



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Trade Competitiveness and Market Access Issues in India's Coconut and Cashew Nut Trade

Shaikh Mohd Mouzam*

ABSTRACT

The study examines the changing patterns of international trade in coconut and cashew nut (HS 0801) in India at a macro level and analyses their trade competitiveness. It also examines the market access issues like tariff and non-tariff barriers (NTBs) faced by exports in major markets. The study has found that the share of cashew nut has decreased from 1995-2006 to 2007-2018 and it is a matter of concern. The empirical findings on India's comparative advantage in the export of fresh coconut and cashew nut kernels revealed that among the five major competitors, India had a significant comparative advantage over all the four competitors except Thailand in the EU market for fresh coconuts and Vietnam in the EU market (for cashew nut kernels) during both the periods. However, Vietnam and Cote d'Ivoire had a significant comparative advantage over India in the Asia and US market. Tariffs are zero in major importing markets like the US and EU except in Asia where the tariffs are still imposed and found to be high. Among major importing countries, Japan has imposed the highest number of notifications (167 NTMs) on India's total imports since 2003 while US has imposed a total of "123" NTMs and EU have imposed 69 notifications but it has imposed more of TBT measures (29). SPS measures in agricultural goods do not involve technological prowess but it only takes into account consumer health and safety issues which can be harmonized as it is good for trading partners. For TBT measures which are mostly driven by technology, India needs to be careful in following the same approach. Future research should concentrate on the impact of NTMs in depth by taking all the stakeholders into consideration and traceability should be brought under the whole process.

Keywords: Revealed comparative advantage (RCA), Unit price, Tariff, Sanitary and phyto-sanitary (SPS), Technical barriers to trade (TBT) measures.

JEL.: F14, F47, Q02, Q17

I

INTRODUCTION

During 1970s and 1980s, Indian plantation crops attained special prominence because of their export orientation and foreign exchange earnings. Since then the share of plantation sector in the export basket of India has decreased drastically and reached a less than one per cent in recent years (Deepika, 2017; Gulati, 1994). It has lost its market share to low cost producers from Asia, Africa and Latin America (Idris *et al.* 2015). In recent years, the European countries started exporting value added products which is also considered as a threat to plantation commodity exports from India. After WTO formation, the tariff barriers have reduced and trade in value added and high quality products have increased but exports are facing risk in terms of

*Department of Economics and Sociology, COBSH, Punjab Agricultural University, Ludhiana-141 004 (Punjab).

meeting the required certifications and also compliance with national and international food safety standards (Aarati *et al.*, 2012; Idris *et al.*, 2015; Deepika, 2015). The recent increase in regional trade agreements or bilateral trade agreements has also brought additional challenges in terms of changes in the direction of trade of food products.

In this context, the study examines the changing patterns of international trade in plantation commodities like coconut and cashew nut (HS 0801) in India at a macro level and identifies the key markets and the major competitors for India's four selected plantation commodities – desiccated coconut (HS 080111), fresh coconut (HS 080119), raw cashew nut (HS 080131) and cashew nut kernels (HS 080132) in the major markets, analyses the trade competitiveness, and also examines the market access issues like tariff and non-tariff barriers (NTBs) faced by Indian plantation commodity (HS 801) exports in major markets.

II

DATA AND METHODOLOGY

The study is based on the database published by FAO (www.fao.org/statistics/en), WITS database for data on exports of select plantation commodities from India and other competing countries. Information on domestic trade policies are obtained from documents produced by Ministry of Commerce and Industry, Government of India, and also from the Commodity Boards of India and that of other countries. The data on production and export quantity from FAO collected for 1995 to 2018 period and from WITS database data was collected from 2007 to 2019.

Trade competitiveness is analysed using revealed comparative advantage (RCA) index.

Revealed Comparative Advantage (RCA) Index

RCA was introduced and popularised by Balassa (1965) to identify a country's weak and strong export sectors. The index measures normalised export shares, with respect to the exports of the same industry in a group of reference countries. The revealed comparative advantage (RCA_{iw}) is calculated as follows:

$$RCA = \ln \left[\left(\frac{x_{iA}}{X_A} \right) / \left(\frac{x_{iB}}{X_B} \right) \right]$$

where, x_{iA} and x_{iB} = values of India's exports of product 'i' and rival country's exports of product 'i' to a particular country group
 X_A and X_B = India's total merchandise exports and rival country's total merchandise exports to a particular country group.

A positive value of RCA is an indication of country's comparative advantage in a particular commodity against the rival country in a selected market.

The study also examines the market access issues like tariff and non-tariff barriers (NTBs) faced by Indian plantation commodity (HS 0801) exports. Data on tariffs is accessed from the WTO website and non-tariff measures (NTMs) like sanitary and phytosanitary (SPS) and technical barriers to trade (TBT) measures were collected from SPS and TBT measures web portal of the Centre for WTO Studies, Indian Institute of Foreign Trade (IIFT), New Delhi.

III

RESULTS AND DISCUSSION

Changing Pattern in Exports of Coconut and Cashew Nut of India: An Overview

The share of plantation commodities exports to total exports of India decreased from 6 per cent in the 1980s to less than one per cent in recent years. Hence it can be observed from the Table 1 that the share of cashew (both shelled and with shell) has decreased from 1995-2006 to 2007-2018. The fall in the share of Cashew is a matter of concern because India is a leading producer, processor, and exporter of shelled cashew nuts in the world. However, exports of fresh coconut and desiccated coconuts showed impressive growth of 41 and 21 per cent from 1995 to 2018 period. Of these two commodities, cashew is both export and import dependent, while coconut is the least export intensive with 0.3 per cent therefore dependent on the domestic markets (Table 2). India has a prominent place in world production for its plantation commodities, as India ranks 2nd and 3rd in cashew and coconut world production. India is a top exporter of fresh coconuts (4th) and shelled cashew nuts (2nd) with a market share of above 10 per cent in the world market. Desiccated coconut and cashew nut with shell have a very minimal presence in the world market which is also a matter of concern (Table 3).

TABLE 1. COMPOSITION OF COCONUT AND CASHEW NUT EXPORTS AND INDIA'S SHARE IN WORLD EXPORTS

Commodities (1)	1995-2006 average (tonnes) and per cent to total exports			2007-2018 average (tonnes) and per cent to total exports			CAGR (1995-2018) per cent (8)
	Exports from India (2)	World exports (3)	Per cent (4)	Exports from India (5)	World exports (6)	Per cent (7)	
Coconuts, desiccated	294.7	265375.1	0.1	4731.67	357987.58	1.32	41.2
Coconuts	984.4	234984.6	0.4	54175.67	710637.92	7.62	21.1
Cashew nuts, with shell	4252.9	371486.4	1.1	5126.17	1142139.58	0.45	1.2
Cashew nuts, shelled	92670.3	216258.7	42.8	105478.67	452879.75	23.29	2.6

TABLE 2. EXPORTS AND IMPORTS OF COCONUT AND CASHEW NUT TO DOMESTIC PRODUCTION AND SHARE OF INDIA IN WORLD EXPORTS

	<i>(per cent)</i>		
	Exports to domestic Production (1995-2018)	Imports to domestic Production(1995-2018)	India's exports to world Exports (1995-2018)
(1)	(2)	(3)	(4)
Coconut	0.3	0.007	2.1
Cashew	17.8	93.5	21.6

TABLE 3. INDIA'S POSITION IN WORLD PRODUCTION AND PRESENCE IN THE MAJOR MARKETS FOR COCONUT AND CASHEWNUT

HS Code	Product	India's share in world production (average of 2014-18)		India's position in world exports (average of 2015-19)		Presence in major import markets (Nos.) with at least 10 per cent of the share (2015-19)	
		(3)	Per cent (4)	(5)	Per cent (6)	(7)	(8)
80111	Coconuts desiccated	11301187 (3rd)	18.5	10th	1.4	3	UAE, Saudi Arabia, and Iran
80119	Fresh Coconuts			4th	14.2	6	USA, UK, UAE, Pakistan, Kuwait and Iran
80131	Cashew nuts, with shell	739985	15.5	10th	0.8	1	Nepal
80132	Cashew nut shelled	(2nd)		2nd	16.3	7	Netherlands, UAE, France, Japan, Belgium, Spain, Saudi Arabia, and South Korea

Average Price Realisation and Direction of India's Exports of Coconut and Cashew Nut

In the case of desiccated coconut, Iran, and UAE but unit price realised is very low and it has experienced better unit price realisation from countries like Kuwait and Egypt (Table 4). Therefore better export opportunities have to be explored in these countries. UAE is the major trading partner of India's fresh coconut but unit price realised was the lowest. The country has experienced better unit price realisation from its neighbouring countries like Afghanistan and Pakistan. Similarly, the Vietnam is the major trading partner of India's cashew nut with shell but the unit price realised was the lowest. Contrary to this it has better price realisation by exporting to Algeria and Nepal. In the case of shelled cashew nut, UAE and USA are the major importers but unit price realisation is low and exports to Japan have experienced better unit price realisation and the highest with 8719 USD per tonne (Table 4).

Competitiveness and Market Access Issues of Coconut and Cashew Nut in Major World Markets: Coconut Desiccated (HS 80111)

India ranks third in the world production of coconut with 18.5 per cent of world production share but has only 1.4 per cent of exports of desiccated coconut and ranks 10th among the world's largest exporters (Table 5). India's exports are concentrated

in the Middle Eastern countries and hence its export share among major importers is minimal especially in US, and EU. Philippines, Indonesia, Sri Lanka, and Vietnam are the major competitors for India. Those countries that do not grow coconuts are also among the major exporters, which reflects the amount of value addition and branding that makes a country a major exporter in the world. The RCA index, a measure of trade competitiveness, has shown that in the export of desiccated coconut all the five major competitors had a significant comparative advantage over India in the EU, Asia, and US markets during 2015-19 (Table 7).

TABLE 4. DIRECTION AND PRICE REALISATION OF COCONUT AND CASHEW NUT EXPORTS OF INDIA

Commodity (1)	Country 1 (2)	Country 2 (3)	Country 3 (4)	Country 4 (5)	Country 5 (6)
Coconut desiccated (HS 80111)	Iran	UAE	Saudi Arabia	Egypt	Kuwait
Per cent share in export (2015-19)	22.6	20.1	10.7	5.3	5.2
Unit price realisation (USD/ton) (2019)	2077	659	2100*	2379	2611
Fresh Coconut (HS 80119)	UAE	Pakistan	Iran	Afghanistan	UK
Per cent share in export (2015-19)	25.9	15.2	11.8	8.1	4.3
Unit price realisation (USD/ton) (2019)	759	1720	681	1596	1083
Cashew nut with shell(HS 80131)	Vietnam	Cote d'Ivoire	Nepal	Sri Lanka	Algeria
Per cent share in export (2015-19)	96.31	1.28	0.98	0.61	0.17
Unit price realisation (USD/ton) (2019)	1265	1900*	2333	1625*	9600*
Cashew nut shelled(HS 80132)	UAE	USA	Japan	Saudi Arabia	Netherlands
Per cent share in export (2015-19)	21.39	16.55	9.62	9.18	9.16
Unit price realisation (USD/ton) (2019)	8143	7798	8719	8393	8117

Note: *indicates 2017 prices.

TABLE 5. GLOBAL TRADE AND DIRECTION OF DESICCATED COCONUT TRADE OF INDIA

Major exporting countries (per cent share)		Major importing countries		Per cent share of India among major importers value (Average in 000 \$) (per cent)
Country (1)	Value (Average in 000 \$) (per cent) (2)	Country (3)	Value (Average in 000 \$) (per cent) (4)	
Philippines	245719.7(36.8)	United States	115447.5(15.7)	217.2(0.2)
Indonesia	142190.3(21.3)	Netherlands	54020.5(7.4)	0.1(0)
Sri Lanka	57405.6(8.6)	Germany	43148.1(5.9)	17.4(0)
Vietnam	43743.4(6.55)	United Kingdom	32411.5(4.4)	96.1(0.3)
Netherlands	40242.3(6.03)	Belgium	31058.3(4.2)	14.4(0)
Singapore	31542.1(4.72)	Russian Federation	30128.9(4.1)	7.7(0)
Germany	21361.5(3.2)	Singapore	29003.9(3.9)	6.5(0)
Malaysia	14521.7(2.17)	Canada	28469.2(3.9)	32.2(0.1)
Belgium	14299.3(2.14)	Australia	25612.3(3.5)	30.8(0.1)
India	9612.8(1.44)	Egypt, Arab Rep.	25299.9(3.4)	507.1(2)
Dominican Republic	4965.9(0.74)	Turkey	24831.8(3.4)	90(0.4)
France	4848.1(0.73)	Brazil	24494(3.3)	303.2(1.2)
Cote d'Ivoire	4579(0.69)	France	22306(3)	62.4(0.3)
United Kingdom	3699.9(0.55)	Poland	19429.7(2.6)	127.1(0.7)
United States	3269.9(0.49)	Spain	14782.8(2)	244.7(1.7)
Thailand	2698.4(0.4)	China	13914(1.9)	9(0.1)
Mexico	2660.3(0.4)	Malaysia	11574(1.6)	0.4(0)
Austria	2625.7(0.39)	South Africa	9864.9(1.3)	75.2(0.8)
Czech Republic	1767.7(0.26)	Pakistan	9647.2(1.3)	20.6(0.2)
Poland	1722.6(0.26)	Japan	9510.6(1.3)	93.3(1)

Fresh Coconut (HS 80119): Unlike the exports of desiccated coconut, fresh coconut ranks 4th among the world's largest exporters with a 14 per cent of world exports. It has significant presence in the major importing markets like USA, EU and Middle East countries. However, India is losing position in the world markets for fresh coconut to its major competitors like Indonesia, Thailand, and Vietnam in recent years (Table 6). In the exports of fresh coconut, among the five major competitors, India had a significant comparative advantage over all the four competitors except Thailand in the EU market during 2015-19, whereas in Asia market, India has a comparative advantage over Thailand, Malaysia and Singapore. India has gained a comparative advantage only over Mexico during the 2015-19 period and lost comparative advantage over Vietnam in the 2015-19 period in US market (Table 7).

TABLE 6. GLOBAL TRADE AND DIRECTION OF FRESH COCONUT TRADE OF INDIA

Major exporting countries (per cent share)		Major importing countries (per cent share)		Per cent share of India among major importers Value (Average in 000 \$) (per cent)
Country (1)	Value (Average in 000 \$)(per cent) (2)	Country (3)	Value (Average in 000 \$)(per cent) (4)	
Indonesia	123533.9(27.7)	China	124735.2(28.1)	2074.9(1.7)
Thailand	99433.1(22.3)	Thailand	63018.3(14.2)	0.9(0)
Vietnam	66288.9(14.8)	United States	49671.7(11.2)	2366.2(4.8)
India	64213.9(14.4)	Malaysia	33515.7(7.5)	1874.6(5.6)
Netherlands	15790.2(3.5)	Hong Kong, China	21937.9(4.9)	541(2.5)
Hong Kong, China	11543.4(2.6)	United Kingdom	15939.4(3.6)	2750.4(17.3)
Mexico	9350.8(2.1)	Singapore	14179.7(3.2)	426(3)
Sri Lanka	7200.5(1.6)	Netherlands	13658.3(3.1)	203.2(1.5)
Cote d'Ivoire	6630.7(1.5)	United Arab Emirates	11582.6(2.6)	9473.6 (81.8)
Guyana	5952.8(1.3)	Germany	11262.3(2.5)	36.9(0.3)
Spain	5886.8(1.3)	Canada	8504.7(1.9)	622.9(7.3)
Malaysia	5188.9(1.2)	Australia	7409.6(1.7)	419.5(5.7)
United Kingdom	2806(0.6)	Italy	5861.6(1.3)	170.9(2.9)
United States	2284(0.5)	Spain	4998.9(1.1)	261.6(5.2)
Philippines	2166.4(0.5)	France	4842(1.1)	17.6(0.4)
France	2140.4(0.5)	Russian Federation	3508.7(0.8)	70(2)
Belgium	1952.9(0.4)	Saudi Arabia	3413.3(0.8)	1257.8(36.9)
Singapore	1738.1(0.4)	Pakistan	3252.2(0.7)	973.2(29.9)
Nigeria	1669.5(0.4)	Kuwait	2618(0.6)	991.1(37.9)
Germany	1461.4(0.3)	Belgium	2591.2(0.6)	93.2(3.6)

Cashew Nut with Shell/Raw Cashew Nut (HS 80131)

India ranks second in the world production of cashew nuts having 15.5 per cent of share of world production and but exports are 0.8 per cent (10th largest exporter). India is also the second largest importer of raw cashew nut mainly from West African countries like Tanzania and Ghana the two largest exporters of the world for further processing and re-exports. India has significant presence only in Nepal and in major importer like Vietnam has only a minor and negligible presence (Table 8). In the export of raw cashew nut, all the five major competitors had a significant

comparative advantage over India in the EU, Asia, and USA markets during 2015-19. However, it can be observed that India had lost comparative advantage over the Netherlands and Italy in the EU market from 2010-14 to the 2015-19 period (Table 10).

TABLE 7. INDIA'S REVEALED COMPARATIVE ADVANTAGE INDICES OF DESICCATED AND FRESH COCONUT CONCERNING ITS COMPETITORS IN DIFFERENT MARKETS

Competitors (1)	RCA index		Competitors (4)	RCA index	
	2010-14 (2)	2015-19 (3)		2010-14 (5)	2015-19 (6)
Exports of desiccated coconut to EU 27			Exports of fresh coconuts to EU 27		
Philippines	NA	-6.8	Netherlands	0.1	0.8
Indonesia	-6.6	-5.5	Thailand	-0.2	-1.3
Netherlands	-3.4	-2.2	Spain	0.4	1.0
Germany	-1.8	-0.7	United Kingdom	1.5	1.8
Belgium	-3.4	-1.4	France	2.7	2.3
Exports of desiccated coconut to Asia			Exports of fresh coconuts to Asia		
Indonesia	-2.2	-2.2	Indonesia	-0.4	-0.2
Philippines	NA	-3.04	Vietnam	-3.3	-0.1
Sri Lanka	-6.2	-5.34	Thailand	1.9	0.3
Vietnam	-4.0	-1.06	Malaysia	1.8	2.44
Malaysia	-0.1	-0.24	Singapore	2.3	2.91
Exports of desiccated coconut to US			Exports of fresh coconuts to US		
Philippines	NA	-7.5	Thailand	-3.6	-3.43
Sri Lanka	-7.1	-7.2	Mexico	-0.4	0.10
Dominican Republic	-5.9	-5.5	Vietnam	0.1	-0.34
Mexico	-1.2	-0.6	Philippines	NA	-2.00
Vietnam	-1.9	-1.9	Spain	10.3	-0.93

TABLE 8. GLOBAL TRADE AND DIRECTION OF RAW CASHEW NUT TRADE OF INDIA

Major exporting countries (per cent share)		Major importing countries		Per cent share of India among major importers Value (Average in 000 \$) (per cent) (5)
Country (1)	Value (Average in 000 \$) (per cent) (2)	Country (3)	Value (Average in 000 \$) (per cent) (4)	
Cote d'Ivoire	867030.6(44)	Vietnam	1764737(54.5)	15987.8(0.91)
Ghana	439540.3(22.3)	India	1404087.7(43.4)	NA
Tanzania	221236.3(11.2)	Brazil	18567.9(0.6)	0(0)
Indonesia	107297.7(5.4)	Saudi Arabia	13298.4(0.4)	0.6(0)
Burkina Faso	105806.6(5.4)	China	5183(0.2)	0(0)
Benin	76112.8(3.9)	Belgium	4590.4(0.1)	0(0)
Nigeria	57422.6(2.9)	Afghanistan	2972.7(0.1)	0(0)
Senegal	21362.5(1.1)	Indonesia	2692.4(0.1)	0(0)
Netherlands	18324.4(0.9)	Canada	2423.1(0.1)	1.3(0.1)
India	16600.3(0.8)	Sri Lanka	2309.8(0.1)	101(4.4)
Mozambique	12392.6(0.6)	United Kingdom	1848.5(0.1)	0.1 (0.01)
Myanmar	5162.3(0.3)	United States	1688.2(0.1)	9.7(0.6)
Togo	4562.9(0.2)	Singapore	1244.3(0.04)	20.4(1.6)
Guinea	3384.3(0.2)	Belarus	1181(0.04)	0(0)
Thailand	2716.7(0.1)	South Africa	922.3(0.03)	0(0)
Madagascar	1772(0.1)	Nepal	793(0.02)	162.8(20.5)
Gambia, The	1756.2(0.1)	Spain	615.6(0.02)	0(0)
Mali	1743.5(0.1)	Malaysia	580.7(0.02)	1.7(0.3)
Vietnam	1269.9(0.1)	Netherlands	576.4(0.02)	0(0)
United States	1246.1(0.1)	Bahrain	556.4(0.02)	0(0)

Cashew Nut Shelled/ Cashew Nut Kernels (HS 80132)

Unlike the exports of raw cashew nut, cashew nut kernels exports are the 2nd largest exporter in the world with 16.3 per cent of the total world exports. More than 80 per cent of cashew nut produced is consumed within and only 18 per cent of the produce is currently exported. India has presence in major import markets like USA, EU and UAE. European countries like Germany and Netherlands are the re-exporters of the commodity (Table 9). In the exports of cashew nut kernels or shelled cashew nuts, the country has depicted comparative advantage over all the four major competitors except Vietnam in the EU market during both the periods. However, Vietnam and Cote d'Ivoire had a significant comparative advantage over India in the Asia market. In the US market, again Vietnam and Cote d'Ivoire had a significant comparative advantage over its main competitors like India, Brazil, and Thailand. However, India lost a comparative advantage over Indonesia from 2010-14 to the 2015-19 period in the US market (Table 10).

TABLE 9. GLOBAL TRADE AND DIRECTION OF CASHEW NUT KERNELS TRADE OF INDIA

Major exporting countries (per cent share)		Major importing countries (per cent share)		Per cent share of India among major importers Value (Average in 000 \$) (per cent)
Country (1)	Value (Average in 000 \$) (per cent) (2)	Country (3)	Value (Average in 000 \$) (per cent) (4)	
Vietnam	2900755.2(64)	United States	1329689.6(32.7)	122659.5(9.2)
India	741367.8(16.3)	Germany	450699.1(11.1)	24050.1(5.3)
Netherlands	263020.7(5.8)	Netherlands	360800(8.9)	67909.9(18.8)
Germany	151757.2(3.3)	United Kingdom	184777.5(4.5)	14386.8(7.8)
Brazil	116733.3(2.6)	UAE	160889.5(3.3)	14386.8(98.6)
Cote d'Ivoire	67114(1.5)	Australia	129760.7(3.2)	1329.8(1)
Indonesia	58205.2(1.3)	Canada	113310.2(2.8)	3870(3.4)
Belgium	49060.8(1.1)	France	104132.9(2.6)	18080.2(17.4)
Ghana	39287.4(0.9)	Japan	91412.3(2.3)	71303.7(78)
United Kingdom	18453.1(0.4)	Belgium	91079.8(2.2)	20964.3(23)
Italy	11194.9(0.2)	Thailand	75091.1(1.8)	38(0.1)
Thailand	11069.3(0.2)	Vietnam	64777.6(1.6)	2742.8(4.2)
Singapore	8591.9(0.2)	Spain	62538.2(1.5)	25607.6(40.9)
Myanmar	7755.6(0.2)	Italy	61756.9(1.5)	4146.4(6.7)
Lithuania	7585.2(0.2)	Saudi Arabia	51481(0.8)	2870.6(89.6)
United States	7569.9(0.2)	Russian Federation	49577.8(1.2)	1322.6(2.7)
Burkina Faso	7331.4(0.2)	Poland	45235.4(1.1)	2870.6(6.3)
Nigeria	6877.2(0.2)	China	39279.5(1)	396.1(1)
Tanzania	6788.9(0.1)	Israel	36638.4(0.9)	3620.5(9.9)
Austria	6690.7(0.1)	India	35595.2(0.9)	0(0)

Market Access Issues (Tariff and NTMs):

Tariffs are zero in major importing markets like USA and EU except in Asia where the tariffs are still imposed (Table 11). The plantation commodities in raw form from the less developed countries were allowed free access to the markets of the developed countries but if the exporting countries are attempting to upgrade their

TABLE 10. INDIA'S REVEALED COMPARATIVE ADVANTAGE INDICES OF RAW CASHEW NUT WITH RESPECT TO ITS COMPETITORS IN DIFFERENT MARKETS

Competitors (1)	RCA index		Competitors (4)	RCA index	
	2010-14 (2)	2015-19 (3)		2010-14 (5)	2015-19 (6)
Exports of raw cashew nut to EU 27			Exports of Cashew nut kernels to EU 27		
Burkina Faso	-8.7	-11.1	Vietnam	-1.5	-1.8
Ghana	-5.7	-9.0	Netherlands	2.3	1.1
Netherlands	0.8	-3.4	Germany	2.8	2.8
United Kingdom	-2.0	-2.6	Belgium	3.4	2.1
Italy	0.7	-1.6	Brazil	2.0	1.0
Exports of raw cashew nut to Asia			Exports of Cashew nut kernels to Asia		
Cote d'Ivoire	-8.6	-2.2	Vietnam	-3.6	-0.9
Ghana	-7.2	-3.04	Cote d'Ivoire	-4.7	-4.0
Tanzania	-7.7	-5.34	Indonesia	5.9	2.4
Indonesia	-2.1	-1.06	Ghana	0.1	0.3
Burkina Faso	-7.1	-0.24	Singapore	2.5	3.9
Exports of raw cashew nut to US			Exports of Cashew nut kernels to US		
Ghana	-10.2	-7.5	Vietnam	-1.2	-2.1
Indonesia	-4.1	-7.2	Brazil	0.6	0.3
Mexico	-1.0	-5.5	Indonesia	0.1	-0.2
Nigeria	-5.5	-0.6	Cote d'Ivoire	-0.3	-2.2
Vietnam	-1.8	-1.9	Thailand	2.7	1.4

TABLE 11. TARIFF RATES IMPOSED BY MAJOR IMPORTERS ON COCONUT AND CASHEW NUT PRODUCTS FOR THE YEAR 2019

Competitor/Importer/ products (1)	European Union				Asia				United States (US)			
	DC (2)	FC (3)	RCN (4)	CNK (5)	DC (6)	FC (7)	RCN (8)	CNK (9)	DC (10)	FC (11)	RCN (12)	CNK (13)
Belgium	0	0	0	0	0	5	30	5	0	0	0	0
Brazil	0	0	0	0	22.5	17.5	2.5	5	0	0	0	0
Burkina Faso	0	0	0	0	0	NA	30	5	0	0	0	0
Cote d'Ivoire	0	0	0	0	5	8.8	21.2	10	0	0	0	0
Dominican Republic	0	0	0	0	5	5	NA	NA	0	0	0	0
France	0	0	0	0	3.6	5	0	9	0	0	0	0
Germany	0	0	0	0	2.5	4	2.5	8.6	0	0	0	0
Ghana	0	0	0	0	4	5	17.5	5	0	0	0	0
India	0	0	0	0	6.6	12.1	9.5	6.5	0	0	0	0
Indonesia	0	0	0	0	8.4	11.9	17	7.2	0	0	0	0
Italy	0	0	0	0	23	5	0	10	0	0	0	0
Malaysia	0	0	0	0	10.4	3.6	18.3	6	0	0	0	0
Mexico	0	0	0	0	0	3	0	NA	0	0	0	0
Netherlands	0	0	0	0	0	4.3	1.7	10.8	0	0	0	0
Nigeria	0	0	0	0	0	7	12.7	10.7	0	0	0	0
Philippines	0	0	0	0	8.4	10.7	0	1.7	0	0	0	0
Singapore	0	0	0	0	21	11.7	14.4	14	0	0	0	0
Spain	0	0	0	0	3.3	3.7	0	10	0	0	0	0
Sri Lanka	0	0	0	0	12.9	15.9	12.5	7	0	0	0	0
Tanzania	0	0	0	0	NA	5	21.7	12.1	0	0	0	0
Thailand	0	0	0	0	13.8	9.67	1.7	9.7	0	0	0	0
United Kingdom	0	0	0	0	8.6	11	13	5	0	0	0	0
Vietnam	0	0	0	0	14	12	10.9	7.7	0	0	0	0

Note: DC-desiccated coconut; FC-fresh coconut; RCN-raw cashew nut; CNK-cashew nut kernel.

position in the value addition chains, they regularly face tariff escalations from developed countries markets (Yeats, 1979). After the formation of WTO and Agreement on Agriculture, the tariff as a trade barrier has lost its importance but there is proliferation of NTMs in developed countries. The non-tariff barriers (NTBs) or Non-tariff measures (NTMs) refer to those measures not related to a tariff. The terms non-tariff barriers (NTBs) or non-tariff measures are usually used interchangeably. Among major importing countries, Japan has imposed the highest number of notifications (167 NTMs) on India's total imports since 2003 while USA has imposed a total of "123" NTMs and EU has imposed 69 notifications but it has imposed more of TBT measures (29) (Table 12). Majority of the SPS measures are imposed with an objective of food safety and plant protection by major trading partners and TBT measures were imposed with an objective of human health and safety, consumer protection, and technical regulation (Tables 13 and 14), these results are in consonance with Kallummal (2012). SPS measures in agricultural goods do not

TABLE 12. NUMBER OF NON-TARIFF MEASURES (NTMS) IMPOSED BY DIFFERENT COUNTRIES ON COCONUT AND CASHEW NUT EXPORTS OF INDIA FROM 2003 TO 2018

(1)	SPS (2)	TBT (3)	Total (4)
European Union	40(58)	29(42)	69
GCC Countries	4(67)	2(33)	6
Japan	158(95)	9(5)	167
Singapore	2(67)	1(33)	3
Sri Lanka	3(100)	0(0)	3
United States	103(84)	20(16)	123
Vietnam	21(91)	2(9)	23

Note: Figures in parentheses indicate percentage to the total.

TABLE 13. NUMBER OF SPS MEASURES IMPOSED BY DIFFERENT COUNTRIES ON COCONUT AND CASHEW NUT EXPORTS OF INDIA FROM 2003 TO 2018

Country/SPS measure (1)	Number of notification from 2003 to 2018 (2)
European Union	40
Food safety	35
Plant protection	5
GCC Countries	4
Food safety	4
Japan	158
Food safety	150
Plant protection	8
Singapore	2
Food safety	2
Sri Lanka	3
Food safety	2
Plant protection	1
United States	103
Food safety	85
Plant protection	18
Vietnam	21
Food safety	11
Plant protection	10

TABLE 14. NUMBER OF TBT MEASURES IMPOSED BY DIFFERENT COUNTRIES ON COCONUT AND CASHEW NUT EXPORTS OF INDIA FROM 2003 TO 2018

Country/TBT measure (1)	Number of notification from 2003 to 2018 (2)
European Union	29
Conformity assessment procedures	1
Consumer and environmental protection	1
Consumer protection	2
Food safety	2
Harmonisation with International standards	1
Human health	2
Human health and safety	11
Labelling	1
Quality standards	2
Regulating market	1
Technical regulations/standards	5
GCC Countries	2
Consumer protection	1
Food safety	1
Japan	9
Consumer protection	2
Consumer protection and harmonisation with international standards	1
Consumer protection and Safety	3
Human Health and safety	1
Labelling	1
Technical regulations/standards	1
Singapore	1
Human health	1
United States	20
Consumer protection	7
Consumer protection and human health	1
Environmental protection	2
Human health and safety	10
Vietnam	2
Food safety	1
Human health and safety	1

involve technological prowess but it only takes into account consumer health and safety issues which can be harmonised as it is good for trading partners. For TBT measures which are mostly driven by technology, India needs to be careful in following the same approach. Future research should concentrate on the impact of NTMs in depth by taking all the stakeholders into consideration and traceability should be brought under the whole process.

IV

CONCLUSION

India ranks third in the world production of coconut with 18.5 per cent of world production share but has only 1.4 per cent of exports of desiccated coconut and ranks tenth among the world's largest exporters and exports of fresh coconut ranks fourth among the world's largest exporters with a 14 per cent of world exports. India ranks

second in the world production of cashew nuts having 15.5 per cent of the share of world production and but exports are 0.8 per cent (10th largest exporter). India has a significant presence in the major importing markets like US, EU and Middle East countries for fresh coconut and cashew nut kernels. However, India is losing position in the world markets for fresh coconut to its major competitors like Indonesia, Thailand, and Vietnam in recent years. The product-wise analysis of coconut and cashew nut export has shown that India's major importing partners for most of the products are the neighbouring countries, like Asian and Middle East countries. The unit price realisation from these product exports to these countries has been found much lower as compared to the European countries, the US and UAE.

The empirical findings on India's comparative advantage in the export of coconut and cashew nut to selected markets reveal that for fresh coconut, among the five major competitors, India had a significant comparative advantage over all the four competitors except Thailand in the EU market during 2015-19. In the Asia market, India has a comparative advantage over Thailand, Malaysia, and Singapore. India has gained a comparative advantage only over Mexico during the 2015-19 period and lost comparative advantage over Vietnam in the 2015-19 period in the US market. In the exports of cashew nut kernels, the country has depicted comparative advantage over all the four major competitors except Vietnam in the EU market during both the periods. However, Vietnam and Cote d'Ivoire had a significant comparative advantage over India in the Asia and US market. India lost a comparative advantage over Indonesia from 2010-14 to the 2015-19 period in the US market. Tariffs are zero in the major importing markets like the US and EU except in Asia where the tariffs are still imposed and found to be high. Among major importing countries, Japan has imposed the highest number of notifications (167 NTMs) on India's total imports since 2003 while the US has imposed a total of "123" NTMs and EU have imposed 69 notifications but it has imposed more of TBT measures (29). SPS measures in agricultural goods do not involve technological prowess but it only takes into account consumer health and safety issues which can be harmonised as it is good for trading partners. For TBT measures which are mostly driven by technology, India needs to be careful in following the same approach. There is a need of higher investment to develop infrastructure for testing and certification in terms of international standards. Future research should concentrate on the impact of NTMs in depth by taking all the stakeholders into consideration and traceability should be brought under the whole process.

REFERENCES

- Aarati, L.R.; Shiv Kumar, Digvijay Singh Negi and Dharam Raj Singh (2012), "Prevailing Standards and Dimensions Governing Sanitary and Phytosanitary Compliance in Indian Black Pepper Supply Chain", *Agricultural Economics Research Review*, Vol.25, No.1.
- Ballasa, Bela (1965), "Trade Liberalisation and Revealed Comparative Advantage", *The Manchester School*, Vol.33, No.2.

- Deepika, M.G. (2015), *Export Performance and Factors Affecting Competitiveness of Plantation Commodities in India*, Discussion Paper No.45, NRPPD, Centre for Development Studies, Thiruvananthapuram.
- Deepika, M.G. (2017), "Export Performance and Factors Affecting Competitiveness of Plantation Commodities in India", *Indian Journal of Agricultural Economics*, Vol.72, No.4, October-December, pp.555-575.
- Gulati, Ashok (1994), *Export Competitiveness of Selected Agricultural Commodities*, APEDA, NCAER, New Delhi.
- Idris, S.; A. Singh and K.V. Praveen (2015), "Trade Competitiveness and Impact of Food Safety Regulations on Market Access of India's Horticultural Trade", *Agricultural Economics Research Review*, Vol.28 (347-2016-17179), pp.301-309.
- Kallummal, M., (2012), *SPS Measures and Possible Market Access Implications for Agricultural Trade in the Doha Round: An Analysis of Systemic Issues*, ARTNeT, Working Paper Series, No.116, pp.6-16.
- Yeats, A.J. (1979). *Trade Barriers Facing Developing Countries: Commercial Policy Measures and Shipping*, Springer.