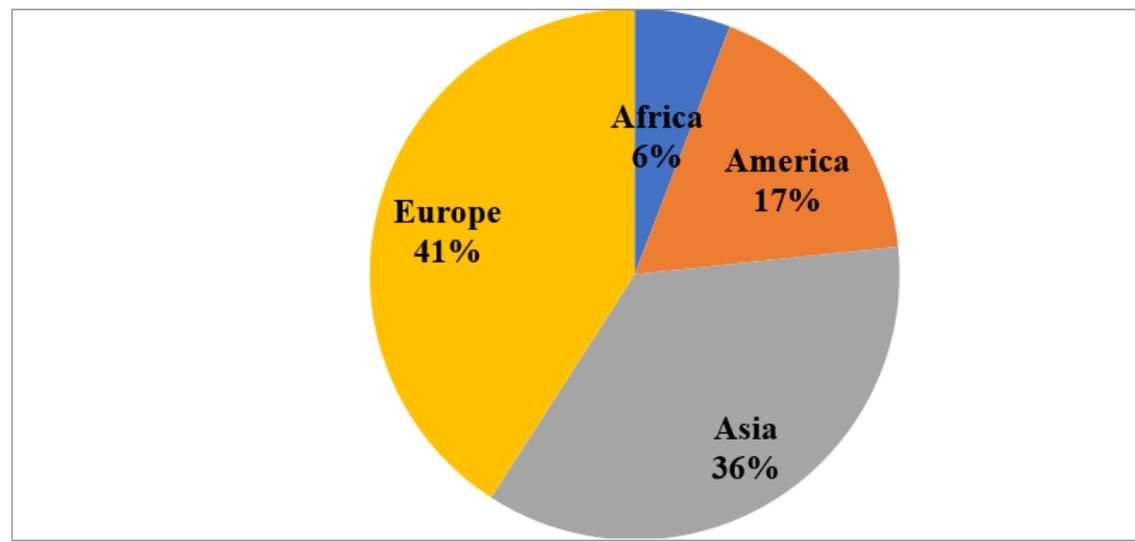


Figure 4: Agricultural imports in the world across the continents during 2017-18.

From figure 4, it was shown that agricultural imports in Europe (41%) were higher than Asia (36%) followed by America (17%).

The study revealed that the total merchandise trade of exports was found to be more in the Asian continent followed by Europe. This is because of more population, largest economy countries and developed technologies in the Asian continent countries such as China. The total commodities imported by the Asia were more followed by Europe and America. Agricultural exports were observed to be more in European continent followed by America and Asia. However, agricultural imports were seen to be more in the European continent followed by the Asia and America.

Trends in exports and imports (Billion US\$) of agricultural products in the globe

Trends in exports of total agricultural products during 1990-91 to 2017-18 have represented in figure 5. All continents were shown increasing with mixed trends of total agricultural products exports after 2008-09 upto 2017-18. It represented that all countries exports were increased over the years. It is due to development of agriculture technology, new varieties or improved high yielding varieties and usage of modern machinery in cultivation practices. Among the continents, Europe took the highest position in exporting the agricultural commodities in the world followed by Asia during 1990-91 to 2017-18.

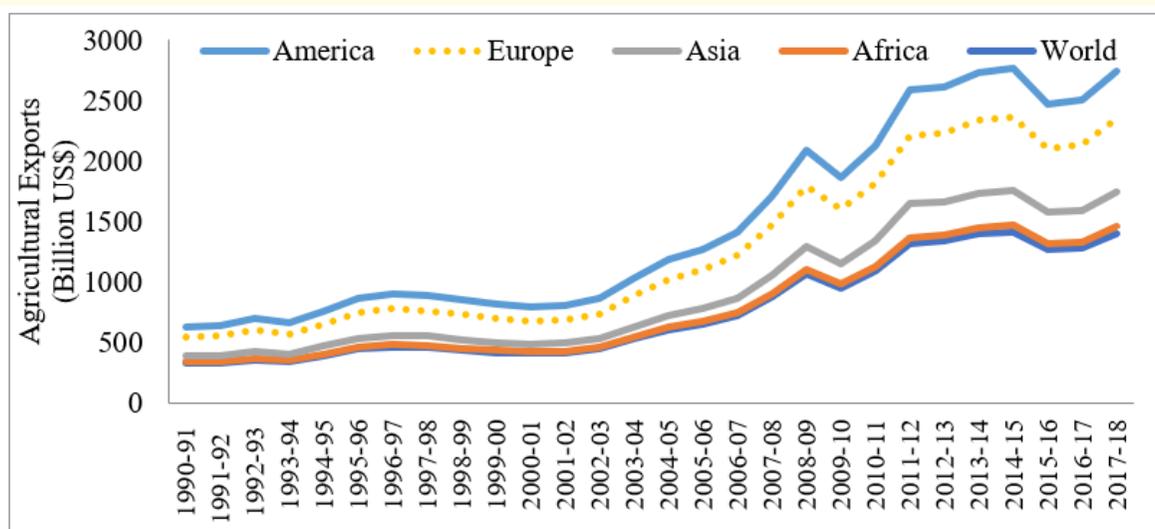


Figure 5: Trends in exports of total agricultural products in world across different continents during 1990-91 to 2017-18.

Figure 6 represented the imports of total agricultural products in all continents across the world during 1990-91 to 2017-18. In the world, the imports of total agricultural products were shown increasing with mixed trends. Imports of total agricultural products were slightly increased in all continents over the time. Europe imported more agricultural commodities in the world followed by the American continent during the period of 1990-91 to 2017-18.

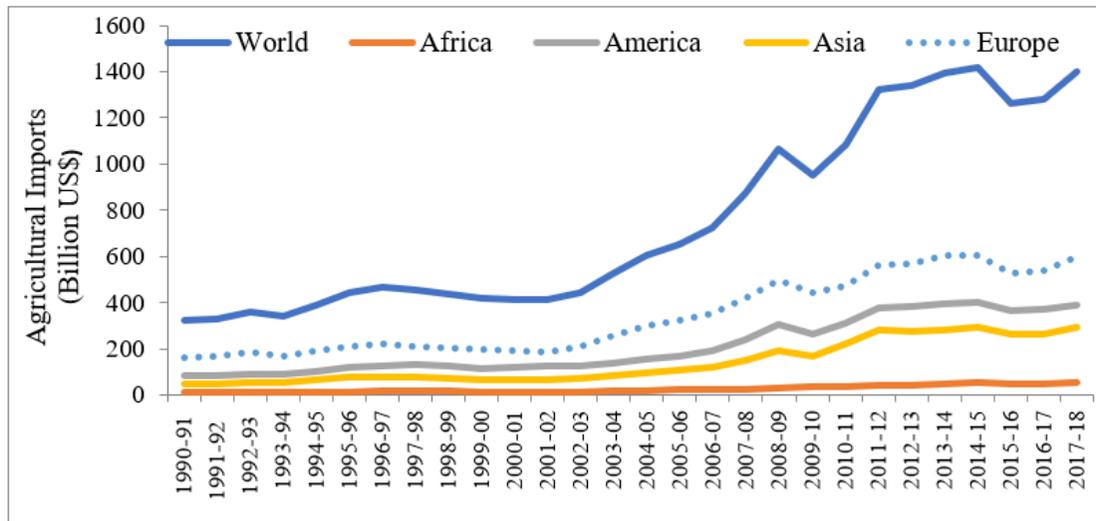


Figure 6: Trends in imports value (Million Thousand US\$) of agricultural products in world across different continents during 1990-91 to 2017-18.

The study found that the trends have shown the Europe exported more agricultural commodities in the world followed by the Asia. However, Europe imported more agricultural commodities followed by the American continent in the world during 1990-91 to 2017-18. Industrialization, preference given to non- agricultural commodities, domination of service sectors led to the agricultural commodities importing in the Europe and American continents.

Growth rate and instability of total agricultural products exports and imports in the world

Growth Rate and Instability of Exports Imports Value of Total Agricultural Products in the World have represented in the table 3. Agricultural exports growth rate (5.55%) were greater than the imports (5.35%) in the world during 1990-91 to 2017-18. Highest growth rate of agricultural products were found in the exports of Asia (7.07%). Growth rate of agricultural exports (7.07% and 4.98%) were higher than imports (6.82% and 4.03%), respectively in Asia and Europe. However, reverse trend has been noticed in other continents such as Africa and America, where imports of total agricultural products growth rate were higher than the exports.

Name of the Continents	Parameters	1990-91 to 2000-01	2001-02 to 2011-12	2012-13 to 2017-18	1990-91 to 2017-18
Asia	Exports	3.35 (17.62)	15.85 (44.26)	1.00 (3.90)	7.07 (64.50)
	Imports	3.82 (16.95)	13.66 (48.72)	1.80 (4.71)	6.82 (65.60)
Africa	Exports	1.27 (16.27)	12.86 (38.11)	4.80 (7.89)	5.81 (57.82)
	Imports	2.57 (12.75)	14.52 (46.72)	-0.32 (7.50)	6.39 (65.48)
America	Exports	3.62 (17.40)	11.87 (39.78)	0.27 (3.68)	5.88 (56.37)
	Imports	5.98 (21.85)	9.96 (32.03)	1.78 (2.84)	6.31 (53.54)
Europe	Exports	1.66 (10.42)	11.61 (33.52)	1.03 (5.91)	4.98 (48.53)
	Imports	0.01 (7.88)	11.15 (33.10)	0.04 (6.65)	4.03 (44.25)
World	Exports	2.36 (13.21)	12.29 (37.38)	0.94 (4.89)	5.55 (53.81)
	Imports	2.11 (11.86)	11.87 (36.50)	0.96 (4.26)	5.35 (52.85)

Table 3: Growth rate and instability of exports and imports value of total agricultural products in the world.

Exports and imports of total agricultural products were found to be stable in all continents across the world during 1990-91 to 2017-18.

The study found that growth rate of the agricultural exports was greater than the imports in the Asian and European continent whereas, the reverse trend had seen in the American and African continent. There was the existence of stability in the agricultural exports and imports.

Continent wise price elasticity of agricultural commodities in the world

Continent wise export and import price elasticity of agricultural commodities in the world

Export and import price elasticity's of agricultural commodities in the world across the continents have presented in the table 4. During the period of 1990-91 to 2017-18, the export and import elasticity's of world agricultural commodities were found to be equal. The export and import price elasticity's of all agricultural products were found to be positive. The export price elasticity's of Europe (0.94%) were more than the imports (0.42%). But the reverse trend had been noticed in the Asia, Africa and American agricultural commodities where import price elasticity's were more than the exports. It indicates that Europe is exporting at higher prices than import prices. This case was reverse in Asia.

Continents	Variables	1990-91 to 2000-01	2001-02 to 2011-12	2012-13 to 2017-18	1990-91 to 2017-18
Asia	Exports	1.81	0.13	0.62	0.45
	Imports	1.33	0.18	8.05	0.46
Africa	Exports	3.95	0.27	6.26	0.26
	Imports	1.49	0.22	-1.30	0.56
America	Exports	1.98	0.11	-11.80	0.40
	Imports	1.56	0.04	-1.68	0.59
Europe	Exports	-0.73	0.21	-4.91	0.94
	Imports	0.45	0.11	-2.76	0.42
World	Exports	4.80	0.14	-5.09	0.51
	Imports	3.09	0.15	-10.77	0.51

Table 4: Price elasticity of agricultural commodities in the world across the continents (1990-91 to 2017-18).

Source: CMIE, FAO and DGCIS.

The study found that the exports price elasticity of agricultural products in Europe were marginally higher than imports. During the period of 1990-91 to 2017-18, the export and import elasticity's of world agricultural commodities were found to be equal.

Country wise global agricultural trade policies

Global agricultural trade policies of different countries such as Argentina, Brazil, China, Hong-Kong, France, Germany, Japan, India, Italy, Netherlands, South Korea, Thailand, United Kingdom, United States were represented in the table 5. This table showed the comparison of previous and current year exports and imports of agricultural products and their policies in the different countries across the globe. The different countries adopted the different agricultural policies and strategies to protect their domestic trades and protection of local farmers.

Country	Variables	Current	Previous	Change	Reasons	Agricultural Polices Adapted by Countries
Asian Continent						
China	Exports	67635	64257	3378	Reflects stronger performance of exports. In agricultural products, mainly dried vegetables (\$2.79B) and onions (\$ 2.78B) were exported, accounting for 0.12% and 0.12% of all commodities exports.	China agreed to allow quotas of foreign rice, wheat, and corn into the country at a 1 percent tariff. All imports beyond these quotas are subject to a prohibitive 65% tariff. Price support policies for cotton, soybeans, and corn.
	Imports	156295	140368	15927	Reflects stronger performance of imports due to increasing imports of soybean (\$36.6B) and non-fillet frozen fish (\$3.47B) which accounted for 2.4% and 0.23% of all commodities imports, respectively.	
India	Exports	30424	26489	3934	Reflects stronger performance of exports. This is due to rice (2.4%), frozen bovine (1.4%), pepper (0.32%), tea (0.27%), groundnut (0.24%) and coffee (0.23%)	MSP to the producers, high customs duties for domestic protection, Technological measures, Land reforms, institutional credit, procurement and support prices, and input subsidies
	Imports	27350	24078	3273	Reflects stronger performance of imports. This is due to imports of dried legumes (0.81%) and oils especially palm oil (1.5%) and soybean oil (0.60%)	
Japan	Exports	4242	4021	221	Reflects stronger performance of exports. However, non agricultural products exports were higher than agricultural commodities.	Maintenance of a secure food supply, and border measures on agricultural products concentrate on rice and dairy products.
	Imports	55829	51748	4082	Reflects stronger performance of imports. This is due to imports of mainly corn, pork, frozen fish, coffee, wheat and soya accounted for 0.44%, 0.68%, 0.50%, 0.22%, 0.22% and 0.22%, respectively.	
South Korea	Exports	6249	5808	442	Reflects stronger performance of exports. Exports of agricultural commodities were lower than non agricultural commodities.	Tax free imports of raw materials, higher priority to multilateral trade negotiations, development of higher-value-added business, price stabilisation of agricultural and fisheries products, market price support, trade measures, reduction in input costs, and tax concessions
	Imports	25414	23597	1817	Reflects stronger performance of imports. This is due to imports of agricultural products such as corn (\$1.63B), wheat (\$842M), pork (\$1.53B) and bovine meat (\$1.52B).	

European Continent						
France	Exports	64033	60182	3851	Reflects stronger performance of exports. This is due to exports of barley (0.19%), coffee (0.18%), rapeseed (0.16%) and potatoes (0.16%).	Removing tariff and non-tariff barriers, improving transparency, opening of markets, balanced trade, raising its anti-dumping duties, improving its monitoring of foreign investment, and ensuring the access of businesses to foreign markets for exports development.
	Imports	55123	51084	4039	Reflects stronger performance of imports. This is due to coffee (0.33%), rolled tobacco (0.24%), live plants (0.19%), other vegetables (0.16%), other nuts (0.16%) and soybean meal (0.16%).	
Germany	Exports	79167	73743	5423	Reflects stronger performance of exports. This is due to increase in exports of pig meat (0.35%) and cheese (0.32%).	promoting foreign investments in agriculture, development of quality assurance systems, fair trade movement, integrated regional trademarks, protection and promotion programs, marketing support and rural development
	Imports	91708	84901	6806	Reflects stronger performance of imports. This is due to increase in cheese (0.39%), coffee (0.32%) and rapeseed (0.24%).	
Italy	Exports	45343	41240	4103	Reflects stronger performance of exports. This is due to exports of agricultural products such as coffee, apple and pears, cheese, and grapes accounted to 0.33%, 0.23%, 0.60% and 0.17% of all commodities exports, respectively	Direct payments to farmers through common agricultural policy, national plan for organic agriculture, national strategy plan for rural development, sustainability, modernization of production, import regulations, bureaucratic procedures for potential exporters
	Imports	43732	40713	3018	Reflects stronger performance of imports. This is due to increase in imports of pork, cheese, coffee, wheat and bovine meat accounted to 0.50%, 0.44%, 0.40%, 0.35% and 0.42% of all total commodities imports, respectively.	
United Kingdom	Exports	26802	25956	846	Reflects stronger performance of exports. This is due to frozen fish (\$977M), cheese (\$768M) and coffee (\$344M) which accounted for 0.25%, 0.19% and 0.08% of all commodities exports, respectively.	Free and unrestricted trade, charge customs duty on goods, direct payments to farmers, Common Agricultural Policy subsidies up to 50-80% free trade within the EU.
	Imports	55904	53460	2444	Reflects stronger performance of imports. This is due to imports of cheese (\$2.03B), poultry meat (\$1.49B), other vegetables (\$1.22B) and (\$1.05B) which accounted for 0.33%, 0.24%, 0.20% and 0.17%, respectively.	

American Continent						
United States	Exports	141401	137765	3635	Reflects stronger performance of exports. This is due to increase in exports of soybeans (\$22B), corn (\$9.43), pork (\$4.46B) and poultry meat (\$3.61B) which accounted 1.8%, 0.75%, 0.36% and 0.29% of total commodities exports, respectively.	Open markets for trading soybeans, corn, and wheat; Maintenance and balance of international food safety standards, reducing unnecessary barriers to trade, and promoting transparent, predictable and science based regulatory systems.
	Imports	130432	123589	6844	Reflects stronger performance of imports. This is due to increase in imports of agricultural products such as coffee (\$6.03B), fruits (\$4.11B) and crustaceans (\$6.91B) which accounted 0.28%, 0.19% and 0.32% of total commodities imports, respectively.	
Canada	Exports	44830	42625	2204	Reflects stronger performance due to increase in exports of agricultural products such as wheat (\$5.43B), corn (\$5.1B) and pig meat (\$2.67B) accounted for 1.4%, 1.4% & 0.71% of all commodities exports, respectively.	Direct output and input subsidies program, stabilization programs, tariff and trade policies, market regulations and institutions, research, extension services, and smaller financial transfers to the agriculture
	Imports	33568	32434	1133	Reflects stronger performance of imports due to increase in domestic demand of fruits, vegetables, coffee and bovine meat.	
Argentina	Exports	33177	34880	-1703	Discouraged production growth of agricultural commodities with export restrictions and drop in the use of improved technologies	Increasing regional partnerships such as MERCOSUR and the Union of South American Nations (UNASUR), innovation, value chains and small-scale producers, building on INTA's capacities in agricultural R&D and extension services.
	Imports	2795	2033	762	Increased with previous year due to importing soybean, processed horticultural products, banana, coffee, vegetable saps, fruits, nuts and other agricultural products etc.,	
Brazil	Exports	79463	69612	9852	Reflects larger production mainly due to exported soybean (\$25.9B) and raw sugar (11.40B)	Maintaining an extensive range of price and credit policies, export promotion policy, heavier investments in transport networks, interest rate subsidies, direct investments in rural infrastructure
	Imports	9310	9673	-363	Reflects weaker performance of agricultural products. During the last five years, Brazil have decreased the all commodities of imports at an annual rate of -8.9%, from \$223B in 2012 to \$ 140B in 2017. Increased imports of other than agricultural products were more.	

African Continent						
South Africa	Exports	9548	8350	1198	Reflects the stronger performance of exports. Due to increase in agricultural commodities such as citrus and grapes exported 1.6% and 0.82%, respectively of all commodities exports.	Land reform process, providing adjustment assistance, economic integration between small and large-scale commercial units and trade development, better integration into the global trading system, and reducing poverty.
	Imports	6420	6122	298	Reflects the strong performance of imports due to increase in imports of rice and 0.65% & 0.61%, respectively.	
Nigeria	Exports	1645	1273	372	Reflects the strong performance of trade. Due to increase in exports of agricultural commodities such as \$207M of other oily seeds & \$143M of coconut, Brazil nuts and cashews.	Land resource, credit and pest control policies, promoting fair and competitive marketing regime for agricultural commodities, adequate training facilities and infrastructure, land reform and mass literacy policies
	Imports	6186	5039	1147	These imports performance increased due to increase in imports of agricultural commodities such as \$1.35B of wheat (3.9%) and \$182M of corn (0.53%).	
Angola	Exports	17	22	-5	Reflects the very poor performance of exports. This is due to exports concentrated only on non-agricultural products instead of agricultural products (86% of only crude petroleum exported to other nations)	Promoting professional training and transfer of technology; implementing family farming, cooperatives, and public-private partnership; and co-coordinating stake holders stakeholders in rural areas for the development of agricultural sector.
	Imports	2863	2250	612	Imports performance increased due to increase in agricultural exports such as poultry meat (2.7%) and wheat (1.6%) of all commodities exports.	
Algeria	Exports	431	382	50	Agriculture exports increased due to Tropical fruits (0.16% of all commodities exports)	Private sectors involved in marketing of agricultural products; government intervention in prices, margins, and quarantine restrictions; and Maintenance of PE monopolies privileges in access to resources such as foreign exchange, subsidies and credit.
	Imports	9257	8910	347	Imports increased due to more concentration on non agricultural commodities production. Hence, this country depends on imports of agricultural commodities such as, 3.6% of wheat (\$1.7B) and 1.4% corn (\$661M) of all commodities imports.	

Table 5: Global agricultural commodities trade policies.

Source: Organization for Economic Co-operation and Development, WTO and DGCIS; Note: Exports and Imports Value (Billion US\$).

Countries revised their policies every year according to the existing situations of the economy. The negative change has been observed in the exports of the Argentina (-1703), imports of the Brazil (-363) and exports of Angola (-5) agricultural commodities. The negative change represented the weaker performance of the exports and imports, whereas positive change represented the stronger performance of the exports and imports of the total agricultural products. Discouraged production growth of agricultural commodities with export restrictions and drop in the use of improved technologies led to the negative change in the Argentina. Angola of the African continent reflected the very poor performance of exports. This is due to exports concentrated only on non-agricultural products instead of agricultural products (86% of only crude petroleum exported to other nations). Reflects weaker performance of agricultural products in the Brazil was due to increased imports of more nonagricultural commodities rather than agricultural commodities.

The study revealed that the agricultural commodities trade was shown negative growth in the Brazil and Argentina of the American continent and Angola of the African continent. This is due to the trade in those countries were highly preferred non- agricultural commodities such as crude petroleum, vehicles, pharmaceuticals and machinery equipments etc. rather than agricultural commodities.

Effects and future vision of agricultural trade policies

Trade policy refers to a frame of rules and regulations concerning the exchange of goods globally. Tariffs, quotas, and export import regulations are some of the WTO trade policies. In less developed countries, trade policy is mainly concerned with promoting industrialization and also coping with the development of the domestic economy.

Existence of income inequality was seen in both developing and developed countries. The development of globalization and the international co-operation have influenced on the market economy. In trade, global value chains help to ride the economic growth and poverty by integrating with the global economy. In 1930's, tariffs and trade barriers were reduced by many developed countries which brought about globalization.

Germany and US had imposed high tariff rates in manufacturing sector during 19th century. However, at the same time Japan had more extensive import controls. U.S. agricultural trade made manipulations in trade policies, national income, world population, and economic growth. Mostly China imports land-intensive commodities i.e. oils, oilseeds, and cotton from the US. Establishment of economic relations of US with Cuba would increase the growth in U.S.-Cuba trade, which foster greater productivity in economy of Cuba, and encourage rice, dairy products, meat, and other commodities exports to Cuba. Withdrawal from NAFTA would raise the tariff rates on agricultural commodities of Mexico and Canada under the most favored nations of WTO. Under WTO protocol, China settled to allow quotas of foreign rice, wheat, and corn into the country at a 1 per cent tariff. All imports in China beyond these quotas are subjected to 65 per cent tariff. However, the China follows a policy of self-sufficiency in cereals especially rice, corn, and wheat provide many subsidies to domestic producers. Japan has given many agricultural commodities exempt from substantial reductions or elimination of tariffs. Agriculture in Japan will have no future without enlightening the export market. Japan imposes safeguards, markups, tariffs, variable duties, state trading, tariff-rate quotas, sanitary, phyto-sanitary requirements, and other nontariff barriers and maintains domestic agricultural support measures for major commodities. From Trans-Pacific partner countries, elimination or tariff reduction on imports will hollow the prices of imported rice, oranges, beef, milk powder, and butter leading to opportunities for exporters in TPP to enhance their share in market of Japan. If the UK left the EU without a deal, it would automatically fall back on rules of WTO. Agricultural tariffs in UK would be significantly higher, rising to more than 35% for dairy products. India meets all WTO requirements under the main agricultural policy pillars such as Market Access, Domestic Support and Export Subsidy.

Restrictions on export helped to raise international prices for food commodities, which combated with food insecurity and poverty among the poorest people in the world.

The main agricultural non trade barriers are sanitary, phyto-sanitary measures and technical barriers. Removal of the trade barriers could increase the instability of the domestic economy. The country which imposed the more restrictive trade policies enjoyed the better economic growth. WTO created tariffs for promoting domestic production and consumption distortions due to inflated prices. Tariff helps to protect the domestic consumers, employment and national security. If the individual countries were in financial crisis, the best way to promote a better economic growth is reducing tariff. Politically, in Trump administration initiated the multiple trade tariffs rounds on China products. Later he introduced tariffs on the goods which imported from the European Union, Mexico and Canada. These political policies affect on the international trade economy. Trade barriers increase the stability of the domestic economy. Tariffs and subsidies increase the price of foreign goods when compared to domestic goods, lead to reduce imports. Agricultural policies in developed countries mainly export subsidies effected strongly on developing countries. That's why developing countries could create tariffs on imports and other kinds of commercial trade barriers. Export subsidies supported the countries national income, stabilize prices and equalize balance of payments.

Still so many economists suggested free trade policies are ideal in the world market. This free trade was not completely accepted by all countries even though it is beneficial to all parties. Free trade reflects the real market demand and supply of the goods. Free trade increases the choice of the consumers by reducing prices. Global production would be increased by free trade as countries specialized in goods where they have the highest comparative advantage rather than protecting weak industries from foreign competition by imposing trade restrictions. WTO Trade facilitation agreement came under force to lower trade costs and assist countries to increase the world economy. Free trade is the good way to protect and support the business opportunities including the growth of small and medium entrepreneurs. Less restrictions in trade policy lead to the better economic growth. Countries with more restrictive trade policies enjoy better growth. Open trade adopted by so many nations, but it benefits to low income countries by offering more affordable commodities and services. A multilateral initiative was designed by WTO to assist developing countries, especially low income countries, spur growth by integrating into the world economy.

Carbon taxes on greenhouse gas (GHG) emissions

Escalating greenhouse gas (GHG) emissions in atmosphere is the primary concern of World Trade Organization (WTO). In order to combat climate change and promoting sustainable development WTO taken several initiatives to check the emission rates and its accumulation by taxing on carbon dioxide (CO₂) emissions based on the carbon content. A carbon tax, places a greater burden on coal as it releases more CO₂ during combustion than the oil and gases. Other greenhouse gases like methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs) etc. are also considered under taxation. For example, taxes on N₂O emissions on polluting activities in France; taxes on the import and production of HFCs in Norway; imports of industrial gases, HFCs, per fluorocarbons (PFCs), and sulphur hexafluoride (SF₆) subjected to taxation in Denmark; proposed a CH₄ tax on sheep and cattle in New Zealand, but never been adopted. WTO disciplines may come into action if a carbon tax and their adjustments affect international trade. WTO rules would apply based on the carbon content of products or based on the adoption of "comparable" climate change mitigation measures [7]. Carbon taxes reduce the GHGs emissions, allow to switch on low-carbon fuels and products, and changes the economy's production and consumption structures. However, the price of carbon tax is determined by the regulators through the tax rate (i.e. exogenously), while the quantity of emissions that will be minimized is a result of measures adopted by the industry to cut emissions (i.e. endogenously) [8-23].

Conclusion

Competition among the nations is the biggest problem within the international trading system. WTO is the global organization deals with the rules of trade among nations. WTO is the biggest reform of international trade for supporting economic development and promoting relations among nations. The current study was made on WTO rules and trade policy on global agriculture and also analyzed the percentage share of agricultural exports and imports with the world merchandise trade along the continents. The methodologies used

to analyze the data were CAGR formulae, Delphi survey method and meta-analysis. The study analyzed the trends, growth rate, stability and elasticity of agricultural exports and imports along the continents across the world. The global agricultural trade policies of different countries and effects of trade policies on future vision were assessed.

The study analyzed the importance of WTO trade policies in the global agriculture trade. Uruguay round negotiations provided a framework on long term reforms and domestic trade policies. In WTO, Doha round launched for reducing tariffs. Bali conference expanded the general services to rural development, poverty alleviation and food security. WTO conducted Nairobi conference to protect domestic policies. But the present issue of US and China trade war affects the global economy by increasing the tariffs on commercial commodities. The study found that world shared nearly equal 8% of agricultural trade with the global merchandise trade. Favorable trade in the agricultural products had been noticed in the European and American continents whereas the negative trade balance has been noticed in the Asian and African continent. This is because of existence of the highest populated countries in the Asian continent and poor agricultural performance due to adverse climatic conditions such as drought in the African continent. Total merchandise trade was high in the Asian continent due to the existence of highly populated countries such as China and India. Agricultural exports were observed to be more in European continent followed by America and Asia. However, agricultural imports were seen to be more in the European continent followed by the Asia and America during the period of 1990-91 to 2017-18. The study found that the trends have shown the Europe exported more agricultural commodities in the world followed by the Asia. However, Europe imported more agricultural commodities followed by the American continent in the world during 1990-91 to 2017-18. Industrialization, preference given to non- agricultural commodities, domination of service sectors led to the agricultural commodities importing in the Europe and American continents. The study found that growth rate of the agricultural exports was greater than the imports in the Asian and European continent whereas, the reverse trend had seen in the American and African continent. There was the existence of stability in the agricultural exports and imports. The study found that the exports price elasticity of agricultural products in Europe were marginally higher than imports. During the period of 1990-91 to 2017-18, the export and import elasticity's of world agricultural commodities were found to be equal. Agricultural commodities trade was shown negative growth when compared to previous year in the Brazil and Argentina of the American continent and Angola of the African continent. This is due to the trade in those countries were highly preferred non- agricultural commodities such as crude petroleum, vehicles, pharmaceuticals and machinery equipments etc., rather than agricultural commodities.

Suggestions:

African continent had shown very poor performance in agricultural trade when compared to Asia, America and Europe due to droughts and adverse climatic conditions. Government should encourage precision farming and advanced green house technologies in the African continent. Tariffs and subsidies increase the price of foreign goods when compared to domestic goods, lead to reduce imports. Imbalance created in the trade by the tariffs and subsidies. Hence, USA and China imposed high tariff rates, which affect the whole global economy. WTO has to take an action for balancing the trade smoothly and freely. Currently, developed countries in WTO members negotiated to remove the export subsidies. But export subsidies supported the own countries GDP, stabilize prices and equalize balance of payments. Hence, integration, equality and co-ordination among the member countries are very important factors to take up any decision on WTO trade policies.

Bibliography

1. World Trade Organization.
2. Karen Lynch. "WTO and the Rules of Global Trade." American Express News (2019).
3. Christophe Gouel. "Trade Policy Co-ordination and Food Price Volatility". *American Journal of Agricultural Economics* 98.4 (2016):1018-1037.

4. Will Martin. "Agricultural Trade Policies and Food Security". *World Bank* (2011).
5. Damodar NG and Sangeetha. "Basic Econometrics". Tata McGraw Hill Publishing Company Ltd, New Delhi (2007): 182-183.
6. WTO and UNEP. "Trade and Climate Change". A report by the United Nations Environment Programme and the World Trade Organization. Printed by WTO Secretariat, Switzerland (2009).
7. Agricultural Policy for Nigeria, Federal Ministry of Agriculture, Water Resources and Rural Development, Abuja.
8. Agricultural Policy, US department of the state, United States of America.
9. Anonymous. "Angola Country Programming Framework". *Food and Agricultural Organization* (2018).
10. Centre for Monitoring Indian Economy.
11. Foreign Trade Policy, Directorate General of Foreign Trade.
12. Kalkuhl M., *et al.* "Food Price Volatility and Its Implications for Food Security and Policy". *Springer Cham* (2016): 978.
13. Observatory of Economic Complexity.
14. Organization for Economic Co-operation and Development.
15. Principles of the Trading system, World Trade Organization.
16. Review of Agricultural Policies South Africa, Organization for Economic Co-operation and Development.
17. Roberto Azevedo. "The WTOs 25 years of achievement and challenges". World Trade Organization (2020).
18. Thanawat Chalkual., *et al.* "Trade Polices and Economic Growth". Deakin Papers on International Business Economics (2013).
19. The Food and Agriculture Organization of the United Nations.
20. United Nations Conference on Trade and Development.
21. United Nations Environment Programme.
22. USDA Foreign Agricultural Service.
23. World Bank Report. "Stronger open trade policies enable economic growth for all". World Bank (2018).

Volume 4 Issue 6 June 2020

© All rights reserved by MB Dastagiri., *et al.*