population and contributes 78 percent of the SAARC's GDP (Computed from World Development Indicator WDI, World Bank Data 2021). It shares land or sea borders with each member of SAARC and is the largest, centrally located and the most developed industrialized country in the region. It is also one of the fastest growing economies in the world with an average annual growth rate of eight percent per annum (WDI, World Bank, 2021). India maintains 'Neighbourhood First' policy with SAARC and signed bilateral trade agreements apart from SAPTA and SAFTA (Government of India, 2020). It has also removed Non-Tariff Barriers (NTBs) from imports (Chanda 2006; and Pandey, Kharel and Dahal 2023).

As studies on international trade suggest that developed countries and LDCs benefit from trading with fast-growing trading partners (Coe, Helpman and Hoffmaister 1997; Vamvakidis 1998; Keller 2002; Arora and Vamvakidis 2004; and Zhao, Wu and Ye 2022) and India being the most prominent member of SAARC in terms of economic strength and technological advancement, an analysis of India's bilateral merchandise trade with LDCs and NLDCs is deemed important to understand the impact of the trade policies between India and the two groups. Moreover, as 'SAARC Agriculture Vision-2020' laid the importance of food security in the region (SAARC Agriculture and Rural Development) and several NTBs hinder potential agricultural trade between India and SAARC (Kumar and Bharti 2021), this paper also investigates the agricultural trade relation between India and SAARC grouped under LDCs and NLDCs.

2. OBJECTIVES

Based on the above literature, the objectives of the study are: -

1. To examine the trends and pattern in intra-regional trade in SAARC grouped under LDCs and NLDCs;
2. To study the trade intensity between India and SAARC, and with each of its members; and
3. To analyze the comparative advantage of India in agricultural trade with SAARC members.

3. DATA AND METHODOLOGY

Secondary data on merchandise trade have been collected from 2007 to 2021 on merchandise trade from International Monetary Fund, Direction of Trade Statistics (IMF DOTS). Data on agricultural product trade have been collected from Trade Map, International Trade Centre (ITC) of United Nations Conference on Trade and Development (UNCTAD) /World Trade Organization (WTO) for the period 2007 to 2021.

The methodologies employed for the study are simple averages, percentage, trade intensity index (TII) and revealed comparative advantage index (RCA).

Trade Intensity Index (TII) is used to determine whether trade between two countries is more or less than expected with respect to their importance in the world trade. It is calculated as:-

$$TII = \frac{\left(\frac{Tij}{Ti}\right)}{\left(\frac{Twj}{Tw}\right)}$$

where, Tij is the value of total bilateral trade (export and import) between country i and j; Ti is the value of total trade of country i to the world; Twj is the value of world's trade with country j; and Tw is world's total trade.

While a TII value more than one indicates that trade flow between the countries is larger than expected given their importance in world trade, a value closer to zero indicates less intensity of trade between them (Integration Indicators Technical Notes, Asian Development Bank, 2013).

Revealed Comparative Advantage (RCA) Index was developed by Balassa (Balassa 1965) to assess the competitiveness of a product or a group of products in a country's export and in world's export to another country's market. The benchmark formula for RCA index is also called Balassa Revealed Comparative Advantage Index (BRCAI). It is computed as follows:-

$$BRCAI = \frac{\left(\frac{X_{ij}^{k}}{X_{ij}}\right)}{\left(\frac{X_{iw}^{k}}{X_{iw}}\right)}$$

where, X^k_{ij} is the value of export of product k from country i to country j; X_{ij} is the value of total export from country i to country j; X^k_{iw} is the value of export of product k from country i to world; and X_{iw} is the value of total export from country i to world.

The RCA values range from zero to infinity, where a RCA index greater than one means that the country has a relative comparative advantage in the product, while a value less than one indicates comparative disadvantage.

4. RESULTS AND DISCUSSION

4.1 Intra-SAARC trade profile

Table I presents the intra-regional trade in SAARC. It is observed India (IND) is the largest contributor to intra-SAARC export (80.04%), but this

comprises only 7.27 percent of its total export to the world.

Table I: Intra-regional Exports and Imports in SAARC Countries during 2021

SAARC	EXPORTS		IMPORTS	
	Percentage share in Intra-SAARC Export	Percentage share of Intra-SAARC Export in its World Export	Percentage share in Intra-SAARC Import	Percentage share of Intra-SAARC Import in its World Import
AFG	1.42	70.20	3.24	21.10
BGD	4.46	4.52	32.71	17.49
BTN	1.74	98.62	3.80	78.96
IND	80.04	7.78	13.96	0.88
MDV	0.03	7.27	1.31	18.39
NPL	3.52	79.14	27.06	61.15
PAK	5.22	6.98	3.29	1.64
LKA	3.57	10.26	14.62	23.96

Source: Computed from IMF, Direction of Trade Statistics.

Among the LDCs, 98.62 percent of Bhutan's (BTN) total export is intra-SAARC, followed by Nepal (NPL) with 79.14 percent and Afghanistan (AFG) with 70.20 percent. In the case of imports, Bangladesh's (BGD) share is the highest (32.71%) followed by Nepal and Sri Lanka (LKA). The share of intra-SAARC imports to world import indicates that 78.96 percent of Bhutan's and 61.5 percent of Nepal's total import comes from SAARC. On the contrary, Pakistan's (PAK) and India's intra-SAARC import to their world import constitute only 1.64 percent and 0.88 percent respectively while 18.39 percent of Maldives' import comes from SAARC.

4.2 India's trade relation with SAARC

The percentage share of LDCs and NLDCs in India's export and import with SAARC is shown in Table II.

Table II: Share of LDCs and NLDCs in India's Trade with SAARC (2007-2021)

S. No.	Year	LDCs		NLDCs	
		Share in India's Export to SAARC	Share in India's Import from SAARC	Share in India's Export to SAARC	Share in India's Import from SAARC
1	2007	48.33	54.52	51.67	45.48
2	2008	51.91	59.38	48.09	40.62
3	2009	55.93	60.43	44.07	39.57
4	2010	49.18	57.83	50.82	42.17
5	2011	52.07	56.82	47.93	43.18
6	2012	59.16	55.06	40.84	44.94
7	2013	60.11	57.42	39.89	42.58
8	2014	57.26	58.09	42.74	41.91
9	2015	56.46	56.63	43.54	43.37
10	2016	66.18	59.57	33.82	40.43
11	2017	68.37	58.64	31.63	41.36
12	2018	70.78	51.26	29.22	48.74
13	2019	74.87	71.08	25.13	28.92
14	2020	80.39	76.89	19.61	23.11
15	2021	80.80	79.46	19.20	20.54

Source: Computed from IMF, Direction of Trade Statistics.

The percentage share of LDCs in India's exports to SAARC is observed to be higher than the share of NLDCs, except during the years 2007 and 2010. During the two years the share of LDCs was 48.33 and 49.18 percent respectively, while the share of NLDCs was 51.67 and 50.82 percent respectively. The share of LDCs in India's intra-SAARC export increased from 48.33 percent in 2007 to the highest of 80.80 percent in 2021, while that of the NLDCs touched the highest share of 51.67 percent only in 2007. Similarly, in the case of imports the share of LDCs was more than that of the NLDCs with the highest of 79.46 percent recorded in 2021. The share of NLDCs in India's import from SAARC decreased from 45.48 percent in

2007 to 20.54 percent in 2021. Thus, while the share of NLDCs declined during the study period in India's export and import with SAARC, the share of LDCs increased. This can be attributed to the fact that India offers separate tariff concessions and maintains separate sensitive lists for LDCs and NLDCs with more preference to LDCs (Taneja, Prakash and Kalita 2013).

4.3. India's Trade Intensity Index with SAARC and the member countries:

The TII indicates the trend in the variation in bilateral trade potential, resulting from barriers other than size of the countries (Drysdale and Garnaut 1982). Table III illustrates the TII between India and each member of SAARC grouped under LDCs and NLDCs, besides the TII with SAARC as a unit for the period 2007 to 2021. The respective trends have been presented in Fig. III (a), (b) and (c).

Though India's TII with SAARC countries during 2010 to 2013 was low with values less than one, the intensity increased by 2021 showing an increasing trend as seen in Fig. III (a). Among the LDCs, the intensity of India's trade with Afghanistan has been on the rise from 4.25 in 2007 to 8.28 in 2020 which declined in 2021 to 6.41. Whereas, India's trade intensity with Bhutan and Nepal was the most intense, but gradually declining, yet maintaining double digit values of TII from 48.01 to 38.25 in Bhutan and 43.55 to 31.34 in Nepal respectively.

Table III: Trade Intensity Index between India and Other Members of SAARC(2007-2021)

S. No.	Year	LDCs					NLDCs				TII with SAARC
		TII with AFG	TII with BGD	TII with BTN	TII with NPL	TII with LDCs	TII with MDV	TII with PAK	TII with LKA	TII with NLDCs	
1	2007	4.25	6.99	48.01	43.55	10.03	5.40	3.03	12.22	5.60	1.50
2	2008	4.66	5.76	47.14	38.95	8.53	4.77	2.34	9.38	4.29	1.12
3	2009	4.80	4.07	45.29	34.42	6.58	6.19	2.09	7.11	3.44	1.00
4	2010	3.06	3.92	39.34	30.00	5.92	5.55	2.32	9.19	4.22	0.98
5	2011	2.34	3.50	35.99	26.28	5.25	4.09	1.33	8.63	3.49	0.85
6	2012	2.84	4.47	35.82	23.96	6.27	3.62	1.49	7.84	3.30	0.88
7	2013	3.55	4.58	38.77	24.46	6.54	3.08	1.74	7.96	3.54	0.99
8	2014	3.54	4.71	38.38	26.81	6.96	3.58	1.72	10.22	4.29	1.20
9	2015	4.78	4.23	37.24	30.02	6.39	4.87	1.71	10.03	4.27	1.26
10	2016	4.78	4.25	44.42	35.45	7.03	4.58	1.49	8.29	3.41	1.28
11	2017	5.48	4.31	39.38	30.03	6.95	4.31	1.29	7.75	3.08	1.17
12	2018	5.91	4.65	37.44	31.51	7.64	3.82	1.57	8.44	3.48	1.28
13	2019	6.75	4.41	39.85	30.87	7.47	4.14	0.77	8.01	2.87	1.22
14	2020	8.28	5.57	43.32	35.80	8.95	6.88	0.22	8.26	2.44	1.43
15	2021	6.41	5.84	38.25	31.34	8.83	7.72	0.23	7.88	2.27	1.34

Source: Computed from DOTS, IMF

India's TII with Bangladesh declined from 6.99 to 5.84 during the same study period. The overall trade intensity between India and the LDCs though declined from 10.03 in 2007 to 8.83 in 2021, it showed a slightly increasing trend as illustrated by Fig. III(b).

Among the NLDCs, India's trade intensity with Sri Lanka declined from 12.22 to 7.88 during 2007 to 2021which however was higher than its trade with Maldives. On the other hand, although the TII with Pakistan declined from 3.03 in 2007 to 1.57 in 2018, it indicated larger than expected trade between India and Pakistan. However, from 2019 to 2021 it registered TII values less than one, indicating less than expected trade between the countries.

The overall TII between India and NLDCs though larger than expected compared with the world was lower than with the LDCs. However, unlike with the LDCs, the TII with NLDCs declined rapidly during 2007 to 2021, as shown in Fig. III (c).

Fig. III (a): India-SAARC TII (2007 – 2021)

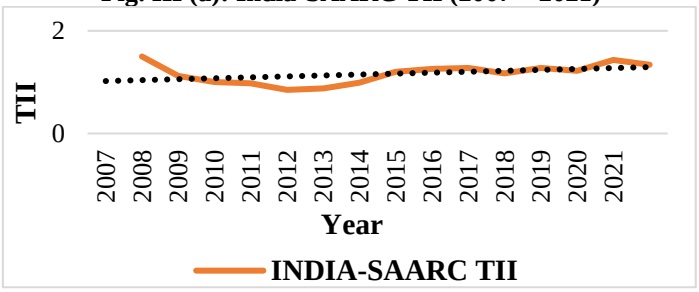


Fig. III(b): TII between India and the LDCs of SAARC (2007-2021)

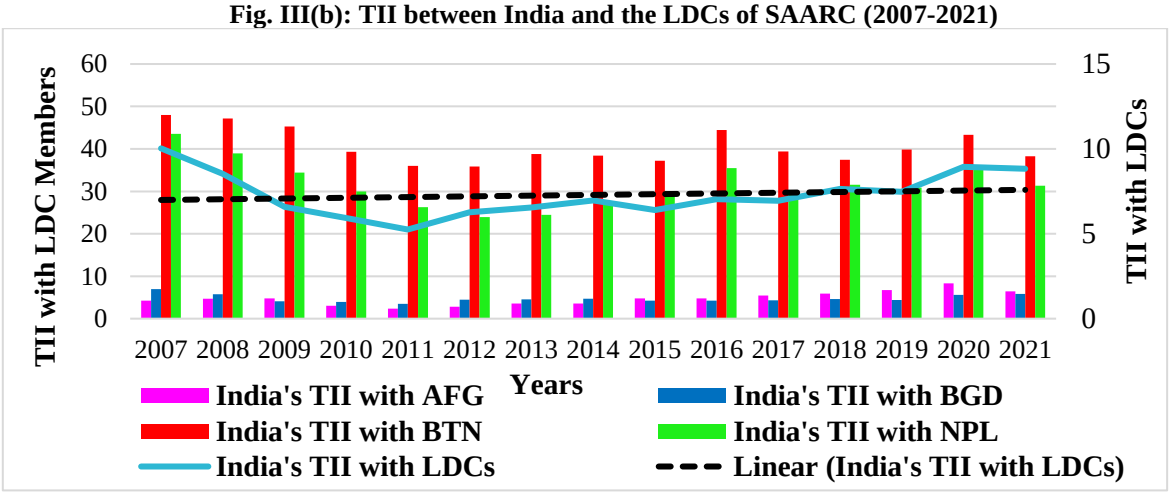
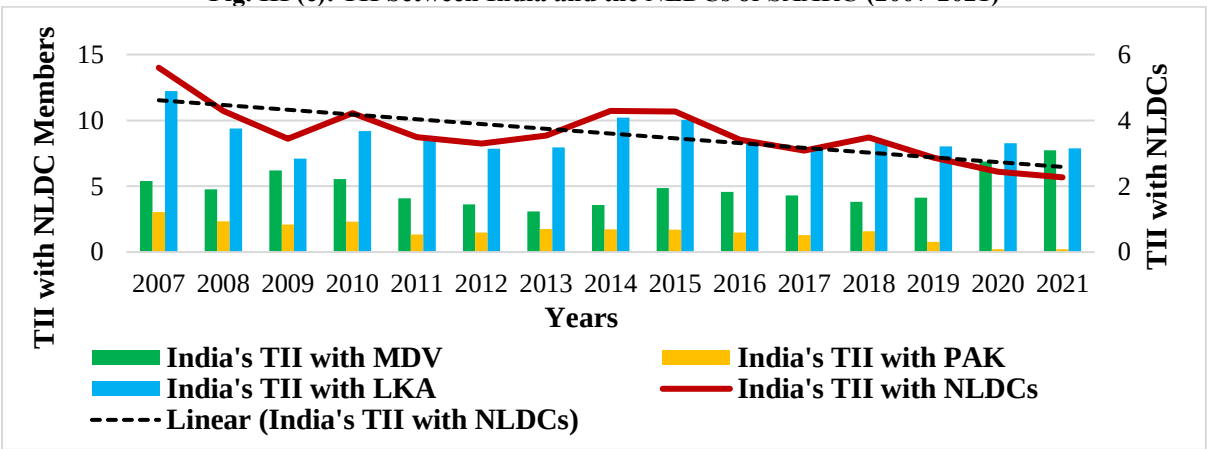


Fig. III (c): TII between India and the NLDCs of SAARC (2007-2021)



4.4. India's RCA Index in agricultural products with members of SAARC:

Table IV represents India's RCA Index in agricultural products with SAARC members, grouped under LDCs and NLDCs during 2007 to 2021, with their corresponding illustrations in Fig. IV (a), (b) and (c).

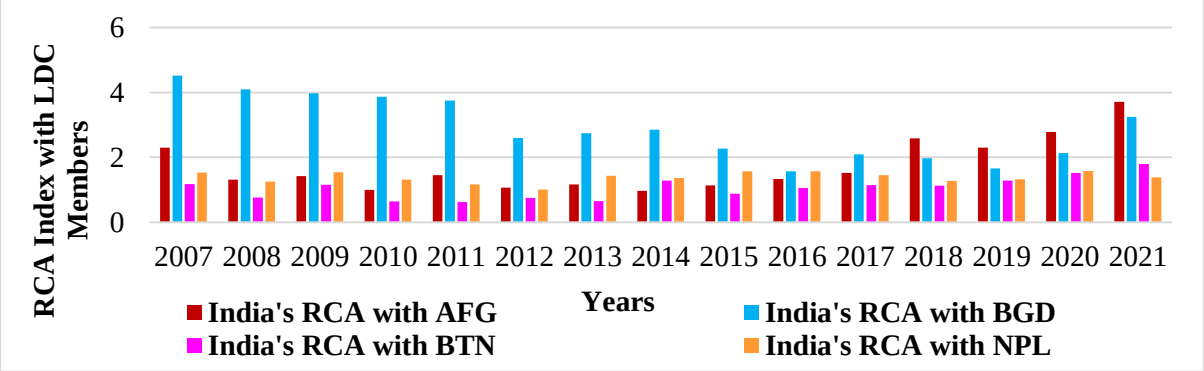
The RCA index shows the importance of agricultural product in India's export and in world export to SAARC countries grouped under LDCs and NLDCs. It is observed that in 2007 India had the greatest comparative advantage in the export of agricultural products with Bangladesh (RCA index of 4.52), followed by Afghanistan (RCA index of 2.30). But by 2021, the comparative advantage with Afghanistan was the greatest. India has had comparative disadvantage in trading agricultural products with Bhutan between 2010 and 2013, shown by RCA value was less than one. The RCA in agricultural products between India and Nepal indicated high comparative advantage for India, as the index value is greater than one except

Table IV: India's RCA Index in Agricultural Products with Members of SAARC (2007-2021)

S. No.	Year	LDCs					NLDCs			
		RCA with AFG	RCA with BGD	RCA with BTN	RCA with NPL	RCA with LDCs	RCA with MDV	RCA with PAK	RCA with LKA	RCA with NLDCs
1	2007	2.30	4.52	1.18	1.53	3.29	2.18	3.83	1.29	2.25
2	2008	1.31	4.09	0.76	1.25	2.95	2.70	3.23	1.32	2.07
3	2009	1.42	3.98	1.16	1.54	2.82	2.94	3.31	1.59	2.40
4	2010	1.00	3.87	0.64	1.31	2.68	2.95	5.80	1.03	2.96
5	2011	1.45	3.75	0.62	1.17	2.49	3.45	4.83	1.43	2.38
6	2012	1.07	2.60	0.75	1.01	1.97	2.61	3.19	0.88	1.59
7	2013	1.17	2.74	0.65	1.43	2.20	3.02	3.40	0.76	1.61
8	2014	0.97	2.85	1.28	1.36	2.18	2.85	3.67	0.82	1.56
9	2015	1.14	2.27	0.88	1.57	1.92	2.44	4.26	0.84	1.75
10	2016	1.33	1.57	1.06	1.57	1.54	2.49	3.32	0.90	1.60
11	2017	1.52	2.09	1.15	1.45	1.78	2.26	2.32	1.20	1.55
12	2018	2.59	1.97	1.13	1.27	1.67	2.74	3.26	1.03	1.80
13	2019	2.30	1.66	1.28	1.32	1.53	2.92	1.90	1.03	1.29
14	2020	2.78	2.13	1.52	1.58	1.93	2.43	1.14	1.27	1.32
15	2021	3.71	3.25	1.80	1.38	2.52	1.08	2.43	1.45	1.50

Source: Computed from Trade Map, ITC

Figure IV(a): India's RCA Index in Agricultural Products with LDC Members



In 2012 when the RCA was almost equal to one, indicating that India did not have advantage in the production and trade of agricultural products with the country. It is also evident that though India had comparative advantage in export of agricultural products over the LDCs of SAARC countries as a whole, it declined from a high value of 3.29 in 2007 to 2.52 in 2021, as illustrated in Fig. IV (a).

RCA index with NLDCs reveals that India has greater comparative advantage in agricultural products with Pakistan, followed by Maldives and Sri Lanka. While the index value reached a high of 5.80 with Pakistan in 2010 and 3.45 with Maldives in 2011, with Sri Lanka it showed a comparative disadvantage from 2012 to 2016, with a less than one the value of RCA index. Further, though India had comparative advantage in agricultural products with NLDCs as a unit, it declined from 2.25 in 2007 to 1.50 in 2021. The trend in RCA index with NLDC members are depicted in Fig. IV (b), while Fig. IV (c) depicts the RCA index in agricultural products between India and LDCs and NLDCs as two units. The figure clearly indicates that India has had greater comparative advantage in agricultural products with the LDCs than with NLDCs, but both record a declining trend.

Figure IV(b): India's RCA Index in Agricultural Products with NLDC Members

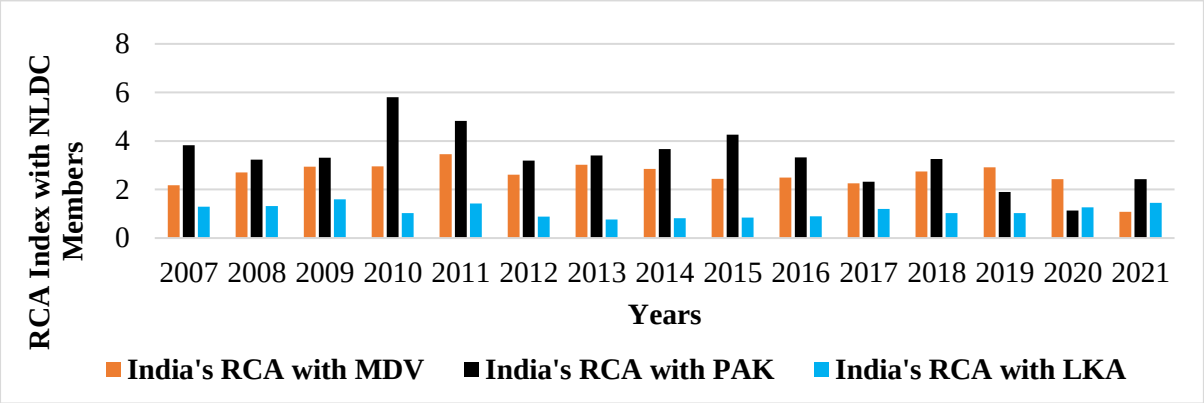
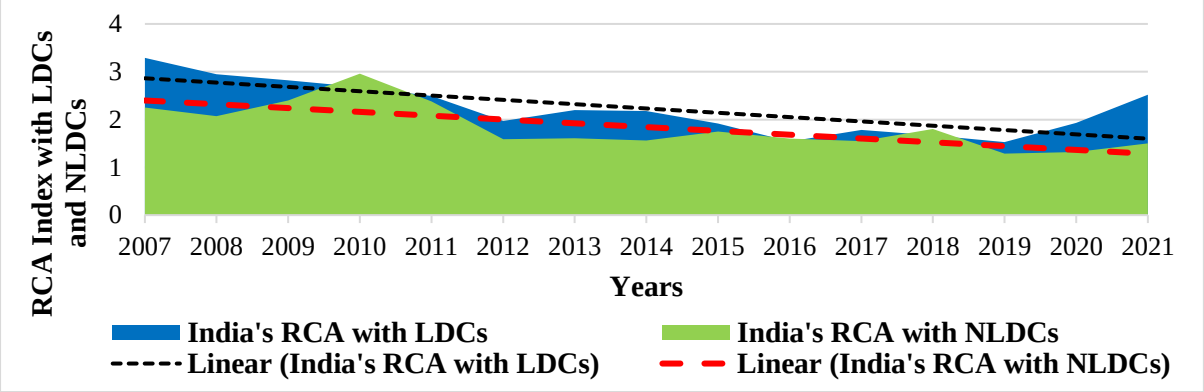


Figure IV(c): India's RCA Index in Agricultural Products with LDCs and NLDCs



5. CONCLUSION AND SUGGESTION

India is a prominent member of SAARC, accounting for 80 percent share in intra-SAARC export which is more inclined towards the LDCs due to the fact that India offered several tariff concessions to them under SAFTA. While the TII indicated a higher-than-expected trade with SAARC, it showed an increasing trend with LDCs but a declining trend in case of NLDCs. This is contrary to the South-South trade that shows greater trade velocity between developing countries (Kowalski and Shephard 2006; Athukorala 2011). However, TII with Bhutan was the highest, followed by Nepal while with Pakistan it was low and declining. This is confirmed by the findings of the earlier studies (Singla and Singh 2013; and Sharma 2022). The RCA index indicated that India had comparative advantage in export of agricultural products to Bangladesh till 2017, after which the comparative advantage in exporting to Afghanistan was greater. Among the NLDCs, though declining, India had greater comparative advantage in agricultural products over Pakistan.

In order to have uniform trade with all the members of SAARC, India should provide greater tariff concessions and reduce the sensitive list for NLDCs as well. Further, India should import from SAARC for which it should remove NTBs or impose country-specific NTBs in order to abide by the WTO rules. As Pakistan is the second largest country in the region, the political issues between India and Pakistan needs to be addressed and solved so as to make Pakistan more inward oriented to SAARC in terms of trade. It is also suggested that being the fastest growing economy in the region, India should provide technical, financial and infrastructural support to the member countries in agriculture sector to facilitate food security and intra-regional trade in SAARC.

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