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Productivity, export competitiveness and the changing structure of trade in spices and plantation crops: An exploratory analysis

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Abstract

Enhancing trade competitiveness is viewed as one of the desired objectives of agricultural policy. It is also a widely held notion that enhancing productivity will result in commensurate improvement in competitiveness in global trade. This paper explores the relationship between productivity growth and export competitiveness (measured by revealed comparative advantage) in selected crop commodities in the spices and plantation crop sector. Secondary data on productivity and exports of selected crop commodities across spices and plantation crops for the last three decades is used to study the relationship. We find no evidence to imply that productivity growth will ensure better export competitiveness in these crops. The increasing competition for export markets among producing countries and increasing trade between producing countries adversely affect export competitiveness. The inter-trade among producing countries for spices is used to illustrate this point. The Grubel-Lloyd index is used to highlight the increasing intra-industry trade and the consequent change in the trade structure of these commodities from an Indian perspective. The study finds that a narrow focus on productivity gains at the country level will not enhance competitiveness in an increasingly open global trade scenario. The study outlines possible elements of complementary strategies (value addition, farmer collectivization, international cooperation) for enhancing the prospects of these commodities in the agricultural trade basket.

Keywords: Export competitiveness, plantation crops, productivity, spices, trade

Introduction

Trade in agricultural commodities accounts for a significant proportion of exports as far as the developing countries are concerned and is considered important for economic development (Ghosh, 2005). This holds true for the Indian economy, where agriculture plays a vital role, with 54.6 per cent of the population is engaged in agriculture and allied activities (Government of India, 2011). The primary sector contributes 16.5 per cent to the country's Gross Value Added (at current prices) for 2019-20 (Government of India, 2019).

India is a major producer of several plantation crops like tea, coffee, coconut, rubber and the world's largest producer, consumer and exporter of spices. The area under spices and plantation crops is estimated at 9.5 million hectares in 2018-19[1]. Though cultivated in less than five per cent of the gross cropped area, these crops have influenced the socio-economic development trajectories of the regions in which they are widely cultivated. Small and marginal farmers with holdings of less than two hectares account for the bulk of the output from these crops. Together, plantation crops and spices form a special crop group with a high degree of

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[1] The area under spices and plantation crops: *Includes the area under spice crops, arecanut, cashew, cocoa, coconut, tea, coffee and rubber.*

export orientation. The exports of spices and plantation crops accounted for about 17 per cent of the total value of agricultural exports from the country during 2019-20. The role played by plantation crops in attracting foreign exchange earnings to the country since colonial times is well documented (Joseph and George, 2010; Viswanathan and Shah, 2012). More than 10 per cent of the domestic spice production is exported (Spices Board, 2020), while the share of exports in domestic output was 70 per cent and 18 per cent for coffee and tea, respectively (IBEF, 2020). The preponderance of smallholder producers and export orientation of these crops make its export performance critical to the primary producers of these crop commodities. Apart from this, the production and processing of these crops being labour intensive, the sector also provides ample employment opportunities.

However, the main focus of agricultural policies in the country was enhancing crop productivity. Gains in competitiveness and farm profits were implied to follow productivity gains. But we can see that the share of export earnings from spices and plantation crops have declined over the decades. The share of export earnings from tea, coffee and spices has declined from 43 per cent in 1970-71 to 13 per cent in 2018-19 (Government of India, 2020). This decline in export earnings indicates the apathy of economic policy and research to the broader notions of national-level competitiveness, as suggested by Porter (1990). The analysis of trends in export competitiveness and its underlying features need close attention in this context.

The analysis of trade patterns and sources of competition is also important since the export demand for most of these tropical spices and plantation commodities arises from countries that do not produce them. The opening up of trade, consequent to the WTO agreement, therefore has significant implications for the production and trade of these commodities. Understanding these changes is important in crafting policies for the equitable development of the spices and plantation crop sector.

After the methodology part, the paper provides a detailed analysis of the spices and plantation crops sector in terms of the trends in crop area, the value of output and yield gains. Then we examine the trends in export competitiveness and yield growth to identify complementary trends in these variables. The subsequent section examines key trends and features of the trade of spices and plantation crops that can influence the sector's trade performance. The final section concludes by indicating a few possible policy interventions for ensuring sustained export growth in these crops.

Methodology

Plantation crops are those which are grown in a large area, and the product can be utilized only after processing. The major plantation crops include coffee, tea, rubber, coconut, areca nut and cashew nut. Spice crops form a diverse group across several botanical crop groups and include both annuals and perennial crops. More than 60 spices are commercially cultivated in India. The study was conducted across spices as an aggregate group, and the plantation crop sector was represented by four crops, coffee, tea, coconut and rubber. Among these crops, coffee and tea are more important as the export orientation of these crops is much higher. The four plantation crops included in the study together account for more than 90 per cent of the total production from the plantation sector. The productivity growth rate, measured by the compound annual growth rate, can be viewed as a proxy for technology generation. Technology in the form of improved genetic strains, better crop production technologies and plant protection strategies drive productivity growth in crops.

Revealed comparative advantage

Generally, export competitiveness is measured as a country's advantage or disadvantage in selling its products in the international markets (OECD, 2014). The Revealed Comparative Advantage (RCA) (Balassa, 1965), a measure of international trade specialization, is used to identify the trends in export competitiveness of spices and plantation crops commodities. The RCA identifies the comparative advantage or disadvantage a country has for a commodity with respect to another country or group of countries. Economic factors, structural changes, changes in world demand and trade specialization are some factors that contribute to movements in RCA (Shinoj and Mathur, 2008).

RCA can be written as per equation:

$$RCA = \frac{(X_{ij}/X_{ik})}{(X_{nj}/X_{nk})}$$

Where,

X_{ij} = Value of export of commodity 'j' from country 'i'

X_{ik} = Value of exports of country 'i' of a set of commodities 'k'

X_{nj} = Value of exports of a set of countries 'n' of commodities 'j', and

X_{nk} = Value of exports of a set of countries 'n' of a set of commodities 'k'

Here, country 'i' refers to India, commodity 'j' refers to selected crop, set of commodities 'k' refers to all commodities and set of counties 'n' refers to World. An RCA value greater than unity indicates an economy's international competitiveness, while a lower value would place a country at a relatively disadvantage with respect to the export of that particular commodity.

The compound annual growth rate, estimated using the log growth model and RCA for the selected commodities in concurrent periods over the last three decades, was compared to identify similarities in trends. Time series data on spices production was obtained from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India and Food and Agriculture Organization of the United Nations (FAO, 2020). The trade data of spices was compiled from the UN Comtrade database.

The trends in trade competitiveness can be understood by looking at some of the key variables linked to trade performance. The trends in trade among the producing countries as a share of their total exports of spice commodity serve as an indicator of intra-trade among producing countries. The trends in intra-trade among producing countries, as shares of their total exports to the world, is traced for selected crops in the spices group, which are representative of typical tropical commodities. We employ the Hirschman-Herfindahl Index (HHI) (Cracau and Lima, 2016) for measuring the export diversification in these commodities. The value of HHI lies between 0 and 1, and values nearer to unity indicate concentration in export sources and movement in the opposite direction indicates diversification in sources of exports. Grubel Lloyd index (GLi) is used to measure the intra-industry trade (Harilal and Dhanya, 2015) in selected export categories of spices and plantation crops. The Grubel-Lloyd index is calculated as

$$GLi = 1 - \frac{|Xi - Mi|}{Xi - Mi} \quad : 0 \leq GLi \leq 1$$

Where *Xi* denotes the exports and *Mi* the imports of good 'i'. Values closer to unity indicate substantial intra-industry trade, and a value of '0' would mean that there is no intra-industry trade.

Results and discussion

Salient trends in spices and plantation crops

The area under major plantation crops and spices showed significant growth during the past few decades. The gross cropped area has increased by 19 per cent since 1970-71, and most crops and crop groups have shown positive trends in the area under cultivation. Robust growth in the area occurred in plantation crops like tea, coffee, rubber and coconut, whereas the area under spices and condiments almost doubled during the last five decades (Table 1). The area under major spices and plantation crops increased from 3.55 million hectares in 1970-71 to 7.20 million hectares during 2016-17. Together, spices and plantation crops doubled the area under cultivation and fared better than important crop groups such as cereals, pulses and oilseeds in terms of area expansion. A higher rate of relative return is a major factor underlying gains in the area for specific crops resulting from crop diversification (Chand *et al*., 2008). The shift away from cereals and better relative gains in the area by fruits, vegetables, coffee, rubber, coconut and spices could be linked to better economic prospects of these crops. The share of cereals in GCA declined by 17.6 per cent, while the share of spices and plantation crops increased by 70 per cent since 1970-71. The diversification away from cereals started in the mid-1980s, and it favoured horticultural crop groups like spices, fruits and vegetables, especially in the decade after liberalization (Chand *et al*., 2008).

Table 1. Trends in area under major crops

Crop	1970-71	1990-91	2010-11	2016-17	Per cent change
Cereals	101784 (61.4)	103065 (55.5)	101598 (51.4)	99786 (50.6)	-2.0
Pulses	23126 (13.9)	24883 (13.4)	25340 (12.8)	29450 (14.9)	27.4
Oilseeds	13696 (8.3)	23671 (12.7)	27083 (13.7)	24098 (12.2)	76.0
Sugarcane	2589 (1.6)	3908 (2.1)	5198 (2.63)	4440 (2.3)	71.5
Cotton	7830 (4.7)	7551 (4.1)	10939 (5.53)	10830 (5.5)	38.3
Fruits & vegetables	3683 (2.2)	6693 (3.6)	9443 (4.78)	12611 (6.4)	242.4
Spices*	1864 (1.1)	2324 (1.3)	3299 (1.67)	3671 (1.9)	96.9
Coffee	166 (0.1)	289 (0.16)	348 (0.18)	449 (0.23)	170.0
Tea	355 (0.22)	444 (0.24)	610 (0.31)	586 (0.30)	65.1
Rubber	138 (0.08)	289 (0.16)	477 (0.24)	454 (0.23)	229.0
Coconut	1023 (0.62)	1481 (0.80)	1833 (0.93)	2082 (1.1)	103.5
Others	9537 (5.8)	11143 (6.0)	11516 (5.83)	8843 (4.5)	-7.3
All Crops	165791	185742	197683	197300	19.0
Total spices & plantation crops	3546 (2.14)	4827 (2.6)	6567 (3.3)	7242 (3.67)	104.2

* Includes condiments also

Note: Area in thousand hectares. The figures in parenthesis indicate share in gross cropped area

Value of output

The changes in cropping pattern in favour of spices and plantation crops could also arise from the higher value of output per unit area under cultivation of these crops. Kumar and Gupta (2015) found evidence for crop diversification in favour of high value crops in India during the two decades starting from 1990-91. The trends in the relative value of the output of major crop categories are summarized in Table 2. The relative value of output is expressed as the ratio of per hectare value of crop out to the national average value of output for all crops. The relative value of output for the spices and plantation crops together has remained above two for the entire period studied. This means that the value of output from these crops was more than two times the national average value of output from the crop sector. Presently, the relative value of output for these crops is much higher than for cereals (0.53), pulses (0.36) and oilseeds (0.65). A steady rise in the relative value of output can be noticed in spices. In the case of major plantation crops, the

Table 2. Trends in relative value of output of major crops

Crop/year	1970-71	1990-91	2000-01	2011-12	2016-17
Cereals	0.56	0.64	0.59	0.55	0.53
Pulses	0.58	0.47	0.36	0.34	0.36
Oilseeds	1.08	0.78	0.63	0.61	0.65
Sugarcane	2.97	2.45	1.95	1.92	1.62
Fruits & vegetables	8.13	5.23	5.74	5.05	4.20
Spices & condiments	1.91	1.97	2.04	2.33	2.49
Coffee	3.49	2.13	2.94	3.18	2.53
Tea	3.03	2.65	2.15	1.68	2.07
Rubber	2.67	3.12	3.49	5.97	4.23
Coconut	2.30	1.81	1.52	1.20	1.01
Total spices & plantation crops	2.24	2.06	2.03	2.27	2.14
All crops	1.00	1.00	1.00	1.00	1.00

Source: Author's calculation based on data from National Accounts Statistics and CSO

relative value of output was high even four decades back. Apart from rubber, the relative value of output for plantation crops like coffee, tea and coconut has declined steadily. However, it should be noted that the relative value of output for these crops continue to be much higher than cereals and pulses, the major crop groups in the country.

Trends in productivity

The productivity growth of spices and plantation crops remained attractive during the last three decades. The productivity of spices and rubber increased more than two times during this period. The comparison of yield gains since the turn of this century indicates that all the other crop groups have shown substantial productivity improvement except for coffee. The yield growth was highest for spices, both for the overall period and for the period since 2000. The trends in the productivity index are given in Table 3.

The productivity of crops needs to be juxtaposed with the global productivity levels of the crop to construct a perspective on the relative yield advantage or disadvantage enjoyed by the crop.

Table 3. The trend in productivity index (1988=100)

	Spices	Coffee	Tea	Rubber	Coconut
1988	100.0	100.0	100.0	100.0	100.0
1997	133.2	144.9	110.4	154.5	108.5
2007	184.4	149.1	101.6	190.4	126.1
2017	240.7	135.2	128.2	220.3	120.5
Yield growth					
Since 2000 (%)	59.7	(-)19.6	28.4	32.1	13.7

Both productivity, which is a proxy for competitiveness, and trade volume are significant factors influencing the power of price determination in global markets (Mohanakumar, 2012). The productivity trends of major plantation crops in India and the world are compared in Table 4. Spices being a composite group of diverse crops, are not included here. The productivity levels of all the major plantation crops remained above the average global productivity during the past five decades. In absolute terms, the gains in productivity in these crops were better than global productivity gains, except in the case of coffee. The higher gains in productivity, read with the higher initial yield level, indicate that India has developed and disseminated superior technology inputs in these crops over sustained periods.

Export profile

The spices and plantation crops are generally recognized for their export orientation. The key elements of the export profile of spices and plantation crops for the year 2018-19 is given in Table 5. Three commodities *viz.*, coffee, tea and spices account for more than 80 per cent of the total exports under the category of spices and plantation crops. A clear understanding of the general trends in the sector can be gained from studying the key segments under this category.

Trade competitiveness and yield gains

Over the past few decades, the area under spices and plantation crops was increasing. Their value of output relative to several major crop groups showed improvement. More importantly, their productivity

Table 4. Productivity trends in plantation crops: India and world

Year	Coffee		Tea		Rubber		Coconut	
	India	World	India	World	India	World	India	World
TE 1970	644	474	1166	767	657	630	4237	3953
TE 1980	683	524	1462	789	757	690	3870	3720
TE 1990	756	545	1687	1144	1026	798	4843	4192
TE 2000	927	685	1737	1395	1574	949	4770	4741
TE 2010	800	798	1739	1435	1801	1153	5464	5153
TE 2017	810	840	2157	1448	2098	1149	5464	4977
Gains in absolute terms								
(kg ha^{-1}) 1970-2017	166	366	991	681	1441	519	1227	1024

Source: Computed from FAOSTAT data (FAO 2020)
Note: Productivity in kg ha^{-1}

Table 5. Export profile of spices and plantation crops (2018-19)

Commodity	Value (₹ crores)
Coffee	5722
Tea and mate	5828
Spices	23218
Cashew kernels	4606
Coconut	570
Betel nut	65
Cocoa	865
Rubber	77

Source: Computed from Economic Survey 2019-20 and export-import data bank, Ministry of Commerce and Industry, Government of India

growth was robust and better than productivity gains at the global level in absolute terms. The revealed comparative advantage shows the changes in the export advantage of a particular commodity in a country. However, the trends in trade competitiveness measured by RCA show a secular decline over the same period. Between 1991-95 and 2016-19, the RCA declined substantially for coffee, tea and spices (Table 6). The RCA declined by 72.4, 80.0 and 22.2 per cent for coffee, tea and spices, respectively, during this period. In the case of rubber and coconut, India was not a significant exporter even three decades back. In the case of rubber, the RCA has shown a steady weakening for the last two decades. The declining RCA is counterintuitive to expectations as the domestic indicators of production and productivity improved, both in absolute and relative terms.

Table 6. Trends in revealed comparative advantage

Year	Coffee	Tea	Rubber	Spices	Coconut
1991-95	3.87	30.44	0.06	14.77	0.09
1996-00	3.89	27.78	0.06	19.25	0.41
2001-05	2.60	14.80	0.65	9.83	1.49
2006-10	1.46	8.53	0.43	11.80	4.70
2011-15	1.09	7.06	0.15	10.20	10.83
2016-19	1.07	6.08	0.11	11.49#	8.27

Source: Computed from the UN COMTRADE data, except for coconut, where data from FAOSTAT is used

Note: The RCA for coconut is worked out for ITC HS codes 080112 and 080119 corresponding to 'coconut in the inner shell (Endocarp)' and 'other coconuts'

When we examine the trends in yield growth and export competitiveness, one aspect that can be noted is that while the yield gains in absolute terms in most of the crops were above the global average gains, the relative export competitiveness as measured by RCA declined in general for these crop commodities. Table 7 presents the compound annual growth rates and relative change in yield and RCA of spices, coffee and tea, where substantial trade volumes were recorded during the entire study period. Though it is known that yield gains alone may not be sufficient for improving trade competitiveness, the other factors which have influenced the adverse movement in RCA are not clearly understood. Both internal and external trade policies like interventions or lack of it by the state, production subsidies, level of tariffs and trade barriers can affect the RCA of a commodity. Therefore, an adverse movement of RCA may indicate adverse trade policies or environment and not a reflection of true comparative status (Suresh and Mathur, 2016). In this context, some of the key factors which could have affected the trade competitiveness of these commodities are examined. Though trade agreements (multinational, regional and bilateral) have influenced the spice movements in relative advantages, the subject would require a detailed analysis, which is beyond the scope of this paper. A short discussion on the nature of the influence of these trade agreements on the competitiveness of spice exports is provided as a note[2].

[2] Trade agreements: The declining trade competitiveness in these commodities needs to be examined, mainly in the context of trade agreements involving these commodities and key changes in structural aspects of the trade, including direction of trade flow. With the opening up of trade consequent to WTO agreement, the production and trade of spices, a typical domain of developing countries, have undergone significant changes. In an increasingly open economy, there is always a threat of cheaper products from international markets entering domestic markets (Nagoor, 2010). With the signing of the World Trade Organization agreement, India has also become a part of its vision as espoused in Agreement on Agriculture (AoA) which calls for domestic support, market access and export competition. Apart from this, India has trade agreements involving preferential access, economic cooperation and Free Trade Agreements (FTA) with about 54 individual countries (Ministry of Commerce, 2014). India has also signed bilateral trade deals with some 18 groups/countries, which are implemented in the form of Comprehensive Economic Partnership Agreement (CEPA), FTA or Preferential Trade Agreements (PTAs). Many of these trade agreements involve our major competitors in the global markets for exports of spices and plantation crops. The AoA and the host of other trade agreements have increased competition among the producing countries (Harilal and Dhanya, 2015) while influencing the trade competitiveness of tropical commodities like spices and products from plantation crops.

Table 7. Comparative performance of yield growth and trade competitiveness (1988-2017)

Crop	CAGR of Yield (%)	CAGR of RCA (%)	Change in Yield (%)	Change in RCA (%)
Spices	2.93	(-) 2.3	107.8	(-) 51.3
Coffee	0.35	(-) 6.7	20.1	(-) 85.8
Tea	0.56	(-) 7.5	27.6	(-) 85.3

Diversification in export sources

The number of sources from which a particular commodity can be sourced can influence its ability to maintain a favorable terms of trade. At one extreme, when a country has an absolute monopoly in the production of a commodity, it can set the price of the commodity at a level above the marginal cost of production while earning positive economic profits. As the number of sources or suppliers increases, the competitive forces in the market increase. The increased competition among the suppliers/sources increases and wipes out the excess profits. It would imply that as the number of sources increases, the ability of a source country to maintain an advantageous term of trade for that commodity decreases.

The increasing trade competition in spices and plantation crop commodities is evident from the diversification of export sources of specific commodities as measured by the trends in Hirschman Herfindahl Index. As a result, the sources of export and competition for export markets have intensified in these commodities over the years (Table 8). The declining HHI for coffee and tea indicates this trend. In the case of spices, the export indicated a high degree of diversity in sources even three decades back. The only exception has occurred in the case of rubber, where there is evidence of concentration of export sources, which has occurred mainly due to the enhanced export concentration in favour of Thailand and Indonesia.

Table 8. Diversification in sources of exports

Year	Coffee	Tea	Rubber	Coconut	Spices
1991	0.21	0.28	0.24	0.08	0.05
2000	0.07	0.12	0.25	0.10	0.05
2010	0.08	0.12	0.22	0.13	0.07
2017	0.07	0.13	0.45	0.16	0.07

Source: Computed from the UN COMTRADE data
*Data from UNCTAD

Though the spices do not display a clear trend in the diversification of export sources at the aggregate level, a disaggregated analysis of the trends in the HH index for the global production of some of the major spices like chillies, black pepper, ginger, nutmeg, mace and cardamoms indicates a similar increasing trend of diversification of sources (Table 9). For instance, the HH index declined by over 30 per cent for pepper, ginger and chillies, indicating diversification of sources of production. An increased number of sources would translate into increased competition in the global markets for an exporting country like India.

Intra-trade among producing countries

The increasingly open nature of economies consequent to the implementation of trade agreements and increasing sources of diversification of production led to increased trade in these commodities among the producing countries[3]. For example, the trade between producing countries in tropical spices expressed as the share of the value

Table 9. Diversification of export sources in selected spices

Year/crop	Pepper	Nutmeg, mace and cardamoms	Ginger	Chilli	Cinnamon
1980	0.29	0.36	0.37	0.32	0.43
1990	0.29	0.31	0.30	0.27	0.30
2000	0.28	0.26	0.35	0.26	0.31
2010	0.24	0.29	0.23	0.25	0.30
2018	0.20	0.31	0.25	0.22	0.30
Change (%)	**(-)31.0**	**(-)13.9**	**(-)32.4**	**(-)31.3**	**(-)30.2**

[3] *The producing countries considered for the commodities:* (a). Black pepper: Vietnam, Indonesia, Brazil, India and Malaysia (b). Nutmeg, mace and cardamom: India, Indonesia, Sri Lanka and Guatemala. (c). Ginger: India, Nigeria, Indonesia, China and Thailand. (d). Turmeric: India, Myanmar, China and Indonesia. (e). Cinnamon: Indonesia, Sri Lanka, China, India and Vietnam. (f). Clove: Sri Lanka, India, Madagascar and Indonesia.

of exports to other producing countries in total export value of the commodity, increased significantly since the 1990s. The trade value increased more than 50 per cent for turmeric, black pepper, cinnamon and clove within two decades (Table 10). The rising intra-trade in spices for India, the leading exporter and importer of spices, is illustrative of the general trend in spices and plantation crops, where the trade between producing countries has increased. This means that the producing countries are increasingly competing for markets in other producing countries, whereas earlier, the competition was predominantly for markets in consuming countries.

Table 10. Increased intra-trade in spices among producing countries

Spices/year	2000	2018
Pepper	2.66	19.35
Nutmeg, mace & cardamoms	10.22	13.04
Ginger	9.44	12.83
Turmeric	6.23	32.39
Cinnamon	4.71	9.92
Clove	21.14	33.06

Note: Value of exports to other producing countries expressed as a share of the total value of exports

Intra-industry trade

The intra-industry trade, exports and imports of the commodities within the same category has increased over the years. Measured using the Grubel-Lloyd index, the intra industry trade index was used to identify the changes in India's trade structure in selected commodities. As a traditional exporting country of commodities like spices, tea and coffee, the rise in the GL index indicates that the country is also increasingly importing the same category of commodities. This scenario has significant adverse economic consequences for the primary producers of these commodities in India.

Table 1. India's Intra-Industry Trade (Grubel-Lloyd index)

Year	Coffee	Tea	Spices
TE 1990	0.03	0.01	0.18
TE 2000	0.05	0.04	0.32
TE 2010	0.29	0.13	0.36
TE 2017	0.36	0.13	0.50

Source: Computed from the UN COMTRADE data

Conclusion

The spices and plantation crops sector, which has a unique place in the agrarian economy of India, has undergone significant changes over the last few decades. These changes spanning productivity, export competitiveness, and trade structure have implications for the primary producers of these commodities and other stakeholders along the complex value chains of these commodities. The study brings evidence for three major trends in tropical spices, *viz*., the increasing diversification of sources, the increasing trade of tropical spices between producing countries, and the rising level of intra-industry trade within commodities. The increasingly open nature of the economy has played a key role in determining the extant situation. The changes in sources and the increasing competition among producing countries underline the need for better coordination and cooperation among the producing countries to influence the terms of trade in their favour and gain from collective bargaining. Commodity-specific international commodity boards can be established to ensure cooperation among the major producing countries, mostly developing economies.

The analysis of the export performance of these commodities also indicates a general decline in export competitiveness, even in the backdrop of rising productivity. Therefore, the quest to enhance international competitiveness in these commodities cannot rely on productivity gains alone to translate into enhanced competitiveness. The upward mobility along the commodity value chain and diversification of production could offer a way out of the typical problem faced by primary commodities, slow demand growth and relatively inelastic supply (Page and Hewitt, 2001). A comprehensive approach to the sector focuses on developing strong institutional mechanisms for product aggregation, value addition, and export market intelligence is required. The farmer collectives can also play a significant role in translating the productivity advantages into real export efficiency gains. A critical appraisal of the policy environment in spices and plantation crops

encompassing production arrangements, domestic markets and trade facilitation can help identify incongruences and ensure robust and sustainable growth of the sector.

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