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## **RIS** Discussion Papers

**Trade in IBSA Economic Cooperation:  
The Role of  
Transportation Linkages**

**Prabir De**

RIS-DP # 104



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## Trade in IBSA Economic Cooperation: The Role of Transportation Linkages\*

Prabir De<sup>#</sup>

*Abstract:* India, Brazil, and South Africa (IBSA) derive from world's three continents, which together share 20 percent of world population and 10 percent of world surface area and contribute 4 percent of world GDP and 2 percent of world trade. This paper finds that one of the strongest barriers to trade at present in IBSA appears to be the weak transport connectivity. The present study explores the possibilities of strengthening transport network in IBSA to deepen the trilateral cooperation. The paper calls for urgent task to adopt communication enhancement policy in IBSA to attain a modest growth in regional trade.

### 1. Introduction

India, Brazil, and South Africa (IBSA) derive from world's three continents and were colonized for a long period of time, respectively by Portuguese and English. Quite naturally, European culture earmarked their political and economic institutions in these three economies. All three countries predominantly reveal multicultural society, and were economically relied on a model based on State intervention in the economy. Notwithstanding those similarities, while comparatively observing the processes of economic reforms executed or under way in these countries, some questions arise:

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Why do they trade less among each other than what they do with their close neighbours? Or is it that trade complementarities among themselves are not so strong unlike to their trade dominance in their own continents? Or is it the inadequate transport linkage a cause for low intra-regional trade? This paper deals with the third proposition.

The 1<sup>st</sup> Ministerial Meeting of IBSA, held in March 2004 in New Delhi, emphasized the importance of a trilateral cooperation initiative in different sectors of these three economies. In a recent study, it was concluded that IBSA countries can reinforce the economic strength of each other by synergising their complementarities in areas of industry, services, trade and technology, which, in turn, could create a market of 1.2 billion people, 1.2 trillion dollars of GDP, and foreign trade of 300 billion dollars (RIS, 2004). This study concluded: “One of the strongest barriers to trade and investment at present between IBSA and especially between India and Brazil today appears to be the weak transport connectivity.” The study presents certain concrete action programme towards strengthening the airline and shipping linkages among the three countries. It is against this backdrop the present paper intends to explore the possibilities of strengthening communication network among these countries so as to enhance the trilateral cooperation.

To answer the above questions, this paper reviews first the trade linkages between the countries especially between India and South Africa, and India and Brazil. Since shipping and airways are the only modes connect these countries and also carry the whole merchandise trade and services, an attempt is made here to understand present profile of maritime and air transport networks in the region. Cross-country movement of goods through this network, particularly between India and South Africa, and India and Brazil, is dealt in this section. Finally, conclusions and policy implications are drawn in the last section.

## 2. Trade in IBSA

High intra-regional trade has long been recognised as being necessary for all economies aspiring to form regional trading arrangement.<sup>1</sup> Despite structural disadvantages, intra-regional trade among India, South Africa and Brazil is found to be promising; 2 percent of the three countries’ exports

**Table 1: Intra-IBSA Trade<sup>1</sup>**

(US\$ million)

Particular	1991	1995	2000	2001	2002
IBSA Exports to World	77875	105353	120456	130489	140357
Intra-IBSA Exports	420	1431	1678	2232	2673
Intra-IBSA Exports Share (%) <sup>2</sup>	0.54	1.36	1.39	1.71	1.90

*Notes:* <sup>1</sup> Taken at cif values. <sup>2</sup> As percentage of world exports.

*Source:* DOTS, Various issues, IMF.

is carried within themselves in 2002 (see Table 1). Although the volume of intra-IBSA trade is found to be low, compared to the same registered with predominant regional trading blocs, trade within these three countries has been remarkably growing at 49 percent every year since 1991.

The total US\$ 2.67 billion intra-IBSA trade in 2002 is unevenly shared by its three member countries. While the share of Brazil in total intra-IBSA trade has gone down from 78 percent in 1991 to 42 percent in 2002, that for India has consistently gone up from 5 percent in 1991 to 35 percent in 2002. South Africa’s share in intra-IBSA trade is found as inconsistent, even though the country’s share has increased from 17 percent in 1991 to 23 percent in 2002. Table 2 reveals this further.

Bilateral trade in IBSA indicates that the current rate of growth in trade within IBSA countries is higher than their overall trade performance. Since India is found as the only stable trade partner in IBSA, we emphasis more on her engagement process with South Africa and Brazil in terms of

**Table 2: Intra-IBSA Trade Share**

(%)

Countries	1991	1995	2000	2001	2002
India	5	26	30	39	35
South Africa	17	34	34	29	23
Brazil	78	41	36	32	42
Total	100	100	100	100	100

*Source:* DOTS, Various issues, IMF.

transportation services. India's 35 percent of trade share represents her 2 billion dollar trade with IBSA. Table 3 presents India's trade with Brazil and South Africa. Since 1991, India's trade engagement with IBSA is consistently growing; her 2 percent of international trade was carried out in this region in 2002, and that too has grown up from a meagre 0.59 percent in 1991. While India's trade with Brazil has been growing consistently since 1991, her total trade with South Africa has gone up from US\$ 10 million in 1991 to US\$ 797 million in 2002, with an all time high of US\$ 1462 million in 2000.

India's imports from Brazil are concentrated in certain sectors, like animal or vegetable fats and oils, and mineral products. Imports of these two sectors constitute about 78 percent of India's imports and the volumes of exports in these product categories are currently increasing steadily (RIS, 2004). India's imports from Brazil are also more stable as compared to Brazil's total exports to world during the same period. India's imports from South Africa are concentrated on certain sectors. For example, India's imports of natural or cultured pearls and jewellery cover more than 82 percent of her total imports from South Africa. About 80 per cent of India's exports to Brazil are covered by mineral and chemical products (RIS, 2004). Exports from India to South Africa are highly diversified and spread over a sizeable group of products. Exports in most important sectors include

**Table 3: India's Trade with Brazil and South Africa**

(US\$ million)

Year	Brazil			South Africa			IBSA(2)		
	EX	IM	Total	EX	IM	Total	EX	IM	Total
1991	17	194	211	6	4	10	23	198	221(0.59)
1995	98	220	318	269	171	440	367	391	758(1.17)
2000	203	192	395	304	1270	1574	507	1462	1969(2.12)
2001	543	314	857	336	955	1291	879	1269	2148(2.09)
2002	573	719	1292	365	432	797	938	1151	2089(1.81)

**Notes:** 1. Exports and imports are taken at cif and fob values respectively. 2. Data in parenthesis are India's total trade with IBSA as percentage of her total international trade, reported in percentage term. 3. EX and IM stand for exports and imports.

**Source:** DOTS, Various issues, IMF.

vegetable products, products of chemicals, machinery and mechanical appliances, and vehicles, aircraft and vessels (RIS, 2004).

From the forgoing analysis, it may be concluded that intra-IBSA trade is growing at a modest rate, and with 35 percent share in exports in the intra-IBSA trade in 2002, India has been deepening her trade relationship with South Africa and Brazil.

This brings enough reasons to investigate whether or not the region is equipped with adequate transportation linkage to enhance intra-IBSA trade. The New Delhi Agenda for Cooperation and Plan of Action for IBSA has proposed that the current level of intra-regional trade in IBSA has to be more than US\$10 billion by 2007 (Government of India, 2004). Therefore, it is imminent that we discuss the present status of connectivity, pertaining to India's transportation linkage with the rest two countries in IBSA.

### 3. Transportation Linkage in IBSA

This section reviews the transportation linkage between India and South Africa, and India and Brazil. Since shipping and airways are the only modes of transport, which connect these countries and carry the merchandise trade and services, an attempt is made here to understand present profile of maritime and air transport linkages in IBSA. Cross-country movement of goods through these networks, particularly between India and South Africa, and India and Brazil, is dealt separately.

We have seen in previous section that even though the volume of intra-IBSA trade is found to be low, compared to the same registered with predominant regional trading blocs, trade within these three countries has been growing at a modest rate every year since 1991, and India has successfully engaged herself with a consistently rising trade with South Africa and Brazil. It is widely accepted that intra-IBSA trade is mostly carried out through sea and a very negligible part by air. Hence, while making any policy formulation for enhancement of trade and services in the region, importance of maritime transport sector in integrating these three economies needs special attention.

## Ports and Shipping

Even though three IBSA economies are located in three separate continents, they are embedded with vast shipping outlets and adequate number of ports for merchandise trading. Say for instance, India, South Africa and Brazil are endowed with long coastline (5560 km. in India, 2798 km. in South Africa, and 7491 km. in Brazil), which is dotted with 81 working ports (28 of India, 7 of South Africa and 46 of Brazil). At present, these three countries together handle 1.18 billion tonnes of port traffic including 10.24 million TEUs of container (Table 4). Richards Bay in South Africa is the largest port in IBSA in terms of annual port throughput. With 91 million tonnes of traffic in 2001-02, this South African port alone shares 70 percent of total South African annual port throughput. Bulk and break bulk cargoes, coming from Indian Ocean region (India) to South Africa normally unloaded at the port of Richards Bay. This port's inherent strength is its deep water infrastructure, with a maximum permissible draught of 17.5 metres. With annual throughput of 72.62 million tonnes, the Brazilian port, namely, Tubarao, comes next to Richards Bay. India's largest port, Vizag, occupies

**Table 4: Ports of IBSA in 2003**

Countries	Coastline KM	No of Ports <sup>1</sup>	Total Cargo MT	Container Cargo MTEU	Top Ten Ports
India	5560	28	459.66	3.92	● Richards Bay (90.68), SA
South Africa <sup>2</sup> (SA)	2798	7	162.03	2.06	● Tubarao (72.62), Brazil
Brazil	7491	46	556.32	4.26	● Itaqui (67.59), Brazil
Total	15849	81	1178.01	10.24	● Santos (57.30), Brazil
					● Sao Sebastio (54.82), Brazil
					● Vizag (47.74), India
					● Kandla (41.52), India
					● Chennai (36.71), India
					● Haldia (32.36), India
					● Durban (31.74), SA

**Notes:** 1. No of major cargo handling ports. 2. Data for South Africa is reported for the year 2001-02. 2. MT and MTEU stand for million tonnes and million twenty foot equivalent units respectively. 3. Data in parenthesis are the throughput of the respective ports.

**Sources:** 1. Ministry of Shipping, Government of India for Indian ports. 2. National Ports Authority of South Africa for South African ports. 3. United Nations Economic Commission for the Latin America and Caribbean (ECLAC) for Brazilian ports.

the sixth position in the league. Some common features of few largest ports in IBSA are (a) seaports, located on the east coast of their respective countries, (b) predominantly bulk ports, thereby representing heavy reliance on bulk trade, (c) endowed with deep draught in the range between 14-18 meters, and (d) regulated by the Government.

Richards Bay (South Africa), Tubarao (Brazil), and Vizag (India) are three largest ports of three countries in IBSA, which are bulk cargo handling ports. In case of containerised cargo, the aforesaid order does not follow. With 2.14 million TEUs in 2003-04, India's Jawarlal Nehru port occupies the top position in IBSA, whereas with 1.56 and 1.29 million TEUs, Santos (Brazil) and Durban (South Africa) come next to Jawarlal Nehru port, respectively.

The low volume of intra-regional sea freight, resulting in low intra-regional maritime interdependence, might be due to a supposed lack of intensified merchandise trade. This is some way captured in Table 5. Table 5 shows that intra-regional sea freight to the extent of India's trade with rest two members of IBSA is very low (1.59 million tonnes in 2000-01 and 2.37 million tonnes in 2001-02), which accounts for only 0.52 percent of India's total sea freight. Table 5 also indicates that India-South Africa freight component alone shares more than 90 percent of total India-IBSA sea freight, which has gone up from 1.35 million tonnes in 2000-01 to 2.12 million tonnes in 2001-02. India's sea freight with Brazil is found to be very negligible.

India's port-wise trade, which is reported in Table 5, is also extended to commodity-wise (Annexure 1). It may be noted from the Annexure 1 that India imports coking coal from South Africa which is handled at Mormugao port, and also imports phosphoric acid from South Africa, which is unloaded at Kandla and Tuticorin ports. India also imports edible oil from Brazil, which is normally handled at Kandla and Jawarlal Nehru ports. Indian foodgrains to South Africa is exported mostly through Mumbai and Kandla ports, whereas petroleum coke and ores are exported to Brazil through Vizag and Chennai ports. Jawarlal Nehru, Mumbai, Mundra and Tuticorin ports handle most of the containerised traffic going to (coming from) South Africa and Brazil. Hence, except Kolkata and Haldia ports, rest of the Indian

**Table 5: Port-wise Intra-IBSA Sea Freight:  
India's Trade with IBSA**

('000 tonnes)

Ports	Year: 2000-01			Year: 2001-02		
	India's Sea Freight (Exports + Imports) with					
	South Africa	Brazil	IBSA(2)	South Africa	Brazil	IBSA(2)
Paradip	0	0	0	22	0	22
Vizag	32	4	36	66	44	110
Chennai	0	7	7	0	48	48
Tuticorin	191	0	191	69	0	69
Cochin	74	0	74	0	0	0
New Mangalore	9	0	9	8	0	8
Mormugao	431	0	431	1233	0	1233
Jawarlal Nehru	0	138	138	0	0	0
Mumbai	151	11	162	49	0	49
Kandla	453	84	537	659	169	828
Total	1341	244	1585	2106	261	2367
<b>Total (million tons)</b>	<b>1.341</b>	<b>0.244</b>	<b>1.585</b>	<b>2.106</b>	<b>0.261</b>	<b>2.367</b>

*Note:* 1. Excluding containerised traffic.

*Source:* Ministry of Shipping, Government of India.

ports have direct/indirect trade and shipping linkages with South African and Brazilian ports.

This low volume bulk sea freight (2.4 million tonnes in 2001-02) does not attract regular services of general cargo carriers. What is important is that there is high potential of bulk shipping in IBSA.

### Containerised Shipping

Unlike bulk and break bulk shipping, we have rather considerable presence of liner shipping companies in IBSA because container business volume is comparatively bigger than that of bulk and break bulk segments. To assess the liner shipping network, we have estimated the containerised traffic, generated from India's trade with South Africa and Brazil, which is reported in Table 6.

Table 6 shows that India's containerised trade with IBSA has generated approximately 97,943 TEUs in 2002-03, out of which 68 percent (66,321 TEUs) generated from India's trade with South Africa and 32 percent

**Table 6: Estimated India's Containerised Trade with IBSA**

(TEUs)

Category	2000-01	2001-02	2002-03
Exports to South Africa	9449	29135	51631
Imports from South Africa	22833	23015	14690
Total Trade with South Africa	32282	52150	66321
Exports to Brazil	2595	3185	3473
Imports from Brazil	9743	32480	28149
Total Trade with Brazil	12337	35665	31621
Exports to IBSA(2)	12044	32320	55104
Imports from IBSA(2)	32575	55496	42839
<b>Total Trade with IBSA(2)</b>	<b>44619</b>	<b>87815</b>	<b>97943</b>

*Source:* Calculated from India Trade Database, CMIE.

(31,621 TEUs) from India's trade with Brazil. Even if India's containerised trade with IBSA is too small, compared to her total global containerised trade (0.25 percent in 2002-03), there is high potential for higher containerised trade in IBSA. This potential is quite apparent if we look at the quantum jump of containerised trade in the region. India's containerised trade with IBSA is estimated as 44,619 TEUs in 2000-01, which became almost doubled in the next year. This sudden jump in containerised trade, mostly generated from trade between India and South Africa, has attracted shipping companies in the region.

Table 7 reports that operational profile of shipping lines which are operating in IBSA. Brazilian and Indian ports are not connected by any direct call service, whereas the same exists between India and South Africa, and Brazil and South Africa. There are at present 11 and 17 shipping lines operating in India-South Africa, and South Africa-Brazil sectors, respectively. Most of these lines offer "fixed-day-sailing" and operate once in a week in the containerised segment. At present, due to absence of direct calls between Indian and Brazilian ports, most of the Indian cargoes, going (or coming from) Brazil, are transhipped either at Durban (South Africa) or Dubai JA (UAE) or at Salalah (Oman). There are some common shipping lines which operate liner vessels in both India-South Africa and South Africa-Brazil sectors, such as Maersk Sealand and P&O Nedlloyd. While most of

**Table 7: Liner Services in IBSA in 2004<sup>1</sup>**

	India – South Africa	South Africa - Brazil
No of Liner Companies	11	17
Ports Connected		
<i>India</i>	Mundra, Jawarlal Nehru, Tuticorin, Mumbai	
<i>South Africa</i>	Port of Elizabeth, Durban, Cape Town	Port of Elizabeth, Durban, Cape Town
<i>Brazil</i>		Paranaqua, Santos, Itaqui, Rio Grande, Rio de Janeiro, Sao Francisco do Sul
Average Voyage Time	16-18 days	9-12 days
Frequency	1 call per week Fixed Day Sailing	1 call per week Fixed Day Sailing

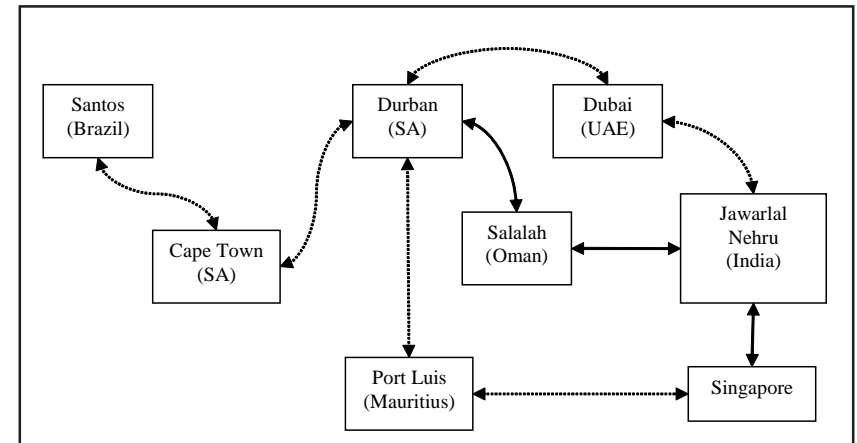
*Note.* 1. As on August 31, 2004.

*Source:* CI Online, Containerisation International, Informa UK Ltd., London.

Maersk vessels, originating from Brazil and coming towards South/Southeast Asia, cross Atlantic, P&O Nedlloyd’s vessels normally cross Pacific and then to Hong Kong, Singapore and finally to South Asia. There is also one established shipping conference in India and South Africa, named “Indian Ocean Vessel Sharing Agreement”, participated by P&O Nedlloyd and Gold Star Line, which is formed to handle container traffic between South/East Africa to Indian Subcontinent/Middle East. The liner shipping network in IBSA is shown in Map 1.

It may be concluded from the foregoing analysis that intra-IBSA sea freight is not substantial. There is some sort of inter-linkage in the non-containerised trade between the ports of India, South Africa, and India and Brazil, and the same is more intensified in case of containerised trade. Hence, one of our prime tasks would be to remove the inconsistency in

**Map 1. Liner Shipping Network in IBSA**



*Source:* Drawn by author.

shipping by encouraging more merchandise trade in IBSA. Over and above, by forming a regional shipping network, “IBSA Liner Network”, is likely to pave the way in achieving an intra-regional maritime network enhancement process. The foregoing analysis also calls for an urgent effort to form a regional shipping conference in IBSA.

It is found that there is no existence of any direct shipping services, particularly between Brazil and India. As on date, only 2 liner services that serve India-South Africa coast also call in South Africa-Brazil. In addition, due to the increase in transshipment services, trade between India and Brazil is slowly becoming uncompetitive. Nonetheless, there exists good potential to promote intra-regional trade by integrating liner shipping companies and also by improving transport services.

**Transportation Costs**

Recent literature has emphasized the importance of transport costs and infrastructure in explaining trade, access to markets, and increases in per capita income. A possible explanation for the low intra-regional trade might be a supposed presence of high transaction costs. There are ample studies which show that higher the volume of intra-regional trade, better the



economies of scale in transportation and lower the transaction costs. In case of IBSA, we have encountered not only with low volume of intra-regional sea freight but also involved in multiple transshipments and high incidence of transport costs.

The intra-regional transportation cost in IBSA is abysmally high, perhaps due to high frequencies of transshipment. Poor performance of ports also adds to the cost of transportation. Table 8 reports the inter-continental transportation costs in IBSA. As usual, India's imports from Brazil (and also Brazil's imports from India) involve higher transportation costs compared to the same generated out of their respective bilateral trade with South Africa. Since, India and Brazil are located at the two extreme points in IBSA, and due to absence of direct shipping linkage between the two countries, average 12 percent of total value of their imports (US\$ 86 million for India and US\$ 65 million for Brazil) from each other in 2002 incurred as transportation costs. Higher transportation costs makes imports costlier, which negatively affect the growth of intra-regional trade. Hence, efforts should be initiated to minimize the transportation costs, failing which growth of intra-regional trade is very like to hamper.

### Airways

Air transport sector is one of the fastest growing industries in IBSA. In 2002, IBSA generated 2.46 percent of world air freight, carried 3.86 percent of world air passengers, and operated 1 million aircrafts (see Table 9). In terms of aforesaid three indicators, Brazil stands as the largest country in

**Table 8: IBSA Transportation Costs in 2002<sup>1</sup>**

Sector	Costs (%)
India's Import from Brazil	12.24
India's Import from South Africa	8.78
Brazil's Import from India	11.73
Brazil's Import from South Africa	10.00
South Africa's Import from India	9.20
South Africa's Import from Brazil	10.00

*Notes:* 1. Calculated based on [(cif/fob)-1]\*100. 2. Data on South Africa and Brazil are adjusted with usual cif factor as noted in DOTS.

*Source:* DOTS, 2004, IMF.

IBSA. It alone carries IBSA's 55 percent air freight, 58 percent passengers, and 68 percent aircrafts in 2002. While India's shares in air freight and air passengers are found to be static in last three reported years, more and more airlines are now started calling India, resulting which her share in terms of total no of airlines, operated in IBSA, has gone up from 21 percent in 1999 to 24 percent in 2002. Apparently this growth was influenced by the rise of domestic air transport sector, opening of economies coupled with growing services sector (such as tourism and information technology). Say for example, with average age of 4 years of every fleet, South Asian Airways (SAA) is aiming to become world's youngest fleet operator by 2005. Looking at the growth of the air transport market, SAA has placed an order to buy 11 new A319-100 series aircrafts, 2 new A340-600 series aircrafts, and 3 new A340-300e series fleets, which all are expected to become operational by 2005. This is perhaps the largest acquisition of fleet by any single airline in a single year in the civil aviation sector in the world. Brazilian Airways

**Table 9: Air Transport Sector in IBSA**

Series Name	Countries	2000	2001	2002
Air freight (million tonnes per km)	Brazil	1534.50	1467.40	1539.70
	India	547.70	518.50	549.90
	SA	687.60	755.50	782.50
	IBSA	2769.80	2741.40	2872.10
	World	117956.80	110704.30	116625.50
	<b>IBSA share (%)<sup>1</sup></b>		<b>2.35</b>	<b>2.48</b>
Air passengers carried (million)	Brazil	32	34	36
	India	17	17	18
	SA	8	8	8
	IBSA	57	60	62
	World	1656	1808	1615
	<b>IBSA share (%)<sup>1</sup></b>		<b>3.45</b>	<b>3.30</b>
Aircraft departures (No)	Brazil	617800	654100	627900
	India	198500	216700	242100
	SA	110400	122600	122000
	IBSA	926700	993400	992000
	World	21324700	26639600	20481000
	<b>IBSA Share (%)<sup>1</sup></b>		<b>4.35</b>	<b>3.73</b>

*Note:* 1. Share in world.

*Source:* World Development Indicators CD ROM 2004, World Bank.

(named as Varig Brazil) and Air India are also stepping forward to strengthen their respective fleet sizes and international networks. In general, all the three airlines in IBSA are desperately looking to strengthen their fleets, alliance partners, and opening new operations.

Although the air transport sector has been playing a greater role in integrating the three economies, there is a missing link in direct air connectivity between India and Brazil, due to which, South Africa has been found as one of the preferred transit point for passengers moving between India and Brazil. In so far as fleet strength is concerned, SAA, which is fully privatised, comes in leading position. With 59 own fleets in the international sector, SAA serves 88 international destinations individually and more than 600 along with its alliance partners in the current year (see Table 10), even though it has less alliance partners than Varig and Air India. It amply indicates that SAA has been performing well for quite sometime now, and its experiences can be extended to IBSA for further consolidation of the air transport industry in the region.

At present, except SAA, no other airlines from India and Brazil fly in IBSA. SAA has direct non-stop flights to Mumbai in India and Sao Paolo in Brazil. Therefore, SAA is found as most convenient airline in terms of travelling time, mostly to those who are going to South Africa or to Brazil (Table 11). To enhance movement of air passengers in IBSA, one may need to look into the cost of travelling and also the travelling facilities because competition among airlines and alternate traffic routings have increased in recent years.

**Table 10: Airlines Performance Indicators in IBSA**

Particulars	SAA	Air India	Varig
No of International Own Fleets	59	34	45
International Destinations Served	88	28	54
Alliance Partner	11	15	14
Member of Star Alliance	No	No	Yes

*Note:* 1. Without any code sharing.

*Sources:* Individual web sites of the Airlines.

**Table 11: Operation of South African Airways in IBSA\***

Sector	Frequency	Fleet Type	Capacity	Travel Time
Mumbai – Johannesburg	<ul style="list-style-type: none"> <li>• 4 flights per week</li> <li>• Non-stop</li> </ul>	A340-200	236 passengers <ul style="list-style-type: none"> <li>• 42 business class</li> <li>• 194 economy class</li> </ul>	8 hours
Mumbai				
Johannesburg	<ul style="list-style-type: none"> <li>• Daily</li> </ul>	A340-300	269 passengers <ul style="list-style-type: none"> <li>• 38 business class</li> <li>• 231 economy class</li> </ul>	10 hours
Sao Paolo	<ul style="list-style-type: none"> <li>• Non-stop</li> </ul>			
Johannesburg				

*Note:* \* As on November 2004.

*Sources:* Individual web sites of the Airlines.

Even though there is price competition among the airlines, operating to and from Africa and Middle East, SAA has witnessed 18 percent jump in passenger traffic in 2002-03 compared to the previous year. This finally helps us to estimate that SAA is operating at average 75 percent occupancy, which is quite higher than other airlines doing business in this sector (see Table 12). Seeing the rise in passenger traffic, SAA is all set to start another flight from Mumbai to JNB in 2005. SAA is also planning to start a new flight from New Delhi to JNB in 2005. According to SAA, on an average, 20 percent of total passengers carried in a year in India-South Africa sector (specifically Mumbai to JNB) by SAA also travel to Brazil using JNB as transit point. This shows that volume of air passengers between Indian and Brazil is not substantial.

The air transport sector in IBSA is large enough to raise each individual countries presence in the international civil aviation sector. Greater cooperation will help them to attain this objective. Sharing each other's experiences will certainly enhance IBSA's competitiveness in the international air transport market when this region alone shares 2.5 percent of world air freight and 4 percent of international air passengers. To enhance travelling within IBSA, MERCOSUR Civil Aviation Plan, which allows passengers, coming from MERCOSUR, to travel the region without much hassle, could be of great help.

In regard to air transport sector, governments in IBSA should also aim at providing adequate capacity in accordance with demand by first restructuring of their national carriers and maximizing their equal participation in the IBSA air transport segment. Adequate capacity in air transport network will certainly ensure development of trade and tourism

**Table 12: Passengers and Freights Carried to and from India by SAA**

Year	Passenger No	Freight Tons
2000-01	53,683	1,533
2001-02	54,542	1,147
2002-03	64,810	901

**Source:** Air Transport Statistics 2003, Director General of Civil Aviation, Ministry of Civil Aviation, Government of India

in IBSA. Liberal regional rights should also be given for promoting international operations to less developed regions in IBSA as well as to ill-connected two extreme countries (e.g. India and Brazil) in IBSA to promote trade and tourism.

Governments in IBSA should establish an objective and well-defined mechanism for sharing of international traffic rights amongst airlines in a transparent manner so that people in the region can avail more international flights going to (or coming) from Asia, Africa or Latin America. Efforts should also be made by each other's national carriers, following Varig, to join global alliances in their own commercial interest and in the interest of travelling passengers through code-sharing, exchange of frequent-flier programmes, etc. Governments in IBSA may also consider tourist charters from domestic airports to foreign destinations in IBSA subject to safeguards for scheduled operations.

#### 4. Concluding Remarks

The foregoing analysis clearly indicates that there are ample opportunities to growth in maritime and air transport sectors in IBSA. In general, we have seen that maritime and air linkages between India and South Africa, and South Africa and Brazil are stronger than that between India and Brazil. There are potentials for higher growth in air and maritime transport sectors between India and Brazil provided we strengthen the transportation linkages between the countries in IBSA. Governments in IBSA should try to remove the structural asymmetries in the air and maritime transportation sector, which are found to be quite significant and pose barriers to regional trade.

The goal of increased trade in IBSA has to overcome a number of obstacles: attractive package for transportation exchange has to be identified, a way has to be found to reduce transport costs for such products and the commercial links between the countries have to be strengthened.

The need for the deepening of commercial linkages between the three continents should also be emphasized. Member countries in IBSA must agree on the need to combine the efforts of the public and private sectors and relevant specialised organisations to facilitate *inter alia* coordination between

shipping companies, provide improved information on trade flows, identify hubs and improve port infrastructure.

The role to play for ports, shipping services, airways and improved transport links will be an essential element of further progress.

The new element in the equation is the emergence of a geographically dispersed range of ports offering transshipment services. This offers the possibility of providing even the smaller destinations with access to increased regional trade. The principal transshipment ports on the basis of geography for the IBSA trade should be at Durban or Cape Town in South Africa.

The transshipment ports need to be linked by connector shipping services, for example, from Jawaharlal Nehru in India. Additional feeder services are needed from the transshipment ports to final destinations. Transport costs may be lower with a pattern of main-line services, connector services and feeder services, concentrating on fewer routes and ports, rather than the present confusion of roles.

The existence of frequent and inexpensive liner shipping services does have a positive impact on trade and integration in IBSA. Higher frequencies are linked to lower transport costs. Hence, with regard to trade in IBSA, more improved services would also promote intra-regional trade. It appears today that there are actually not many services and options available in IBSA. Trade between India and Brazil increasingly involves at least one transshipment and often mainlines shipping companies connect to the region's economies at the same transshipment port for IBSA. It can be expected that transshipment in the IBSA will continue to grow, with the positive side effects of generating income for those ports and countries which supply such transshipment port services, and simultaneously helping the region's shippers to get access to additional transport options within and outside the region.

Existing trade flows are small, freight rates are high and services frequencies and journey times are in general unsatisfactory in IBSA. What is needed is a programme to encourage merchandise trade, through additional contacts between the exporters and importers of the three countries and by

the alleviation of present transport-related obstacles. Cheaper transport between the ports in IBSA should be the priority.

Contacts between trade associations and others concerned with trade among the IBSA countries should be encouraged. The officially sponsored bodies for the promotion of exports, which exist in nearly all the countries concerned, have an important role in promoting such contacts.

What can be done to improve transportation linkages in IBSA? First we can encourage micro-level cooperation among leading transport operators of the three countries, primarily in maritime, air and railways sectors because countries in IBSA have immense opportunity to learn from each other's experiences. Say for example, India's experiences in automation of railways can be extended to South Africa and Brazil. Similarly, India and South Africa can also learn from Brazil in introducing private capital to improve efficiency. We should encourage to form commercial venture among three leading logistics operators from three IBSA countries. Say for example, formation of any commercial logistics venture among Container Corporation (India), Transnet Ltd. (South Africa), and Companhia Vale do Rio Doce (Brazil) could be of great boost to closer transport cooperation in IBSA. While CONCOR and Transnet are public sector companies, CVRD is Brazil's largest logistics company in private sector.

Similarly, Air India can learn from the success of South African and Varig Airways. Here also apart from code sharing, joining together to promote trade and tourism and to exchange technical experiences will certainly pave the way in sustaining closer cooperation.

There are also opportunities for all the three countries to induce cost-effective and quality shipping, provided they establish a regional shipping service for IBSA. Experience in the area with shipping lines such as WISCO in the Caribbean and with Namucar in Central America may be explored. We should always be careful that such a service should lead to generate profits. A variant of this idea envisages the creation of a joint public-private Non Vessel Operator (NVO). However it would be seen more promising

for governments to improve the conditions under which the existing NVOs operate, than to enter the business themselves. Unlike infrastructure investments, international transport services are not usually suitable to be provided by the public sector. This does not mean, however, that the public sector has no options to promote regional integration. India, with its renowned maritime training institutes, can offer modern maritime training to seafarers of South Africa and Brazil. Similarly, South Africa's wide experiences of port management can also be extended to Indian ports. Some following activities would be beneficial to trade in this region in general.

- Work to reduce transport costs through international benchmarking and the provision of better information to shippers. A regional data base might help to set benchmarks and encourage improvements.
- General work to alleviate other transport restrictions in the fields of telematics, facilitation and port and labour reform. Indian and Brazilian ports, in particular, could learn from successful reforms from South African ports.
- A regional legislations in IBSA should be supportive of the NVOs and multimodal transport providers, with the identification of obstacles to their more effective functioning. UNCTAD is currently carrying a consultation exercise in this area.
- The public and academic sector could cooperate with service providers in the identification of ways to improve the linkage between main-line and feeder services at the different transshipment points, through common feeder services or other mechanisms.

Whilst high transport costs are not the only reason for present low intra-regional trade levels in IBSA, they are a contributory factor. Transport is playing an increasing role in the countries' competitiveness in each others' markets. Realization of the potential for increased trade in IBSA will require action both by the private sector and by the concerned public sector institutions.

To attain this object, governments in IBSA should enhance cooperation leading to achieve higher intra-regional trade. One urgent task is to bring communication enhancement policy in IBSA. If such a modest degree of

policy harmonization or centralized oversight cannot be secured, it is hard to imagine that there will be progress toward deeper trilateral cooperation in IBSA.

## References

- Anderson, Kym, and Hete Norheim. 1993. "History, Geography and Regional Economic Integration." In Kym Anderson and Richard Blackhurst (eds.) *Regional Integration and the Global Trading System*. New York: St. Martin's Press.
- Balassa, Bela. 1989. *Comparative Advantage, Trade Policy and Economic Development*. London: Harvester Wheatsheaf.
- Baldwin, Richard E. 1993. "On the Measurement of Dynamic Effects of Integration". *Empirica-Austrian Economic Papers*, Vol. 20, pp. 129-145.
- Ben-David, Dan. 1996. "Trade and Convergence among Countries". *Journal of International Economics*, Vol. 40, pp. 297-298.
- Government of India. 2003. *Air Transport Statistics 2003*. Director General of Civil Aviation, Ministry of Civil Aviation.
- Government of India. 2004. *Report of the Trilateral (India-Brazil-South Africa) Commission Meeting*. IBSA Dialogue Forum, March 4-5, 2004, New Delhi.
- Research and Information System for Developing Countries (RIS). 2004. *India-Brazil-South Africa (IBSA) Economic Cooperation: Towards an Action Programme*. Interim study report prepared for the Ministry of Commerce and Industry, Government of India, New Delhi.

**Appendix 1: India's Cargo-wise and Port-wise Sea Traffic with IBSA: 2000-2002**

Indian Ports	Cargo	2000-01		2000-01		2000-01		2001-02		2001-02		2001-02	
		Import SA	Import BRZ	Export SA	Export BRZ	Import SA	Import BRZ	Export SA	Export BRZ	Import SA	Import BRZ	Export SA	Export BRZ
Paradip Vizag	Misc.												
	FRM (Dry)	32				18				22			
	FRM (Liquid)					30							
	Foodgrains									18			
	Granite Blocks			4									
Chennai	Petroleum coke												44
	Other cereals		3										
	Iron & Steel (Mfkd.)		1										
	Chemicals		2		1								38
	Other ores												
Tuticorin	Iron scrap								10				
	Phosphoric acid	21		3		20							
	Industrial coal	85											
	Timbers and logs	49				49							
	Misc	33											
Cochin	Coal	74											
	Timbers and logs	9								8			
Mormugao	Coal (Thermal)	299											
	Coking coal	132				1233							

*Appendix I continued*

*Appendix I continued*

Indian Ports	Cargo	2000-01		2000-01		2000-01		2001-02		2001-02		2001-02	
		Import SA	Import BRZ	Export SA	Export BRZ	Import SA	Import BRZ	Export SA	Export BRZ	Import SA	Import BRZ	Export SA	Export BRZ
Jawarlal Nehru	Edible oil		138										
Mumbai	FRM (Dry)	99				15							
	Iron & Steel					29							
Kandla	Foodgrains			52						5			
	Edible oil		11										
	Edible oil		75						169				
	Chemicals		9			69							
	Phosphoric acid	157				183							
	Coal (Thermal)	278											
	Coal (others)					182							
Timbers and logs	Timbers and logs					30							
	Foodgrains (Rice)			13						166			
Foodgrains (Wheat)	Foodgrains (Wheat)									10			
	Containers	4				11				8			
Misc.	Misc.	1											
	Total	1273	239	68	5	1869	179	237	82				

*Source:* Ministry of Shipping, Government of India.

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