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Export Performance and Factors Affecting Competitiveness of Plantation Commodities in India

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ABSTRACT

India is losing export competitiveness in plantation commodities to low cost producers in Asia, Africa and Latin America and also to European countries who export value added products which is posing a threat to plantation sector in India. While the post-liberalisation scenario is seen more favourable for trade in value added food products, India is also facing risks in terms of meeting the required certifications and international food safety standards. The proliferation of regional and free trade agreements has led to changes in the direction of trade in plantation commodity exports causing additional challenges. In this context, the study examines the changing scenario of plantation exports of India, India's current position in major markets, prices realised for India's plantation products in the world market and factors influencing the competitiveness of plantation commodities for select major plantation commodities of India.

Keywords: Plantation, Export, Competitiveness, Unit export value, Non-tariff barriers, India

JEL: F1, Q17, P42.

I

INTRODUCTION

Plantation crops in India obtained special prominence in the 1970s and 1980s largely due to their export orientation. Given their importance to foreign exchange earnings in those decades, policies were targeted towards promoting them. The share of plantation sector in the export basket of India has considerably declined from 13.09 per cent in 1970-71 to less than 1 per cent in recent years (Joseph, 2010). The presence of small holders in the sector, its role in employment generation especially, among small farmers and women, its concentration in backward areas and its role in ecological and sustainable development calls for policies towards protection and promotion of the sector. India is losing export competitiveness in plantation commodities to low cost producers in Asia, Africa and Latin America and to European countries who export value added products which poses a threat to plantation commodity exports from India. While the post-liberalisation scenario is

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seen favourable for trade in value added and high quality food products, India has also been facing risks for its exports in terms of meeting the required certifications and international food safety standards. The proliferation of regional and free trade agreements has led to changes in the direction of trade in plantation commodity exports of India causing additional challenges. In this context, it is useful to examine the changing scenario of plantation exports of India, India's current position in major markets, nuances in the measurement of competitiveness and factors influencing competitiveness of plantation commodities in the world market.

II

MEASURING EXPORT COMPETITIVENESS: A REVIEW

The concept of competitiveness in international trade literature is seen from different dimensions. The terms competitive advantage and its variant comparative advantage have multiple interpretations which has led to ambiguity in its measurement. Competitiveness could be seen in a static or dynamic sense or could be examined using ex-ante or ex-post analysis. It is common to measure competitiveness using the quantifiable market economic variables like market share of the commodity of competing country in the world market, comparing the prices of commodities of competing countries or with comparison of the costs of production. Revealed Comparative Advantage index[1] developed by Ballasa (1965) is popularly used in international economics for calculating the relative advantage or disadvantage for a country in a certain class of goods or services as evidenced by the trade flows. Earlier studies measuring competitiveness of agricultural commodities in India have also alternatively relied on the use of protection coefficients[2] like the nominal and effective protection coefficients (Gulati *et al*., 1989; Gulati, 1994, Nagoor, 2010; Deepika, 2003; Deepika, 2015). Lower domestic price as against the world price, in a neoclassical market economy framework, would mean the commodity has a price advantage relative to the competitor's price and therefore, has an advantage in the export market. The relevance of using these indicators of competitiveness for plantation commodities unlike for other agricultural commodities is limited due to several reasons. While plantation commodities like coffee, tea or spices are relatively price inelastic (Bhattacharya, 2004; Dindsa, 1981), lower domestic prices as against the competitor may not always make the product competitive. The measure of competiveness also encompasses a variety of factors including quality of the commodity, value addition, product differentiation, reliability, financing arrangements, technological innovation, investment in physical and human capital, institutional and structural environment. Many of these factors are qualitative in nature and research has typically focused on easily quantifiable indicators (Dohlman *et al*., 2003; Kagochi, 2007; Charyulu and Prahadeeshawaran, 2013). The realisation of higher unit export values (UEVs) by a country as against its competitor in the same market can also reflect market power arising due to better quality, higher value

addition or branding while examining competitiveness from another dimension. UEV is frequently used to measure export quality in empirical research to measure export performance and international competitiveness of industries (Aiginger 2000; Dulleck *et al*., 2005). It is possible to distinguish between goods of similar quality by setting a limit on the permitted difference on their UEVs wherein it is possible to draw conclusions from the observed differences in EUVs between industries, countries and over time (Fontagne *et a*l., 2006). Luthje and Nielsen (2002) also offer an interesting critique of UEV as a tool for measuring quality of the product by breaking trade into vertical and horizontal parts. Prices might also reflect international trade costs as stressed in the pricing-to-market literature (Atkeson and Burnstein, 2008). However, in the absence of any other measures of quality, it is common to measure the quality of exported commodities using their unit export values (Szczygielski and Grabowski, 2012).

Yet another factor influencing competitiveness is the changing dynamics associated with the Regional Trade Agreements. There has been a clear increase in the number of Regional and Free Trade Agreements between different trading blocks leading to changes in the direction of trade in commodities. Studies have shown that with change in economic relations of India and Russian Federation, India has lost much of the markets of Russian Federation to most of its traditional products including plantation products. With establishment of Common Market of Eastern and Southern Africa (COMESA) in 1993 India lost markets of Egypt to Kenya for its tea (Nagoor, 2010). There was also an apprehension that the Free Trade Agreement (FTA) between Association of South East Asian Nations (ASEAN) and India will affect Indian plantation sector adversely as ASEAN is a source of low priced plantation products (Joseph, 2009). Their agricultural exports would be competing with crops from India. Competition from Vietnam has already been felt with full intensity. While the implementation of regional agreements has both trade creation and trade diversion effects, it is seen that the FTA between ASEAN and India would lead to more imports as far as plantations commodities are concerned than India exporting to those countries whose prices are below Indian prices (Veeramani and Saini, 2010). Hence, given the large domestic market of India and large scale supply of these commodities in ASEAN countries, the reduction in tariff rates which is likely to be completely implemented before December 2019 would result in increased import competition which would lead to a fall in domestic prices. With the implementation of the India-Sri Lanka FTA, import of pepper from Srilanka to India recorded a nearly six-fold increase during the decade of 2000 (Joseph, 2009). Since India and ASEAN together account for a significant part of the global production of most of the plantation crops, the FTA together with the Agreement on Comprehensive Economic Co-operation leaves scope for constructive co-operation to influence the international price and address the commodity problem, especially, if India works towards innovation and value addition in plantation products (Joseph, 2009). ASEAN strategic relations with the leading powers like Australia, Canada,

China, the European Union, Japan, the Republic of Korea, New Zealand, the Russian Federation and USA can also pose increased competition to Indian exports. ASEAN members together with group's six major trading partners, namely, Australia, China, India, Japan, New Zealand and South Korea began the first round of negotiations on 26-28 February 2013 in Bali on establishment of the Regional Comprehensive Economic Partnership. This, if realised would have a major implication on commodity trade and competitiveness of Indian products. There are also apprehensions that a reduction in import tariffs on tea will adversely affect the Indian tea industry. Through the lenient rules of origin, China's cheaper tea may enter Indian markets through the ASEAN India FTA (Nagoor and Kumar, 2010). It is therefore, essential to examine if India can also make value addition for such low priced imported plantation products, identify the untapped markets and re-export the products as done by the European countries.

III

OBJECTIVES OF THE STUDY

This study examines the changing patterns of international trade in plantation commodities in India at a macro level and identifies the key markets and the major competitors for India's select plantation commodities in the world markets. It analyses the export performance of three selected plantation commodities - coffee, tea and pepper in the major markets and their export price realisation through the coefficient of unit export values (CUEV). The above three commodities are relevant due to their production and export potential for India, their declining competitiveness and their importance to trade with ASEAN countries, especially after the implementation of ASEAN-India Free Trade agreement. The CUEV would help us in understanding the unit export value realised in international markets against the competitor and identify the quality or value addition made by India as against the competitors in the world markets. The study also examines the tariff and non-tariff barriers faced by Indian plantation commodity exports and analyses factors that can directly or indirectly influence their competitiveness.

IV

DATABASE AND METHODS

The study is based on the database published by FAO (www.fao.org/statistics/en), international trade centre (ITC) trademap (www.trademap.org/index.aspx) 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. Data on tariffs, is accessed from the WTO website,

(*http://tariffdata.wto.org/ReportersAndProducts. aspx*). Information on non-tariff barriers is obtained from earlier literature, government reports and international organisations dealing with commodity trade like International Coffee Organisation.

The data on exports of different commodities in value and quantity (in USD and in f.o.b terms) are used for deriving the coefficient of unit export values (CUEV) (export value divided by quantity) as against competing countries. The ratios of unit export values are computed and a matrix is arrived for select major plantation commodities of India in the major market as against the major competitors. The co-efficient of realised unit export value can be written as:

$$CUEV = (EV_{dit} / EQ_{dit}) / (EV_{cit}/EQ_{cit})$$

where,
CUEV = Coefficient of unit export value
EV_{dit}= Exports in value of domestic country, d (India) for commodity i in market t.
EQ_{dit} = Exports in quantity of domestic country, d for commodity i in market t.
EV_{cit} = Exports in value of competing country, c for commodity i in market t.
EQ_{cit} = Exports in quantity of competing country, c for commodity i in market t.

The average of the rows of the matrix shows the average unit export value realised by India against major exporters for the chosen commodity and column averages show the average of the ratio of export value realised in the major markets against the competitors. Three major plantation commodities namely, coffee, tea and pepper are chosen for analysis, given the production and export potential for India in these commodities, increased value addition that is needed for these commodities to compete in the world markets and the likely changes in the trade than can occur given the importance of these commodities in the trade of ASEAN countries with the complete implementation of the ASEAN India Free Trade Agreement.

V

RESULTS AND DISCUSSION

5.1 *Changing Patterns in Exports of Plantation Commodities of India: An Overview*

The share of plantation exports to total exports of India declined from close to six per cent in the decade of 1980s to less than one per cent in the last decade (Table 1). At the same time the share of plantations in the total agricultural exports also declined from 36 per cent in the 1980s to 12 per cent of the total agricultural exports (FAO statistics, various years). Of the major plantation commodities exported from India, only four commodities have prominence in world markets, viz., tea, cashewnut, cardamom and pepper. The fall in share of tea and cashew in recent decade is a matter of concern (Table 2). Of the plantation crops in India, coffee is heavily dependent on export markets (with 70 per cent of produce exported), followed by 30 per cent for cardamom, 22 per cent for tea, 20 per cent for cashew, 17 per cent for

TABLE 1. PER CENTAGE SHARE OF PLANTATION COMMODITIES IN TOTAL AGRICULTURAL EXPORTS AND TOTAL EXPORTS OF INDIA

(*per cent*)

Share of plantation commodities to total agricultural exports of India			Share of plantation commodities to total exports of India		
1982-91	1992-2001	2002-2011	1982-91	1992-2001	2002-2011
(1)	(2)	(3)	(4)	(5)	(6)
36.42	22.18	12.49	5.49	2.29	0.80

Source: FAOstat for plantation commodity export values from 1982-2011 (http://faostat3.fao.org/faostat-gateway/go/to/download/T/TP/E), United Nations Statistics Division for agricultural exports and total exports value from 1980-2011 (http://unstats.un.org/unsd/trade/imts/annual%.htm).

TABLE 2. COMPOSITION OF EXPORTS OF PLANTATION COMMODITIES AND INDIA'S SHARE IN WORLD EXPORTS

	1982-91 average (in 000 tonnes) and per cent to total exports			1992-2001 average (in 000 tonnes) (per cent to total exports)			2002-2011 average (in 000 tonnes) (per cent to total exports)		
Commodity	Exports from India	World exports	Per cent	Exports from India	World exports	Per cent	Exports from India	World exports	Per cent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Coffee	88485.2	4573063.8	1.93	158715.9	5499622.1	2.89	197301.1	7262219.4	2.72
Tea	202628.9	1107991.5	18.29	173798.2	1363555.5	12.75	206621.1	2019485.7	10.23
Rubber	342.2	3841572.4	0.01	2043.6	4951985.8	0.04	40137	7226568.6	0.56
Cashewnut	39216.6	157796.8	24.85	78134.4	414265.6	18.86	117044.4	960383	12.19
Coconut	73.9	295020.1	0.03	335.2	414033.4	0.08	15585.5	666173.3	2.34
Cardamom	1553.6	36085.1	4.31	2162.9	47703.3	4.53	4653.3	68049.5	6.84
Pepper	44766.3	827832.4	5.41	76692.6	1583819.1	4.84	222535.6	2935998.4	7.58
Cocoa	599.3	2259607	0.03	177.4	3261775.7	0.01	1109.3	4663408.3	0.02
Cinnamon	789	53197	1.48	753	77990.6	0.97	968.8	116306.9	0.83
Clove	9.7	25345.2	0.04	86.6	39439.7	0.22	379.2	50208.9	0.76

Source: FAOstat for plantation crops export quantity from 1982-2011 (http://faostat3.fao.org/faostatgateway/go/to/download/T/TP/E).

pepper and 10 per cent for cocoa. Rubber and coconut are the least export intensive with 5 per cent and 0.16 per cent of export share to domestic production. Those commodities are therefore dependent on the domestic markets. Similarly, cashew, cardamom and cocoa are heavily imported in the last decade either for re-exports or for domestic consumption (Tables 3 and 4). Table 4 also shows India has a prominent place in world production for most of its plantation commodities. India ranks second in tea, third in cardamom, cashew and coconut, fourth in pepper and rubber and sixth in coffee in world production. India is seen in the top exporters list only for tea and cashew with the market share of above 10 per cent in the world market. Cardamom and pepper are the only two other plantation crops to have tapped the export markets moderately. Coffee, rubber, cocoa and coconut have very minimal presence in the world market.

5.2 *Export Performance and Factors Affecting Competitiveness of Select Major Plantation Commodities*

The performance and competitiveness of plantation commodities in India would depend on many domestic and external actors. We analyse three major plantation

TABLE 3. EXPORTS AND IMPORTS OF PLANTATION COMMODITIES TO DOMESTIC PRODUCTION AND SHARE OF INDIA IN WORLD EXPORTS

(*per cent*)

Commodity (1)	Exports to domestic production 2002-2011 (2)	Imports to domestic production 2002-2011 (3)	India's exports to world exports 2002-2011 (4)
Coffee	70.46	9.74	1.79
Tea	22.16	2.43	11.00
Rubber	5.05	11.79	0.49
Cashew	19.87	96.15	25.98
Coconut	0.16	0.01	1.90
Cardamom	29.06	38.00	8.75
Pepper	17.12	1.25	8.09
Cocoa	10.70	118.35	0.05

Source: FAOstat for plantation crops export, import and production quantity from 2002-2011 (http://faostat3.fao.org/faostat-gateway/go/to/download/T/TP/E), ITC trademap for export values of India and world from 2002-2011 (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

TABLE 4. INDIA'S POSITION IN WORLD PRODUCTION AND PRESENCE IN THE MAJOR MARKETS FOR PLANTATION COMMODITIES

Commodity (1)	India's share in world production (average of 2009-11) (2)	India's position in world exports (average of 2002-11) (3)	Presence in major import markets (Nos.) with at least 10 per cent of the share (2002-11) (4)	Among major importing countries (2002-11) (per cent) (5)	Export orientation (2002-11) (per cent) (6)
Tea	2nd (21.9)	4th (11.0)	7 countries	–	22.16
Cardamom	3rd (22.0),	3rd (9.0)	5 countries	6.0	29.0
Pepper	4th (10.5)	4th (8.0)	4 countries	4.23	17.12
Coffee	6th (3.46)	15th (1.7)	only in Italy	–	70.4
Rubber	4th (8.02	14th (0.04)	No	1.5	5.05
Cashew	3rd (16.16)	2nd (25.0)	6 countries	–	20.0
Coconut	3rd (17.7)	9th (1.9)	No	–	–
Cocoa	18th (0.27)	very minute	No	–	10.7

Source: FAOstat for plantation crops export, import and production quantity from 2002-2011 (http://faostat3.fao.org/faostat-gateway/go/to/download/T/TP/E), ITC trademap for export values of India and world from 2002-2011 (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

Figures in parentheses indicate percentage share to total.

commodities, viz., coffee, tea and pepper with respect to their export performance and extent of market penetration in major world markets, realised unit export values, tariff and non-tariff barriers faced by India for those commodities which could directly or indirectly affect their competitiveness.

5.2.1 *Coffee*

India ranks sixth in the world production of coffee (3.4 per cent of world production share) but has only 1.7 per cent of world exports ranking 15th among the exporters of coffee in the world (Table 4). Coffee is the most export-oriented of plantation crops in India with 70 per cent of domestic production of coffee being exported. Currently India's exports are concentrated in the European and Middle eastern countries, largely Italy, Germany, Belgium, Spain, Kuwait, Jordan and also the Russian provinces. Though India has one of the best varieties of shade grown coffees known for its strong blend (especially the Indian robusta), the major coffee markets of the world are not exploited by India. India's export share among major importers is minimal, specifically in North America, Japan and the western European markets (Table 5). Columbia, Honduras, Ethiopia and Guatamela are the major competitors for India for green coffee. Roasted coffee markets are largely dominated by European countries like Switzerland, Germany, Italy, UK, Netherlands, Belgium and Spain. Poor value addition to Indian coffee even at a primary level is reflected out of the fact that nearly 70 per cent of coffee exported by India is neither roasted nor decaffeinated (report by Ministry of Agriculture, Government of India and IIFT, New Delhi). Germany, Belgium, Italy, Sweden and Denmark are the countries with highest form of re-exports of roasted coffee (International Coffee Organisation, 2012). Those countries who grow no coffee are also among the major exporters. This reflects the amount of value addition and branding that can make a country a major player in coffee markets of the world.

TABLE 5. GLOBAL TRADE IN COFFEE AND DIRECTION OF COFFEE TRADE OF INDIA

Major exporting countries (per cent share)		Major importing countries		Per cent share of India among major importers	Export destination of India and India's share in the commodity export		Countries imported from	
Country	Value (Average in 000 $) (per cent)	Country	Value (Average in 000 $) (per cent)	Value (Average in 000 $) (per cent)	Country	Value (Average in 000 $) (per cent)	Country	Value (Average in 000 $) (per cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Brazil	3435655 (20.33)	USA	3612470 (20.9)	7561.6 (0.21)	Italy	92303.1 (30.59)	Vietnam	17194.3 (45.37)
Colombia	1533722 (9.08)	Germany	2547772 (14.74)	44069.9 (1.73)	Germany	40449.7 (13.41)	Indonesia	11869.1 (31.32)
Vietnam	1379944 (8.17)	France	1132833 (6.55)	10113 (0.89)	Belgium	24313 (8.06)	Uganda	4352.5 (11.49)
Germany	1374236 (8.13)	Japan	1074367 (6.22)	5404.7 (0.5)	Spain	14816.7 (4.91)	Côte	1135
Italy	736562.4 (4.36)	Italy	1000374 (5.79)	94949.3 (9.49)	Jordan	8546.3 (2.83)	d'Ivoire Kenya	(3.00) 383.4 (1.01)
Belgium	663570.5 (3.93	Belgium	757657.6 (4.38)	13804.2 (1.82)	Slovenia	8350 (2.77)	Italy	382.2 (1.01)
Indonesia	617291.9 (3.65)	Canada	694295.6 (4.02)	2860.8 (0.41)	Kuwait	7731.8 (2.56)	China	323.8 (0.85)
Switzerland	566766.2 (3.35)	Spain	552513.1 (3.2)	17612.6 (3.19)	Greece	7418.9 (2.46)	United Kingdom	274.6 (0.72)

(*Contd.*)

TABLE 5. (CONCLD.)

Major exporting countries (per cent share)		Major importing countries		Per cent share of India among major importers	Export destination of India and India's share in the commodity export		Countries imported from	
Country (1)	Value (Average in 000 $) (per cent) (2)	Country (3)	Value (Average in 000 $) (per cent) (4)	Value (Average in 000 $) (per cent) (5)	Country (6)	Value (Average in 000 $) (per cent) (7)	Country (8)	Value (Average in 000 $) (per cent) (9)
Peru	560596.9 (3.32)	United Kingdom	489964.8 (2.83)	2685.3 (0.55)	Russian Federation	6621.2 (2.19)	Germany	208.9 (0.55)
Guatemala	540452.5 (3.20)	Netherlands	474832 (2.75)	4518.8 (0.95)	Australia	6260.5 (2.08)	United States of America	177.5 (0.47)
USA	527567.1 (3.12)	Switzerland	354478.9 (2.05)	18604.7 (5.25)	Switzerland	5804.9 (1.92)	Burundi	174.1 (0.46)
Honduras	488331.5 (2.89)	Sweden	336368.6 (1.95)	636.2 (0.19)	France	5501.7 (1.82)	Ghana	142.5 (0.38)
Ethiopia	423917.4 (2.51)	Austria	292974.3 (1.70)	3711.9 (1.27)	United States of America	5470.9 (1.81)	Mexico	128.7 (0.34)
Mexico	326806 (1.93)	Poland	250489.8 (1.45)	1192.9 (0.48)	Netherlands	5274.5 (1.75)	Rwanda	119.6 (0.32)
India	301706.6 (1.79)	Korea	230914.4 (1.34)	1798.3 (0.78)	Croatia	5056 (1.68)	Taipei, Chinese	102.9 (0.27)

Source: ITC Trademap for export and import values of India and world from 2002-2011 (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

The coefficient of unit export value for Indian coffee (for green coffee and roasted coffee) in the international markets is shown in Tables 6 and 7. On an average the coefficient is less than one. In predominant markets the export value realisation of Indian coffee has been low. Competitors like Brazil and Columbia have received higher prices than India. Similarly, looking into the major coffee markets, India's price realisation is poor in most of the European countries of Netherlands, Spain, UK and Canada. Two members of ASEAN, Vietnam and Indonesia are among the major exporters. India has realised better prices as compared to Vietnam in almost all the markets. However, India may be posed with threat of imports of low priced coffee from both these partners with agreed reduction in tariffs under FTA in the year 2019. Coffee is placed under the 'Special Product' category in the ASEAN India Free trade agreement where India has agreed to reduce tariff in a gradual phase starting from the base tariff of 100 per cent to 45 per cent in December 2019. India may have to protect itself by using the special safeguard measures which are provisioned for products under special category or heavily innovate and create value in the lines of European countries to tap the less exploited markets of northern America and Europe.

Though worthwhile, it may be difficult to explore which factor has specifically contributed to lower price realisation for coffee in most of the markets. One can identify the overall factors that would retard competitiveness of Indian coffee in the world market. Columbia which is a major producer of coffee has wide variety of coffees and brands which have worldwide reference. For example, the well known

TABLE 6. CO-EFFICIENT OF UNIT EXPORT VALUE (FOR INDIA AGAINST THE COMPETITORS IN MAJOR IMPORTING MARKETS) FOR COFFEE GREEN

Competitor/ Market	USA	Germany	Japan	Italy	Belgium	France	Spain	Canada	Switzerland	United Kingdom	Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Brazil	0.91	0.82	0.81	0.71	0.77	0.84	0.62	0.71	0.89	0.78	0.79
Colombia	0.65	0.62	0.59	0.54	0.58	0.63	0.43	0.57	0.68	0.64	0.59
Honduras	0.78	0.75	0.70	0.63	0.65	0.68	0.54	0.62	0.85	0.67	0.69
Vietnam	1.63	1.47	1.44	1.28	1.39	1.51	1.12		1.64	1.45	1.44
Peru	0.71	0.70		0.61	0.61	0.67		0.57		0.61	0.64
Ethiopia		0.83	0.65	0.56	0.76	0.79			0.70	0.57	0.69
Indonesia	0.83		1.18	1.25	1.13			0.53		1.36	1.05
Guatemala	0.71		0.64	0.58	0.65			0.60	0.73		0.65
Uganda		1.07		1.22	1.24		1.01				1.13
Germany					0.61	0.85	0.59			0.63	0.67
Mexico	0.78							0.60	0.75		0.71
Costa Rica	0.71							0.56	0.69		0.65
Nicaragua	0.76						0.51	0.64			0.63
El Salvador		0.73	0.72					0.69			0.71
Netherlands						0.66	0.50			0.56	0.57
Papua New Guinea		0.72	0.66								0.69
Kenya									0.48	0.45	0.46
United Republic of Tanzania			0.64								0.64
Belgium						0.86					0.86
Cote d'lvoire							1.12				1.12
Average	0.85	0.86	0.80	0.82	0.84	0.83	0.72	0.61	0.82	0.77	

Source: coefficient of unit export values obtained by diving unit value for India with unit value of the competitors in various markets, Its computed as the average for the years of 2009, 2010 and 2011 trade statistics from ITC Trade Map. (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

TABLE 7. CO-EFFICIENT OF UNIT EXPORT VALUE (FOR INDIA AGAINST THE COMPETITORS IN MAJOR IMPORTING MARKETS) FOR ROASTED COFFEE

Competitors/ market	France	Germany	USA	Canada	Netherlands	Austria	UK	Italy	South Africa	Egypt	Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Switzerland	0.13	0.47	0.09	0.46	0.20	0.16	0.17	0.07	0.16	1.85	0.38
Germany	0.64		0.51	0.90	1.12	1.39	1.03	0.50	1.32	1.65	1.01
Italy	0.51	0.96	0.41	1.43	0.80	1.26	0.94		0.68	1.95	0.99
UK	0.22	0.49	0.26	0.72	0.57			0.17	0.98	2.66	0.76
Netherlands	0.55	0.84				1.30	1.20	0.47	1.05	1.40	0.97
Belgium	0.52	0.73			1.23		0.90	0.47	1.23		0.85
Spain	0.74	0.47			0.57		0.97	0.12	0.99		0.64
Brazil	0.98		0.56	1.36		0.89		0.48			0.85
France		0.84			0.91		1.26	0.53		1.34	0.98
Czech Republic	0.55	0.97				1.27	1.13				0.98
Poland	0.70	1.03				0.68		0.56			0.74
Austria		1.19			1.22			0.25			0.89
Mexico			0.85	1.86							1.35
Sweden			0.57				0.82				0.70
Colombia			0.45	1.05							0.75

(Contd).

TABLE 7. (CONCLD.)

Competitors/ market (1)	France (2)	Germany (3)	USA (4)	Canada (5)	Netherlands (6)	Austria (7)	UK (8)	Italy (9)	South Africa (10)	Egypt (11)	Average (12)
USA				1.81						2.21	2.01
Portugal				1.16					1.36		1.26
Canada			0.44								0.44
Dominican Republic			0.95								0.95
Ethiopia				1.64							1.64
Luxembourg					0.97						0.97
Denmark					1.11						1.11
Slovakia						1.58					1.58
Honduras						1.68					1.68
Bosnia and Herzegovina						2.03					2.03
Ireland							1.16				1.16
Australia									0.72		0.72
Syrian Arab Republic										1.17	1.17
Jordan										1.20	1.20
UAE										1.31	1.31
Average	0.55	0.80	0.51	1.24	0.87	1.22	0.96	0.36	0.94	1.68	

Columbian Coffee Logo featuring Juan Valdez and his mule has added to the brand's popularity (www.cafedecolumbia.com). Kenya, though not a top producer of coffee sells high priced coffee in two major markets Switzerland and UK (Daily Nation, 2013). While India faces threat from Columbia, Kenya or Ethiopia due to their better quality of coffees, there is also a threat from Brazil in terms of higher yield of coffee, especially for its Robusta variety. According to CECAFE statistics, bean productivity in Brazil increased by 76 per cent from 1990 to 2000 (Cresanta *et al*., nd. accessed from http://www.ico.org/event_pdfs/wcc2/presentations/crestana.pdf.), while coffee productivity in India has remained stagnant (Coffee Board of India, database on Coffee).

There is no major threat of tariffs for Green coffee from major importers. The advelorem duties are almost nil in US, EU, Canada or Japan. Only roasted coffee is subject to an advelorem duty of 7.5 per cent and 10 per cent in Egypt and EU (Table 8). Sanitary and phytosanitary requirements and need for certifications act as major non-tariff barriers for coffee in the liberalised trade regime. Under the IDH umbrella (organisation involved in sustainable trade initiatives) major coffee roasters have set a goal of increasing sustainable coffee sales. In 2009 more than eight per cent of all the green coffee exported worldwide had some form of certification (Technoserve, 2013). In addition to the strong growth of fair trade and organic coffee, the three relatively new coffee standards for certification, UTZ certification, rainforest alliance and Starbucks CAFÉ practices also grew dramatically (International Coffee Organisation, 2012). Speciality coffees which are high quality coffees are getting popular in world coffee markets. Netherlands is a leader with 40 per cent of its coffee being certified.

TABLE 8. TARIFF RATES IMPOSED ON SELECT PLANTATION COMMODITIES BY MAJOR IMPORTERS AND SOME OF INDIA'S TRADING PARTNERS

Commodity/market (1)	Average of AV duties (2)	List of non- AV duties (3)
Roasted Coffee		
Canada	0.0	Nil
Egypt	10.0	Nil
European Union	7.5	Nil
South Africa		[6c/kg]
United States of America	0.0	Nil
Coffee Green		
Canada	0.0	Nil
European union	0.0	Nil
Japan	0.0	Nil
Switzerland	0.0	Nil
Tea		
Egypt	2.0	Nil
European Union	0.8	Nil
Japan	11.7	Nil
Pakistan	10.0	Nil
Russian Federation	0.0	Nil
Saudi Arabia, Kingdom of	0.0	Nil
United Arab Emirates	0.0	Nil
United States of America	1.6	Nil
Cashewnut		
Australia	0.0	Nil
Canada	0.0	Nil
China	20.0	Nil
European Union	0.0	Nil
Japan	0.0	Nil
Russian Federation	5.0	Nil
United States of America	0.0	Nil
Pepper		
European Union	3.0	Nil
Japan	1.7	Nil
Singapore	0.0	Nil
United Arab Emirates	5.0	Nil
USA	0.0	Nil

Source: Tariff rates obtained for 6 digit HS code in the major markets for the select commodities an average of 2009, 2010 and 2011 data from the WTO Tariff download facility. The European Union includes the markets like Germany, Italy, Belgium, France and Spain. http://tariffdata.wto.org/ReportersAndProducts.aspx.

In USA it is 16 per cent and countries like Denmark, Sweden and Norway have passed 10 per cent in terms of certification of coffee (International Trade Center, 2011). Though Brazil's coffee sector currently lacks a scalable model for expanding certification/verification to new farms, Brazil is currently the world leader in exports of sustainably verified or certified coffees because of its large volume of coffee exports. In 2011, Brazil represented 42 per cent of UTZ certified coffee sales globally and 50 per cent of rainforest alliance supply (Technoserve, 2013). The price premium for organic and certified coffee being relatively small in India is acting as another disincentive for certification (Rich *et al*., 2017). Though there are some efforts by organisations like ITC and Coffee Board towards attaining certification of coffee

there is a need to scale up the operation in India (International Coffee Organisation, 2012).

5.2.2 *Tea*

India continues to have a major share in the world exports of tea, despite its exports from India has shown a negative growth in the last decades. Unlike coffee, Indian Tea has significant presence in the major importing markets like Russian Federation, UAE, UK, Iran and USA which ranges from 6 to 18 per cent of their import share (Table 9). India can exploit the markets further in countries of Saudi Arabia, Germany, Japan, Canada and France. However, India is losing position in the world markets for tea in the last decade to its major competitors like Srilanka, Kenya and China is a matter of concern. India is already importing tea from the Asian countries of Nepal, China and Sri Lanka and from Vietnam who is a member of ASEAN (Nagoor and Kumar, 2010).

TABLE 9. GLOBAL TRADE IN TEA AND DIRECTION OF INDIA'S TEA TRADE

Major exporting countries (per cent share)		Major importing countries		Share of India among major importers	Export destination of India and share		Import destination of India	
Country (1)	Value (Average in 000 $) (per cent) (2)	Country (3)	Value (Average in 000 $) (per cent) (4)	Value (Average in 000 $) (per cent) (5)	Country (6)	Value (Average in 000 $) (per cent) (7)	Country (8)	Value (Average in 000 $) (per cent) (9)
Sri Lanka	1002349 (22.36)	Russian Federation	406537.4 (10.08)	86367 (21.24)	Russian Federation	74990.8 (15.22)	Nepal	9581.1 (28.23)
Kenya	717548.4 (16.01)	United Kingdom	337461 (8.36)	54513.8 (16.15)	United Arab Emirates	61916.9 (12.56)	Kenya	7271.8 (21.42)
China	590737.2 (13.18)	United States of America	291005.2 (7.21)	33849.6 (11.63)	United Kingdom	59874 (12.15)	Viet Nam	4941.5 (14.56)
India	492850.7 (11)	Pakistan	215262.4 (5.33)	14500.78 (6.74)	Iran (Islamic Republic of)	31427.1 (6.38)	Indonesia	3709.3 (10.93)
United Kingdom	269943.2 (6.02)	United Arab Emirates	185464.5 (4.6)	44860 (24.19)	United States of America	31292.7 (6.35)	China	1434.3 (4.23)
Germany	161754.3 (3.61)	Japan	182484.5 (4.52)	22686.4 (12.43)	Kazakhstan	27154.3 (5.51)	Sri Lanka	1385.3 (4.08)
Indonesia	137373.9 (3.06)	Saudi Arabia	151973 (3.77)	16521.5 (10.87)	Germany	26781.6 (5.43)	Argentina	1228.7 (3.62)
Vietnam	131504.7 (2.93)	Germany	148118 (3.67)	36045.9 (24.34)	Australia	19715.1 (4)	Iran (Islamic Republic of)	992.8 (2.92 per cent)
United Arab Emirates	107175.7 (2.39)	Canada	125840.2 (3.12)	9316.2 (7.4)	Iraq	16246 (3.3)	Malawi	766.4 (2.26)
Belgium	67602.3 (1.51)	France	124468.5 (3.08)	5878.4 (4.72)	Japan	14154.8 (2.87)	United Kingdom	601.5 (1.77)

Source: ITC trademap for export and import values of India and world from 2002-2011 (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

Looking into coefficient of unit export values (CUEV) matrix for tea, it is seen India has realised better prices against major competitors like China, Kenya, Vietnam and Indonesia with an exception to that of Srilanka (Table 10). Srilanka has realised better prices against India in all its major markets like Russian Federation, U.K, U.S.A., Pakistan, Egypt, UAE, and Saudi Arabia. According to a study by IIFT New Delhi, there is substantial volume of re-exports of tea by countries like UAE, UK, Saudi Arabia and Japan. Only 56 per cent of EU tea imports is sourced directly from developing countries. These markets depend on high re-exports by other EU member countries like UK, Germany, Poland and France. India would therefore, be unable to

TABLE 10. CO-EFFICIENT OF UNIT EXPORT VALUES (FOR INDIA AGAINST THE COMPETITORS IN MAJOR IMPORTING MARKETS) FOR TEA

Competitors/ markets (1)	Russian federation (2)	United Kingdom (3)	USA (4)	Pakistan (5)	Egypt (6)	UAE (7)	Saudi Arabia (8)	Germany (9)	Japan (10)	Iran (11)	Average (12)
Sri Lanka	0.61	0.56	0.70	0.79	0.93	0.80	0.88	1.06	1.50	1.05	0.89
China	1.05	0.91	1.44		1.21	1.14	1.08	1.51	2.27	1.25	1.32
Kenya	0.88	1.09		0.80	0.91	1.16	1.05		2.24	1.18	1.16
Vietnam	1.75			1.17	0.84	1.76	1.52	2.86	2.49	1.64	1.75
Indonesia	1.24	1.29	2.07	1.07	1.23	1.90		2.87	2.53		1.78
Germany	0.44		0.75			0.12				0.70	0.50
UAE	0.62				0.67		0.30			1.28	0.72
Malawi		1.49	2.21	1.06	0.77						1.38
UK			0.36				0.35	1.52	0.42		0.66
Azerbaijan	1.15									1.36	1.25
United Republic of Tanzania		1.13		1.08							1.10
Argentina			3.01					3.35			3.18
Japan			0.23					0.19			0.21
Uganda				1.06	0.94						1.00
Saudi Arabia					0.28					0.90	0.59
Austria								0.80		0.48	0.64
Papua New guinea	1.53										1.53
Poland		0.49									0.49
Ireland		0.73									0.73
South Africa		1.25									1.25
Canada			0.25								0.25
Rwanda				0.88							0.88
Burundi				0.85							0.85
Iran						6.28					6.28
Yemen							0.50				0.50
Oman							0.78				0.78
Netherlands								1.22			1.22
Taipaei									0.88		0.88
Australia									0.65		0.65
USA									0.27		0.27
Average	1.03	0.99	1.22	0.97	0.86	1.88	0.81	1.71	1.47	1.09	

Source: Coefficient of unit export value is obtained by dividing unit value of India by unit value of the competitors in various markets, Its computed as average for the years of2009,2010 and 2011trade statistics from ITC Trade Map. (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

play a direct role in the markets of EU for tea blends (report by Ministry of Agriculture, Government of India and IIFT New Delhi). UAE, UK, Germany and Srilanka seem to be exporting higher priced teas in the major markets of Saudi Arabia and Russia. Dubai has also emerged as a major re-exporter of tea in the recent years. During the past five years the country has garnered a 60 per cent share of USD 99 million global re-export market earning approximately USD 48 million in 2011 (www.worldteanews.com). Dubai's multi commodity center has emerged as one of the world's most important hubs for processing and finishing of teas. It is seen that herbal teas, flavoured teas and fair-trade teas are increasingly becoming popular in EU (report by Ministry of Agriculture, Government of India and IIFT, New Delhi).

Barrier to India's tea exports through tariffs has been minimal or nil in major markets. Japan and Pakistan imposed tariffs on Indian tea to the extent of 11 and 10 per cent respectively (See Table 8). What is of larger concern to India now is the possible negative effect of Free Trade agreement between India and ASEAN. The MFN tariff rates applied by India on tea has to be reduced to 50 per cent in the year 2019 from the base tariff of 100 per cent during the signing of agreement. Indonesia and Vietnam are major tea exporters among the ASEAN countries and together they export around 12 per cent of the world's tea (Nagoor and Kumar, 2010). India also has a huge market for low priced tea and its domestic tea market is expanding. As a net importer of tea from ASEAN India's domestic prices of tea are likely to be further affected with the completion of tariff reductions as per the agreement. Given this situation, India could compete with low priced imports from ASEAN and also China (which can enter India through the lenient rules of origin under ASEAN India FTA) only by adding value and compete in markets, especially of Japan, Saudi Arabia, Germany, Canada and France where India's market share currently is minimal. India can tap the export market of neighbouring Pakistan, which is one of the major tea importers of the world (Table 9), with only improved political relations between two countries.

As seen through one of the earlier studies, non-recognition of tea testing laboratories in India by EU, registration of tea consignment under Bio terrorism ACT of USA are some other non–tariff barriers on tea faced by India. Pesticide residue in Indian tea has been a major cause of concern for India with respect to market access in EU. For example, Darjeeling Gold brand was earlier rejected by Germany because it contained 0.24 mg of tetrafidon per kg which was 24 times the limit set by Germany (Priya *et al*., 2009).With increased stringency in national and international standards the choice of pesticides for use in tea plantations calls for a review of plant protection strategy.

5.2.3 *Pepper*

India ranks fourth in the world production of pepper having 10.5 per cent share of world production and eight per cent of world exports (See Table 4). More than 80 per

cent of pepper produced is consumed within and only 17.2 per cent of the produce is currently exported. India has presence in four major import markets of the world. India has a major presence only in USA and Germany among the major importers. European countries like Germany and Netherlands are re-exporters of the commodity. India has good share of imports of pepper at France, UK and UAE but they are not the major consumers. Netherlands being the third largest importer, India has only a minor presence (Table 11). India's unit export value realisation in almost all the major markets is less than one. India has realised better prices only against Vietnam in almost all the markets and against Indonesia in some of the markets. Therefore, like for tea, there is always the threat of low priced pepper imports to India from Vietnam. India's unit export values are much lower in South Africa, France, Sri Lanka and Netherlands reflecting poor price realisation in all the markets (Table 12). There is a tariff rate of 2 to 5 per cent in UAE, Japan and EU (Refer Table 8). The

TABLE 11. DIRECTION OF PEPPER TRADE OF INDIA

Major exporting countries (per cent share in the world)		Major importing countries		Per cent share of India among major importers	Export destination of India and share		Import destination of India	
Country (1)	Value (Average in 000 $) (per cent) (2)	Country (3)	Value (Average in 000 $) (per cent) (4)	Value (Average in 000 $) (per cent) (5)	Country (6)	Value (Average in 000 $) (per cent) (7)	Country (8)	Value (Average in 000 $) (per cent) (9)
Vietnam	279431 (29.8)	United States of America	193600.3 (21.82)	31716.7 (16.38)	United States of America	31021.5 (40.88)	Sri Lanka	14091.1 (37.58)
Indonesia	129309 (13.79)	Germany	83215.7 (9.38)	4993.7 (6)	United Kingdom	4465.3 (5.88)	Vietnam	12258.1 (32.69)
Brazil	94830.5 (10.11)	Netherlands	46803.6 (5.27)	1545.3 (3.3)	Germany	4093.6 (5.39)	Indonesia	8802.8 (23.48)
India	75890.6 (8.09)	Singapore	40963.3 (4.62)	1023.9 (2.5)	Canada	3635.3 (4.79)	United States of America	819.4 (2.19)
Malaysia	47894 (5.11)	India	37496.1 (4.23)	NA	Italy	3235.1 (4.26)	Brazil	378.6 (1.01)
Singapore	47550.9 (5.07)	Japan	36469 (4.11)	2117.3 (5.81)	Australia	2567.8 (3.38)	China	320.5 (0.85)
Germany	41934.9 (4.47)	France	33044.7 (3.72)	5105.3 (15.45)	Vietnam	2552.1 (3.36)	Madagascar	224 (0.6)
Netherlands	38752.8 (4.13)	United Kingdom	31461.5 (3.55)	5435.2 (17.28)	Japan	1954.4 (2.58)	Singapore	91.7 (0.24)
Sri Lanka	21857.5 (2.33)	United Arab Emirates	22612.7 (2.55)	1751.6 (7.75)	Sweden	1898.3 (2.5)	Ecuador	77.5 (0.21)
United States of America	20006.1 (2.13)	Spain	21623.7 (2.44)	1034.2 (4.78)	United Arab Emirates	1751.6 (2.31)	Malaysia	59.4 (0.16)

Source: ITC trademap for export and import values of India and world from 2002-2011 (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

TABLE 12. CO-EFFICIENT OF UNIT EXPORT VALUE (FOR INDIA AGAINST THE COMPETITORS IN MAJOR IMPORTING MARKETS) FOR PEPPER

Competitors/ markets (1)	USA (2)	Germany (3)	Netherlands (4)	UAE (5)	Japan (6)	UK (7)	Singapore (8)	France (9)	Vietnam (10)	Italy (11)	Average (12)
Viet Nam	1.01	1.10	0.88	1.00	0.99	1.02	1.07	1.17		0.82	1.01
Indonesia	1.14	0.91	0.79	1.07	0.76		0.79	1.00	1.00	0.82	0.92
Brazil	1.19	1.29	0.92	0.86	1.05		0.59	1.21	1.00	0.80	0.99
China	0.76	0.81	0.82	1.36	0.28	0.63	0.69	0.78	1.00		0.79
Malaysia	0.59	1.03		0.93	0.99	0.78	0.98		0.90		0.88
Germany	0.94		0.74			0.64	1.03	0.77		0.47	0.76
Srilanka	0.68	0.81		1.08	0.58						0.79
Netherlands		1.08				0.99		0.83		0.23	0.78
Belgium			1.09			1.26		0.87		0.55	0.94
Madagascar				0.74			1.01	1.43		0.88	1.02
USA				1.45	0.36	0.54	0.19				0.63
South Africa	0.66				0.17	0.63					0.49
Singapore					0.64			0.86	1.00		0.83
France		0.46				0.45				0.31	0.41
Ecuador	0.99										0.99
Austria		0.43									0.43
Italy			1.49								1.49
Spain			1.37								1.37
Thailand			0.85								0.85
Mexico				0.91							0.91
Korea							0.55				0.55
Cambodia									0.93		0.93
UAE									0.92		0.92
Poland										0.60	0.60
Average	0.89	0.88	0.99	1.05	0.65	0.77	0.77	0.99	0.97	0.61	

Source: Coefficient of unit export value is obtained by dividing the unit value of India's exports by unit value of the competitors in various markets, Its computed as average for the years of 2009,2010 and 2011 from trade data of ITC Trade Map. (http://www.trademap.org/Country_SelProductCountry_TS.aspx).

ASEAN countries of Vietnam, Indonesia, Malaysia and Singapore are major competitors for Indian pepper exports. While those ASEAN countries are a source of low priced pepper as compared to India, the reduction in tariffs by India in the year 2019 is likely to increase the cheaper pepper imports to India. India already being one of the major importers, its competitiveness would depend on creating value for cheaper imports to compete in the European markets of UK, Germany, Italy, Japan and Singapore where currently India's price realisation is poor compared to competitors. Along with the need for technology for value addition, India has to be concerned about meeting the international safety standards which are quite stringent for spices. Spices, especially pepper face a larger threat from sanitary and phytosanitary requirements and standards defined distinctly by different countries and regulatory bodies. The study by Aarati *et al.*, 2012 shows the multiplicity of food and safety standards adopted by different countries and international regulators for pepper. In US, United States Food and Drug administration (USFDA) fixes the standards for black pepper to be sold in USA in consultation with the ASTA (American Spice Trading Association). Indian export consignments to the US are

inspected based on the standards and requirements of USFDA. In Europe, the European Spice Association (ESA) fixes the standards for black pepper imports and also imposes rules regarding the procedure to be adopted for sample test. This again is different from CODEX rules which involves method of packing, quality and characteristics of spices. The Agmark Standards regarding organic extraneous matter are 250 per cent stricter than the ESA (European Spice Association) Standards. For inorganic extraneous matter, the Indian Agmark standards are stricter compared to those of US, Malaysia and IPC by 500 per cent and ESA by 1000 per cent. With respect to moisture content, the Indian Agmark standards are 190 per cent higher than that of US, EU and IPC. The Japanese and Indian standards are on the same level where as the Malaysian standards are stricter compared to Agmark (Indian standards). A minimum bulk density of 490 g/z is required for marketing in India whereas IPC requires a higher minimum requirement of 550g/L. Compared to EU standards, the volatile oil content standards are relaxed in India (Aarati *et al*., 2012). This shows a wide difference in the rules and procedures adopted by different organisations and countries while importing this commodity. The absence of single international standard on rules governing the exports of spices is creating confusion among the exporters.

VI

CONCLUSION

India's losing export competitiveness in plantation commodities to low cost producers in Asia, Africa, Latin America and to also to European countries who export value added products poses a threat to plantation commodity exports from India. While the post-liberalisation scenario is seen more favourable for trade in value added and quality food products, India has also been facing high risk for its food commodity exports in terms of meeting the required certifications and international food safety standards. The proliferation of Regional and Free Trade Agreements has led to changes in the direction of trade in plantation commodity exports of India causing additional challenges. In this context, the study examines the changing scenario of plantation exports of India, and analyses three major plantation commodities, viz., coffee, tea and pepper with respect to their export performance and extent of market penetration in major world markets, realised unit export values and the tariff and non-tariff barriers faced by India for exports of those commodities. Looking into the major trends in the plantation commodity exports of India, there seems to be clear decline in the percentage share of plantation commodities in the agricultural export basket and the total exports of India. The fall in share of tea and cashew is a matter of concern. Unlike in the past, many plantation commodities like tea, pepper and cardamom are now dependent on domestic markets. For many plantation products, India has not just lost its export share in the world markets but has also become import oriented. For major exportable commodity like coffee, India

has not tapped the world markets to the required potential with minimal share in the major markets of the world. On an average the coefficient of unit export value for Indian coffee and pepper is less than one but is fairly above one for tea. There is substantial volume of re-exports of coffee, tea and pepper after value addition by European countries and middle eastern countries. While many European countries do not produce any of those commodities, some of them are major exporters of plantation crops due to heavy value addition and branding of their produce. The study highlights that lack of certification emerges as a major non-tariff barrier especially for coffee and tea exports from India. In the case of coffee, the threat becomes intense to India when the competitors are increasing the share of sustainable coffee in the world markets. Stringent rules of labelling in developed markets, quality standards, maximum residual limits, food safety, and ethical practices are major non-tariff barriers confronting exports of tea from India. Similarly, for spices, the largest threat among the non-tariff barriers is with the multiplicity of rules governing the sanitary and phytosanitary requirements. Better value addition through innovative technology, tapping on new and unexplored markets and negotiations on technical and non-tariff barriers in the international forums are called for enhancing competitiveness of plantation commodity exports from India.

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NOTES

1. Revealed Comparative Advantage index RCA could be written as : RCA = (E_{ij}/E_{it}) / (E_{nj}/E_{nt}), where E = Exports, i = country index, n= set of countries, j = commodity index, t = set of commodities. The comparative advantage is revealed if RCA >1. If RCA is less than Unity, the country is said to have a comparative disadvantage in the commodity or industry.

2. The Nominal Protection coefficient (NPC) of any commodity is defined as the ratio of its domestic price to the border price. This technique has been used by Baldwin (1975), Bhagwati and Srinivasan (1975) and Roningen and Yeats (1976).

NPC could be expressed as $NPCi = Pd_i/Pb_i$

NPC_i = Nominal protection coefficient of commodity i.

Pd_i = domestic price of commodity i

Pb_i = border price of commodity i

Effective Protection coefficient (EPC) is the ratio of the value added expressed in domestic market prices to value added expressed in border price. Value added could be defined as the value of the output at any point of time in the production, distribution process in any period less the value of the purchased inputs in the same period.

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