

# Regional Transit Agreement in South Asia

## An Empirical Investigation



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## Acronyms and abbreviations

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ADB	Asian Development Bank
APTTA	Afghanistan–Pakistan Transit Trade Agreement
ASYCUDA	Automated System for Customs Data
ATTA	Afghanistan Transit Trade Agreement
CDS	Kolkata Dock System
CONCOR	Container Corporation of India
CRS	Constant returns to scale
DEA	Data Envelopment Analysis
DMUs	Decision Making Units
EU	European Union
GATT	General Agreement on Tariffs and Trade
HDC	Haldia Dock Complex
ICP	Integrated check post
ICT	Information and communication technology
IGG	Inter-Governmental Group
KoPT	Kolkata Port Trust
LDCs	Least-developed countries
LLDCs	Landlocked developing countries
MFN	Most-favoured nation
NER	Northeastern Region
NTBs	Non-tariff barriers
SAARC	South Asian Association for Regional Cooperation
SAEU	South Asian Economic Union
TEUs	Twenty-foot equivalent units
TFA	Trade Facilitation Agreement
UN	United Nations
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
VRS	Variable returns to scale
WTO	World Trade Organization

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## Executive summary

Goods produced by South Asian countries, particularly the least-developed countries (LDCs), do not find adequate market access in the region and abroad due to high transportation time and costs. There is lack of a regional transit arrangement, and trade procedures—mainly at borders—are not simplified and harmonized. There is also absence of modern corridor management techniques in selected corridors in South Asia.

Efficient transit arrangement can significantly reduce transport cost and/or travel time, and consequently influence production as well as household consumption. This results in substantial redistribution effects among economic groups and also among regions through better use of resources and rise in productivity. Reduction in transport cost and time will decrease the price of products, which enables consumers to include additional products—including those produced within the region—in their consumption baskets. Moreover, efficient transit arrangement facilitates trade of intermediate goods, which enables economies to integrate themselves into the regional/global supply chains and thus raise overall productivity.

A regional transit arrangement in South Asia is a precondition for higher intra-regional trade. Moreover, having a regional transit arrangement would also help South Asian countries comply with their international commitments such as General Agreement on Tariffs and Trade (GATT) Article V and the Trade Facilitation Agreement (TFA) of the World

Trade Organization (WTO). Considering that improved rules on transit in TFA can facilitate deeper integration in South Asia, countries should exploit this opportunity to implement new transit rules in support of regional integration.

However, some argue that it is difficult to take a regional approach to enhanced integration in South Asia, including on transit matters, due to political-economy factors. Therefore, they argue that countries can move forward the regional integration agenda through a sub-regional approach. Regarding transit also, South Asian countries can have a regional transit arrangement by first having a sub-regional transit arrangement in place.

This study chose five overland SAARC corridors for analysis: i) Corridor 1 (Lahore to Agartala); ii) Corridor 2 (Kathmandu to Kolkata/Haldia); iii) Corridor 3 (Thimphu to Kolkata/Haldia); iv) Corridor 4 (Kathmandu to Mongla/Chittagong); and v) Corridor 8 (Thimphu to Mongla/Chittagong). Of all these, the study found that Corridor 1 is the most efficient.

Currently, there are high variations among South Asian countries in trade facilitation performance. Strengthening SAARC Corridor 1 with investment in cross-border infrastructure, transit and trade facilitation measures would help the region improve the efficiency of transport corridor and supply chain connectivity. Intuitively, a stronger network of supply chains would be essential for strengthening value chains and regional integration.

In having a regional transit arrangement, South Asian countries should move beyond the existing pseudo-bilateral transit arrangements in order to improve intra-regional connectivity. Moreover, to make the regional transit arrangement effective, South Asian countries should encourage private sector logistics providers to handle containerized cargo on a “door-to-door” basis across the region. Necessary support, such as insurance to shippers, should also be provided.

South Asia can learn from experiences of countries/regions having such transit arrangements in place, such as transit agreement between Denmark, Norway and Sweden; South Africa and Mozambique; and member countries of the European Union, among others. A Trade

and Transport Facilitation Monitoring Mechanism may be considered at the regional level to monitor the implementation of trade transit corridors. Importantly, the SAARC Secretariat and other relevant institutions need to be strengthened and empowered to effectively implement and monitor the regional transit agreement in South Asia once it is in place. Finally, considering that a regional transit arrangement is *a priori* in order to achieve the goal of South Asian Economic Union (SAEU), there is a need for South Asian countries to adopt a single regional transit procedure for seamless movement of vehicles across the region. Well-developed transit arrangements would also transform SAARC Road Corridors into SAARC Economic Corridors, which is necessary for South Asia.

# Introduction

Among the fast growing regional trading blocs in the world, South Asia is distinctive for its failure in raising the share of intra-regional official trade above the historic 5 percent figure. While other regional trading blocs have grown by, among others, facilitating trade within the region through better transit facilities, South Asia has relied, to a greater extent, on trade liberalization with negligible focus on trade facilitation.

Some studies have shown that improved trade facilitation would enhance regional trade in very much the same way as tariff liberalization.<sup>1</sup> Moreover, transit facilities, which are part of trade facilitation measures, can transform “landlocked” countries into “land-linked” ones. Transit is an intrinsic element of any cross-border movement of goods and vehicles, and yields significant influence on national and regional economies. Seamless movement of goods and services would help reduce trade transaction costs and time. In South Asia, regional transit is therefore a key to regional connectivity and integration. With an increasing emphasis on administrative reforms, governance and security in the region, there is an urgent need for a regional transit agreement in South Asia.

Three types of trade facilitation reforms are currently underway in South Asian countries. First is the modernization of their customs administration and management through accession to and alignment with the Revised Kyoto Convention and implementation of the SAFE Framework of the World Customs Or-

ganization. Second, they have been trying to streamline and make transparent their trade processes and procedures through, *inter alia*, the Automated System for Customs Data (ASYCUDA) World, National Electronic Data Interchange and Single Windows. Third, South Asian governments have been providing improved services and information to traders through trade portals, and formation of trade facilitation committees, among others.

Regrettably, the trade facilitation measures implemented by South Asian countries have mostly been driven by their bilateral and/or unilateral commitments. Unlike in the case of the European Union (EU), regional trade facilitation measures have thus far been near-absent in South Asia. Owing to the lack of a common region-wide set of trade facilitation measures and non-existence of any single regional standard in South Asia, progress has been limited to individual country initiatives, undertaken mainly as part of national agendas, for example, e-Customs.

Member countries of the South Asian Association for Regional Cooperation (SAARC) have reiterated a number of times the importance of trade facilitation, including transport facilitation and transit, to enhance intra-SAARC trade. A SAARC Regional Multimodal Transport Study was also undertaken with an objective to strengthen transport connectivity in the region. However, implementation of the recommendations of the study remains much to be desired.

*Trade facilitation measures implemented by South Asian countries have mostly been driven by their bilateral and/or unilateral commitments.*

*As some argue, South Asian countries can move forward the regional integration agenda through a sub-regional approach.*

Another initiative taken by SAARC member countries to introduce a mechanism of regional transport facilitation was through putting in place the SAARC Motor Vehicles Agreement and SAARC Regional Railways Agreement. These were expected to be signed at the 18th SAARC Summit held in Kathmandu in November 2014. However, SAARC countries failed to sign them, although they agreed to hold a meeting of their transport ministers by end February 2015 to finalize the Agreements for approval. Nevertheless, signing of these Agreements only will not be enough. These need to be complemented by signing a regional transit agreement.

As some argue, it is difficult to take a regional approach to enhanced integration in South Asia, including on transit matters, due to several political-economy factors. Therefore, they argue that countries can move forward the regional integration agenda through a sub-regional

approach. In that context, the objective of this paper is to assess the potential gains of a sub-regional transit arrangement and the removal of other border-trade barriers, with special emphasis on the eastern South Asia sub-region, which includes Bangladesh, Bhutan, India and Nepal. The paper has been arranged as follows.

Chapter 2 discusses the link between transit and trade flows. Profile of intra-regional transit trade is briefly presented in Chapter 3, followed by the discussion on current transit arrangements in South Asia in Chapter 4. Chapter 5 identifies efficient regional transit corridors through the use of linear programming (DEA model). An attempt to estimate the revenue that would be generated by having a sub-regional transit arrangement is presented in Chapter 6. The final Chapter assesses the policy implications of a sub-regional transit arrangement and concludes the paper.

# Transit and trade flow

Goods produced by South Asian countries, particularly the least-developed countries (LDCs), do not find adequate market access in the region and abroad due to high transportation time and costs. There is lack of a regional transit arrangement, and trade procedures—mainly at borders—are not simplified and harmonized. There is also absence of modern corridor management techniques in selected corridors in South Asia. Moreover, there is no fast track lane and priority for goods in transit to cross borders. In some border posts, there is lack of Standard Operating Procedures resulting in excessive time and costs in handing goods and vehicles.

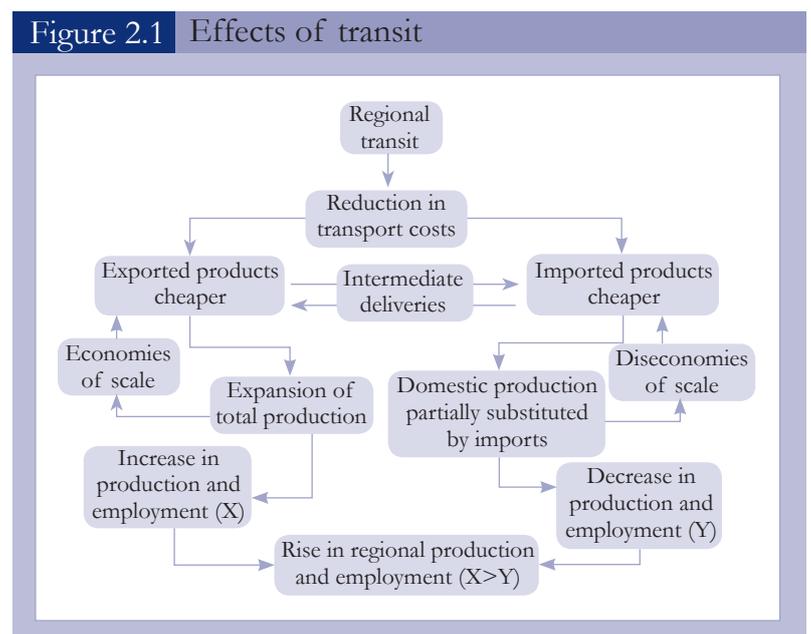
An efficient transit arrangement can significantly reduce transport cost and/or travel time, and consequently influence production as well as household consumption. This results in substantial redistribution effects among economic groups and also among regions through better use of resources and rise in productivity. In general, as illustrated in Figure 2.1, transit leads to a decrease in transportation costs, which subsequently increases transport volume. The net regional effects of this are difficult to predict in a more-than-one-sector model as intermediate deliveries between the countries in a particular region or between the regions within a country play a complicating role. When both import and export become cheaper as an effect of lower transportation cost, net effect would be difficult to assess if we do not know the internal trade of intermediate products between the export and im-

port sectors within a country. In addition, there may be compensating forces in the regions in which employment is negatively affected by increased competition, particularly when there is a rise in imports.

Nevertheless, reduction in transport cost and time will decrease the price of the products, which enables consumers to include additional products—including those produced within the region—in their consumption baskets. Moreover, efficient transit arrangement facilitates trade of intermediate goods, which enables economies to integrate themselves into the regional/global supply chains and thus raise overall productivity. However, regional transit arrangement is a *sine*

*An efficient transit arrangement can significantly reduce transport cost and/or travel time, and consequently influence production as well as household consumption.*

Figure 2.1 Effects of transit

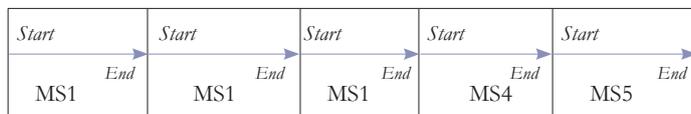


Source: Prabir De.

**Figure 2.2** Transit procedure for South Asia

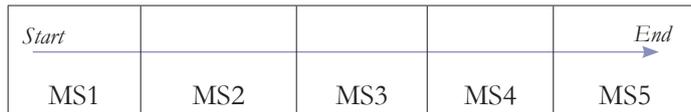
a) Traditional transit procedure:

A series of standardized national transit procedures



b) Proposed transit procedure:

A single procedure from start to finish



Note: MS—Member state of a regional cooperation bloc.

Source: Prabir De.

South Asian Economic Union (SAEU), there is a need for South Asian countries to adopt a single regional transit procedure for seamless movement of vehicles across the region (Figure 2.2).

Realizing the urgent need to enhance intra-regional trade in South Asia, SAARC leaders have emphasized the potential of an integrated transport and transit system for the entire region.<sup>2</sup> They have stressed that higher intra-regional trade cannot be achieved until and unless the physical infrastructure and appropriate customs clearance and other trade facilitation measures, including multi-modal transport operations, are in place. Additionally, they have pointed out that an uninterrupted overland connectivity is equally important.

A number of studies have shown that economies with geographical contiguity could potentially benefit substantially from higher trade, provided trade and transport barriers are removed through a regional transit arrangement (as in the EU). However, the road to full implementation of a regional transit arrangement is not without challenges. Some studies have identified several challenges related to the implementation of the provisions in the General Agreement on Tariffs and Trade (GATT) on transit and trade facilitation in the context of South Asia.<sup>3</sup> Concerns are also being raised regarding the implementation of the Trade Facilitation Agreement (TFA) of the World Trade Organization (WTO), which has a provision on transit for trade in goods.<sup>4</sup>

*qua non*, but not a panacea for regional growth and greater intra-regional trade for the benefits of a transit arrangement cannot be fully realized in the absence of quality trade infrastructures within the region.

Regional transit arrangement in South Asia is critical to intra-regional trade flow. Although some South Asian countries enjoy bilateral transit facility, the current transit arrangement is not very supportive to intra-regional trade. The overall economic performance of many South Asian countries in recent years has been impressive, but there is rising concern that increasingly stubborn attitude towards regional transit may limit the potential for regional growth and the scope of regional integration. Considering that a regional transit arrangement is *a priori* in order to achieve the goal of

*Benefits of a transit arrangement cannot be fully realized in the absence of quality trade infrastructures in all countries of the region.*

# Transit trade in South Asia

Tariff barriers have gradually declined in South Asia, although high tariffs still exist in certain sensitive products. Rather, there is a strong presence of non-tariff barriers (NTBs) overall, which, in a broad sense, includes trade facilitation- and transit-related barriers as well. In particular, high transportation costs act as a serious constraint to enhancing merchandise trade flow in the region (De 2008; De 2009a). In addition, poor institutions, inadequate infrastructure—mainly the lack of modern warehouse/container handling facilities at borders, and the near absence of regional transit trade—are restricting the growth of intra-regional trade in South Asia.<sup>5</sup>

Problems emanating from the lack of effective transit arrangements are more pronounced in landlocked developing countries (LLDCs). Lack of territorial access to seaports, remoteness and isolation from world markets have substantially inflated transportation costs in LLDCs, thus lowering their effective participation in international trade and contributing to widespread poverty (UNCTAD 2005). They are also confronted with a variety of practical constraints that have significantly increased their logistics costs of trade.

In South Asia, three countries, namely Afghanistan, Bhutan and Nepal, are LLDCs, which depend solely on their neighbours for transit to access regional and international markets. For example, Bhutan and Nepal rely heavily on India's eastern coast for their international

trade, while Afghanistan relies on Pakistan for transit. Due to several bottlenecks, including those visible at border crossings, trade corridors and transit ports, Afghanistan, Bhutan and Nepal face substantial trade costs, much of which can be avoided if a regional transit trade regime is restored in South Asia (UNCTAD 2004).

Considering that trade-reducing effects of high transport costs are the strongest for transport-intensive activities (De 2009b; De 2009c), in which most South Asian LLDCs are engaged in, they have smaller export baskets and limited access to markets since the burden of high transportation costs limits the range of potential exports and markets in which the goods can be competitively and profitably traded. Moreover, the price of imports also tends to increase because of high transit transportation costs, which in turn contributes to higher prices of export products (De 2009b).

South Asian LDCs, mainly Bangladesh, Bhutan and Nepal, have highly concentrated export and import markets. Nepal exports about 63 percent of its total exports and imports about 53 percent of its total imports to/from Bangladesh, Bhutan and India. On the other hand, relatively larger Bangladesh sources nearly 14 percent of its global imports from Bhutan, India and Nepal, but exports only about 3 percent of its total exports to these countries (Tables 3.1 and 3.2, next page). Bhutan's trade is highly India-centric. It sources about 72 percent of its imports from India and sells

*Lack of territorial access to seaports, remoteness and isolation from world markets have substantially inflated transportation costs in LLDCs.*

	1991	2000	2006	2012
<b>Export to</b>				
Bangladesh	0.12	1.90	3.24	33.72
Bhutan	0.00	0.00	0.00	3.06
India	17.45	307.20	562.98	515.75
Total (above three)	17.57	309.10	566.22	552.53
Global exports	257.30	720.70	829.59	872.16
Share in global exports (%)	6.83	42.89	68.25	63.35
<b>Import from</b>				
Bangladesh	12.70	8.10	1.45	19.99
Bhutan	0.00	0.00	0.00	4.33
India	85.01	574.20	1,481.51	3,364.81
Total (above three)	97.71	582.30	1,482.96	3,389.13
Global imports	500.14	1,570.30	2,397.69	6,439.22
Share in global imports (%)	19.54	37.08	61.85	52.63

Source: Authors' calculation based on IMF DOTS database.

	1991	2000	2006	2012
<b>Export to</b>				
Bhutan	0.30	0.90	3.65	4.19
India	22.80	50.13	168.11	519.97
Nepal	11.54	1.32	2.35	18.18
Total (above three)	34.64	52.35	174.11	542.34
Global exports	1,687.51	5,589.58	1,1650.80	2,2250.80
Share in global exports (%)	2.05	0.94	1.49	2.44
<b>Import from</b>				
Bhutan	3.90	4.53	10.69	21.44
India	189.49	945.45	2,061.71	4,704.23
Nepal	0.14	3.98	3.73	37.09
Total (above three)	193.53	953.96	2,076.13	4,762.76
Global imports	3,421.02	9,000.78	16,095.60	34,160.40
Share in global imports (%)	5.66	10.60	12.90	13.94

Source: Authors' calculation based on IMF DOTS database.

	Trade with world (US\$ million)		Trade with India (US\$ million)		Share with India compared to world (%)	
	Export	Import	Export	Import	Export	Import
2001	126.23	227.2	118.79	176.62	94.11	77.74
2005	287.75	430.5	251.95	323.35	87.56	75.11
2011	674.65	1,043.23	565.20	754.03	83.78	72.28

Source: Authors' calculation based on data received from Department of Revenue and Customs, Government of Bhutan.

almost 84 percent of its exported goods to the regional giant (Table 3.3). Interestingly, bilateral trade between Bangladesh

and Nepal through the Nepal-India-Bangladesh transit corridor, and Bangladesh's trade with Bhutan through the

**Table 3.4** Transit trade within the sub-region (US\$ million)

Exporting country	Importing country	Transit through	1991	2000	2006	2012
Bangladesh	Bhutan, Nepal	India	11.84 (0.70)	2.22 (0.04)	6.00 (0.05)	22.37 (0.10)
Bhutan	Bangladesh, Nepal	India	3.90 (6.12)	4.53 (4.41)	10.69 (2.58)	25.77 (4.37)
Nepal	Bangladesh, Bhutan	India	0.12 (0.05)	1.90 (0.26)	3.24 (0.39)	36.78 (4.22)
Total			15.86	8.65	19.93	84.92

Numbers in parentheses represent share in country's total trade.

Source: Authors' calculation based on IMF DOTS database.

**Table 3.5** Transit trade with rest of the world\* (US\$ million)

Exporting Country	Partner	Transit through	1991	2000	2006	2012
Nepal	Rest of the World	India	239.73 (93.17)	411.60 (57.11)	263.37 (31.75)	319.63 (36.65)
Bhutan	Rest of the World	India	58.79 (93.04)	77.85 (75.80)	275.34 (66.46)	381.42 (64.65)
Bangladesh	Rest of the World	India	1,652.87 (97.45)	5,537.23 (99.06)	11,476.69 (98.51)	21,708.46 (97.56)
Total			1,951.39	6,026.68	12,015.40	22,409.51

\*Other than Nepal, Bhutan and Bangladesh. Numbers in parentheses represent share in country's total trade.

Source: Authors' calculation based on IMF DOTS database.

India-Bangladesh-Bhutan transit corridor have both witnessed a steep rise in recent years.<sup>6</sup> Such trade concentration in a few markets, and gradual increase in trade among countries enjoying transit facilities, although in a limited amount, point to the importance of transit in South Asia.

### 3.1 Transit trade profile

Until recently, transit trade in South Asia was not in the forefront of regional and multilateral cooperation. However, increasing trade volume and the evolution of global supply chains in recent years have forced countries in South Asia to be more open to transit trade, both re-

gional and otherwise. Tables 3.4 and 3.5 present the volume of transit trade for Bangladesh, Bhutan and Nepal via India.

Transit trade of countries in eastern South Asia among themselves as well as with the rest of the world increased substantially from 1991 to 2012, but growth was much faster in the case of the latter than the former. The value of intra-sub-regional transit trade was much smaller compared to the transit trade with the rest of the world. In 2012, countries in eastern South Asia recorded a total of nearly US\$85 million in intra-sub-regional transit trade, which was a negligible 0.37 percent of their total transit trade.



# Transit arrangement in South Asia

Cross-border infrastructure alone would not facilitate the movement of goods and vehicles between countries if non-physical impediments are not removed (UNCTAD 2007; Subramanian and Arnold 2001). Trade facilitation can only serve its purpose if based on harmonized legislation, institutions and practices at sub-regional, regional and international levels. In spite of consistent efforts and achievements over the years, significant differences continue to exist between South Asian countries in terms of their legislation, institutional arrangements and practices. Operational standards that differ between neighbouring countries lead to lack of traffic and transit rights, and barriers to the movement of goods and people, which have a negative impact on the economy.

As goods begin to move along international transport corridors, the need to harmonize laws and processes among a larger group of countries becomes necessary. International conventions related to transport are essential in facilitating the movement of goods, especially at border crossings, by reducing procedures and formalities, and time. In recognition of the fact that harmonized transport facilitation measures at national and international levels are a pre-requisite for enhancing international trade through major road and rail routes of international importance, the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), at its 48th session, adopted Resolution 48/11 on road and rail transport modes in relation to facilitation measures. It recom-

mended that the countries, which had not already done so, consider the possibility of acceding to the following seven international conventions in the field of land transport facilitation that were originally developed under the auspices of the Economic Commission for Europe.<sup>7</sup>

- i) Convention on Road Traffic, 1968.
- ii) Convention on Road Signs and Signals, 1968.
- iii) Customs Convention on the International Transport of Goods under Cover of TIR Carnets (TIR Convention), 1975.
- iv) Customs Convention on the Temporary Importation of Commercial Road Vehicles, 1956.
- v) Customs Convention on Containers, 1972.
- vi) International Convention on the Harmonisation of Frontier Controls of Goods, 1982.
- vii) Convention on the Contract for the International Carriage of Goods by Road (CMR), 1956.

These United Nations (UN) Conventions create a basic framework for the cross-border movement of goods and vehicles. However, most South Asian countries are yet to accede to most of these Conventions (Table 4.1, next page).

Bangladesh and Sri Lanka have only signed the Convention on Road Traffic, while India and Pakistan have signed both the Convention on Road Traffic and the Convention on Road Signs and Signals. Meanwhile, Bhutan, Maldives and Nepal have not signed any of the

*Most South Asian countries are yet to accede to most of the international Conventions related to transport facilitation.*

**Table 4.1** Status of South Asian countries' accession to international conventions

Convention	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Convention on Road Traffic (1968)	No	Yes	No	Yes	No	No	Yes	Yes
Convention on Road Signs and Signals (1968)	No	No	No	Yes	No	No	Yes	No
Customs Convention on Temporary Importation of Commercial Road Vehicles (1956)	Yes	No	No	No	No	No	No	No
Customs Convention on Containers (1972)	No	No	No	No	No	No	No	No
Convention on International Transport of Goods under Cover of TIR Carnets (1975)	Yes	No	No	No	No	No	No	No
Convention on the Contract for the International Carriage of Goods by Road (1956)	No	No	No	No	No	No	No	No
Convention on the Harmonisation of Frontier Controls of Goods (1982)	No	No	No	No	No	No	No	No

Source: De (2012).

*Some of the South Asian countries, which have signed some of the international Conventions on transport facilitation, have failed to adopt updated versions of the Conventions.*

seven UN Conventions. Except Afghanistan, no South Asian country has signed the Customs Convention on the Temporary Importation of Commercial Road Vehicles or the Convention on the International Transport of Goods under TIR Carnets. Also, some of the countries that have signed some of the Conventions have failed to adopt updated versions of the Conventions, which is likely to undermine the trade facilitation objectives. For example, many countries are contracting parties to the Convention on Road Traffic (1949), but have not ratified the 1968 version of the Convention.

#### 4.1 Bilateral trade and transit agreements in South Asia

A number of bilateral trade and transit agreements exist between South Asian countries (Tables 4.2 and 4.3, next page). Some of these agreements are briefly discussed below.

##### *Bangladesh–India Agreements*

Bilateral trade between India and Bangladesh takes place under the provisions of the prevailing India-Bangladesh Trade Agreement, first signed on 28 March 1972.<sup>8</sup> Under the Agreement, both countries provide most-favoured nation (MFN) treatment to each other, except in the case of transit trade. Similarly, on 4 October 1999, India and Bangladesh signed a bilateral agreement entitled “Protocol on Inland Water Transport and Trade”, which was renewed in 2007 for bilateral as well as transit trade between the two countries. The Agreement derives directly from the provisions of the India-Bangladesh Trade Agreement. Besides, the countries have also signed agreements related to the operation of railways for the purpose of trade in goods and services between the two countries. Under these agreements, both countries agree to operate passenger as

well as goods trains through three specific border routes.<sup>9</sup>

### *India–Nepal Agreements*

India and Nepal first signed a bilateral “Treaty of Trade and Commerce” in 1950. In the 1960s, 70s and 80s, new treaties were signed in different forms—sometimes covering only trade and commerce, and at other times including transit as well. After the restoration of multi-party democracy in Nepal, a new Treaty was signed on 6 December 1991. The Treaty has been renewed/revised/updated a number of times since then, and the validity of the Treaty in its existing form is until 2016. A Protocol attached to the Treaty defines the operational modalities, including the list of bilateral trade routes.

Nepal and India also signed an Agreement to Control Unauthorized Trade on 6 December 1991, which, after some revisions and renewals, exists even today. The Agreement sets out certain procedures to control and prevent unauthorized trade between the two countries. Similarly, India and Nepal signed a “Treaty of Transit” on 5 January 1999, which has also been revised and renewed a number of times. Under this Treaty, India provides maritime transit and supporting services and facilities to Nepal at Kolkata and Haldia ports located in the State of West Bengal in India.

A Protocol attached to the Treaty of Transit specifies detailed operational modalities, including entry and exit points to and from India for Nepal’s transit trade. In addition, both countries have signed a Memorandum to the Protocol that specifies the detailed procedures to be applied to imports to, and exports from, Nepal. Besides, India and Nepal have entered into a Rail Services Agreement for operating and managing rail services for Nepal’s transit trade as well as bilateral trade between the two countries. Specifically, it specifies transit trade between Kolkata/Haldia ports in India and Birgunj in Nepal via Raxaul in

India, as well as between stations on Indian Railways and Birgunj via Raxaul for bilateral trade.

### *Bhutan–India Agreement*

Bhutan and India signed a bilateral trade agreement in 1995 that sets out the broad contours for free trade between the two countries. The Protocol to the Agreement specifies the bilateral

**Table 4.2** Trade and transit agreements in South Asia

Agreement	Coverage		Both GATT signatories
	MFN trade	MFN transit	
India–Bangladesh	Yes	No	Yes
India–Nepal	Yes	Yes	Yes
India–Bhutan	Yes	Yes	India (Member); Bhutan (Observer)
Pakistan–Afghanistan	Yes	Yes	Pakistan (Member); Afghanistan (Observer)
Bangladesh–Nepal	Yes	Yes	Yes
Bangladesh–Bhutan	Yes	Yes	Bangladesh (Member), Bhutan (Observer)
Bhutan–Nepal	Yes	No	Nepal (Member), Bhutan (Observer)

Source: Authors.

**Table 4.3** Transit routes

Country pair	Routes/Particulars	Status
Bangladesh–India	No route officially announced	Not working
India–Nepal	12 routes	Working with restrictions
Bhutan–India	Four routes	Working with restrictions
Bangladesh–Nepal	Banglabandha (Bangladesh)–Phulbari (India)–Khakarbitta (Nepal)	Working
Bangladesh–Bhutan	Burimari (Bangladesh)–Changrabandha (India)–Jaigaon (India)–Phuentsholing (Bhutan)	Working
Pakistan–Afghanistan	18 routes	Working with restrictions

Source: Authors.

trade routes (including transit) and detailed trading procedures. Interestingly, there are no references to transport, although the common understanding is that free movement of vehicles between the two countries is accommodated by the Agreement. India provides transit to Bhutan through Kolkata and Haldia ports.

### *Bangladesh–Nepal Agreement*

Bangladesh and Nepal have not yet signed any bilateral trade agreement, but have signed a bilateral transit agreement on 2 April 1976. The transit agreement and the Protocol attached to it provide transit rights to Nepal to access third country markets, but they do not deal with bilateral overland trade between Bangladesh and Nepal. In order to operate the bilateral transit trade, Bangladesh and Nepal signed an agreement entitled “Operational Modalities for an Additional Transit Route between Nepal and Bangladesh”, which provides terms for the use of Banglabandha (Bangladesh)–Phulbari (India)–Kakarbhitta (Nepal) as a transit corridor for bilateral trade between Bangladesh and Nepal. India provides transit to Nepal and Bangladesh exclusively for their overland bilateral trade.

### *Bangladesh–Bhutan Agreement*

Bangladesh and Bhutan signed a bilateral trade agreement on 12 May 2003 granting MFN status to each other. The Protocol attached to the agreement defines Burimari (Bangladesh)–Changrabandha (India)–Jaigaon (India)–Phuentsholing (Bhutan) as the transit route for bilateral trade between Bangladesh and Bhutan. India provides transit for the bilateral overland trade between the two countries.

### *Afghanistan–Pakistan Agreement*

The Afghanistan Transit Trade Agreement (ATTA) was signed in 1965 between Afghanistan and Pakistan with the objective of granting to each other the

freedom of transit to and from their territories. The routes that were identified included: i) Karachi–Peshawar–Torkhum; and ii) Karachi–Chaman–Spin Boldak from Karachi Port. The provision to include additional routes was also incorporated in the ATTA. After the establishment of Port Qasim, additional routes were included in 1988.

Since Pakistan is a signatory to the UN conventions, which require member countries to facilitate transit trade of landlocked countries like Afghanistan, both countries renewed the ATTA in 2010. The need to enter into the new Afghanistan–Pakistan Transit Trade Agreement (APTITA) in 2010 arose also because ATTA did not facilitate the movement of containerized cargo and did not address issues related to pilferage and smuggling of goods. The salient features of APTITA include freedom of transit to both countries, allowing Pakistan access to Central Asian countries, and Afghanistan to Pakistan’s sea ports and to the Wagha land border for its exports to India. However, the Agreement does not allow Indian exports to Afghanistan through Wagha.

## 4.2. Regional transit and border connectivity: Current progress

Although the need for harmonization of standards and mutual recognition in the transport sector for enhanced trade are widely recognized, South Asia is yet to conclude a regional transport and transit agreement.<sup>10</sup> Negotiations have been ongoing on concluding the SAARC Regional Railways Agreement and the SAARC Motor Vehicles Agreement. There is an Inter-Governmental Group (IGG) in SAARC to provide advice on transport facilitation in the region, whose proceedings have stressed that harmonization of standards and mutual recognition in the transport sector are key issues to enhance intra-regional trade in South Asia.

Taking note of the recommendations of the SAARC Regional Multimodal

*Proceedings produced by the Inter-governmental Group in SAARC have stressed that harmonization of standards and mutual recognition in the transport sector are key to enhance intra-SAARC trade.*

Transport Study, in 2008 the SAARC Transport Ministers agreed to have a Regional Transport and Transit Agreement as well as a Regional Motor Vehicles Agreement. After years of negotiation, the 18th SAARC Summit, held in Kathmandu on 26–27 November 2014, was expected to finalize and sign the Agreements. However, SAARC member countries failed to reach a consensus, and therefore, the Agreements were put on hold for at least three months. As the Summit Declaration states, “the Heads of State or Government welcomed the significant progress towards finalization of the SAARC Motor Vehicles Agreement and SAARC Regional Railways Agreement and agreed to hold a Meeting

of the Transport Ministers within three months in order to finalize the Agreements for approval” (SAARC Secretariat 2014).

Regarding border connectivity, India’s integrated check post (ICP) project in Attari, Petrapole and Agartala has been completed, and Attari and Agartala ICPs are already open for business. Additionally, there are several ongoing projects on transit and transportation in South Asia. For example, construction of a 14 km railway line from Agartala in Tripura state of India to Akhaura in Bangladesh, and subsequently to Chittagong port in Bangladesh is likely to be commenced soon.



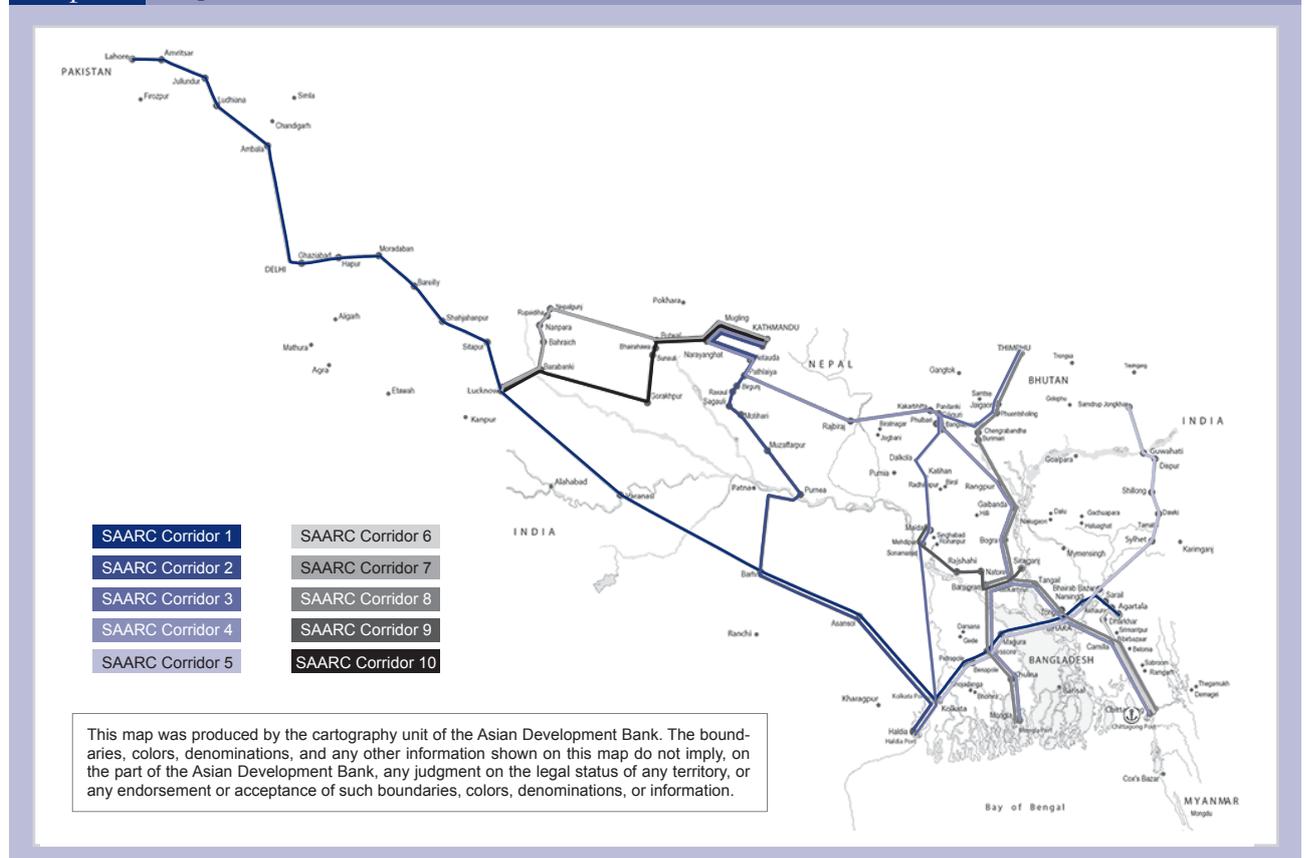
# Identification of efficient regional transit corridors

Three modes of transportation are widely used for trade within South Asia, of which land transportation is the dominant mode. However, the land mode of cross-border transportation through railway only facilitates a fraction of the total intra-regional trade. Moreover, seamless overland transportation is absent in the entire region, even between countries that have bilateral transit agreements in place. Also, in some cases,

traded goods have to be loaded and unloaded at border points, such as in trade between India and Bangladesh, and India and Pakistan. Air shipping is used to trade high value-low volume items, and ocean shipping is used largely for trade between India and Sri Lanka.

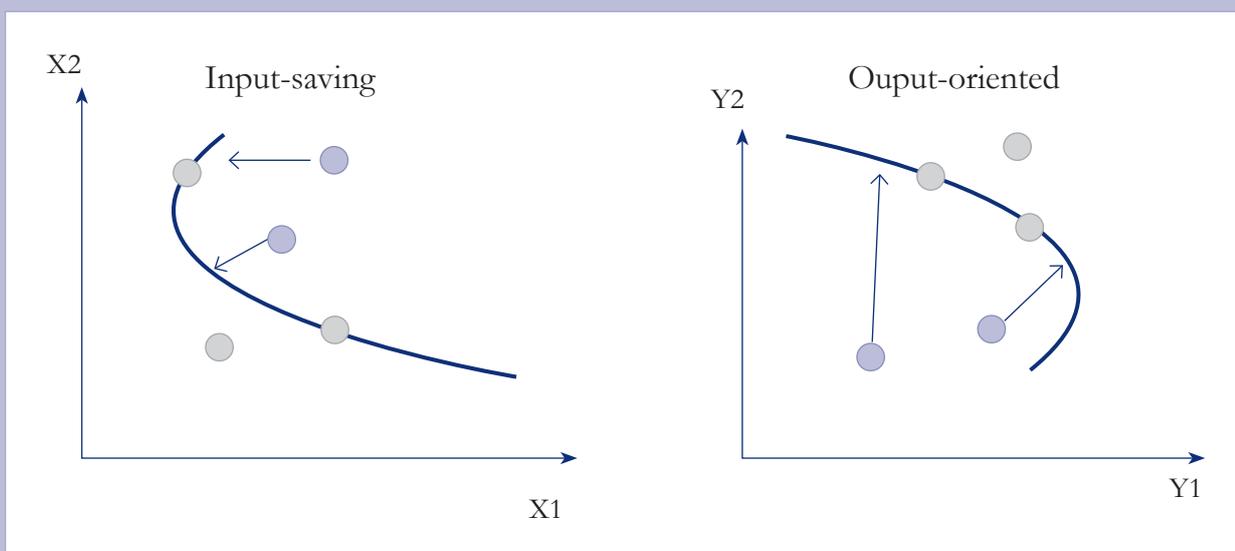
The Asian Development Bank (ADB) has proposed 10 road corridors in South Asia (Map 5.1), envisaged as a seamless

Map 5.1 Regional corridors in South Asia



Source: ADB, available at <http://sasec.asia/>

Figure 5.1 DEA: Measures of efficiency



Source: Authors.

connectivity network.<sup>11</sup> However, since it is not possible to develop all the 10 corridors simultaneously, an important question remains as to how to prioritize the development of these land corridors. Under the presumption that all 10 corridors enjoy transit, the study has used

linear programming model, in particular Data Envelopment Analysis (DEA) to select the most efficient network (corridor) in South Asia.<sup>12</sup>

This study employs both input-saving and output-oriented measures of efficiency of the corridors. As illustrated in Figure 5.1, input-saving measure of efficiency implies least resources/lowest cost to produce a given level of output, herein trade. In other words, the input-saving measure provides a given output with input minimization. On the other hand, the output-oriented measure of efficiency indicates output maximization with given resources.

The study has selected five specific road corridors (Table 5.1) as Decision Making Units (DMUs). It is assumed that South Asian countries have decided to have regional transit on these five corridors.

Table 5.2 presents the set of inputs considered for the study. The volume of trade (Y) along a particular corridor has been taken for the period 2009–2012. A set of non-negative inputs (X) have been considered for carrying goods along a corridor (DMU). We use both input-saving and output-oriented measures of efficiency of corridors under

Table 5.1 Road corridors selected for analysis

Unit	SAARC Corridor
1	Corridor 1 (Lahore to Agartala) (sc_1)
2	Corridor 2 (Kathmandu to Kolkata/Haldia) (sc_2)
3	Corridor 3 (Thimpu to Kolkata/Haldia) (sc_3)
4	Corridor 4 (Kathmandu to Mongla/Chittagong) (sc_4)
5	Corridor 8 (Thimpu to Mongla/Chittagong) (sc_8)

Table 5.2 List of variables

Variable	Description
Output (Y1)	Trade carried in a corridor
Input (X1)	Length of corridor
Input (X2)	No. of border-crossing along corridor
Input (X3)	Transportation standard (carrying capacity)
Input (X4)	Time to transport along corridor
Input (X5)	Cost to transport along corridor
Input (X6)	No. of documents required for trade

Note: Refer to the Appendix for technical details of the variables.

the constant returns to scale (CRS) scenario, and strong disposability of inputs in both cases. Estimated technical efficiency scores are presented in Table 5.3.

Based on the analysis, SAARC Corridor 1 is the most efficient corridor in both the scenarios—input-saving and output-oriented. Efficiency score remained unchanged for SAARC Corridor 1 even when the technology parameter in input-saving or output-oriented changed from CRS to variable returns to scale (VRS). Importantly, Corridor 1 retains its top efficiency position when considered alongside all other routes, both under input-saving and output-oriented scenarios. This, in other words, suggests that, *ceteris paribus*, SAARC Corridor 1 is the most efficient overland corridor in South Asia. Therefore, if we consider “scale economy”, SAARC Corridor 1 has the potential to become the most technically efficient corridor in the region.

Other four road corridors, which are technically inefficient at present, could produce the same amount of output with approximately 15 percent less use of inputs if improvements in inputs (such as number of documents, cost and time to transport, transportation standard and a number of border-crossings) are made. With such improvements, SAARC Corridor 2 has the potential to become as

**Table 5.3** Selected corridors’ technical efficiency scores

Corridor	Input-saving		Output-oriented	
	CRS	VRS	CRS	VRS
SAARC Corridor 1	1.00	1.00	1.00	1.00
SAARC Corridor 2	0.85	1.00	1.12	1.00
SAARC Corridor 3	0.64	1.00	12.11	1.00
SAARC Corridor 4	0.48	1.00	10.01	1.00
SAARC Corridor 8	0.20	1.00	8.11	1.00

*Notes: i) CRS: Constant returns to scale; VRS: Variable returns to scale; ii) Corridor with scores <1 is inefficient in input-saving whereas corridor with scores >1 is inefficient in output-oriented.*

efficient as Corridor 1. Moreover, changes in technology would make Corridor 2 efficient under both input-saving and output-oriented scenarios.

Efficiency scores also imply that there is a need of a strong trade and transport facilitation programme in South Asia. At present, there are high variations among South Asian countries in terms of trade facilitation performance. Strengthening SAARC Corridor 1 with investment in cross-border infrastructure, transit and trade facilitation measures would help the region improve the efficiency of transport corridor and supply chain connectivity. Intuitively, a stronger network of supply chains would be essential for strengthening value chains and regional integration.



# Estimating the transit revenue

As noted in De (2010), a regional transit arrangement in South Asia would lead to the following: i) higher trade—both intra- and extra-regional; ii) efficient use and/or allocation of resources; iii) industrialization of the hinterland; iv) poverty reduction, particularly in the border areas through employment generation; and v) enhanced regional integration. However, estimating the transit revenue that such an arrangement would help accrue would better explain the direct benefits of a regional transit arrangement in South Asia. Here, we make an attempt to estimate the transit revenues for the South Asia sub-region mentioned earlier, under the following assumptions:

- There is bilateral transit arrangement between Bangladesh and India to re-establish overland links between India's Northeastern Region (NER), Bangladesh and the rest of India in the short run, which would eventually lead to full sub-regional transit.
- Cargo is diverted from ports under the Kolkata Port Trust (KoPT) to ports in Bangladesh due to transportation cost advantage.
- There is sub-regional transit arrangement between Bangladesh, Bhutan, India and Nepal, which would also cover transit facility for third country trade, for example, for Nepal's third country trade through Bangladesh.
- NER's trade passes through Bangladesh. For instance, Chittagong port becomes a transit port for NER.

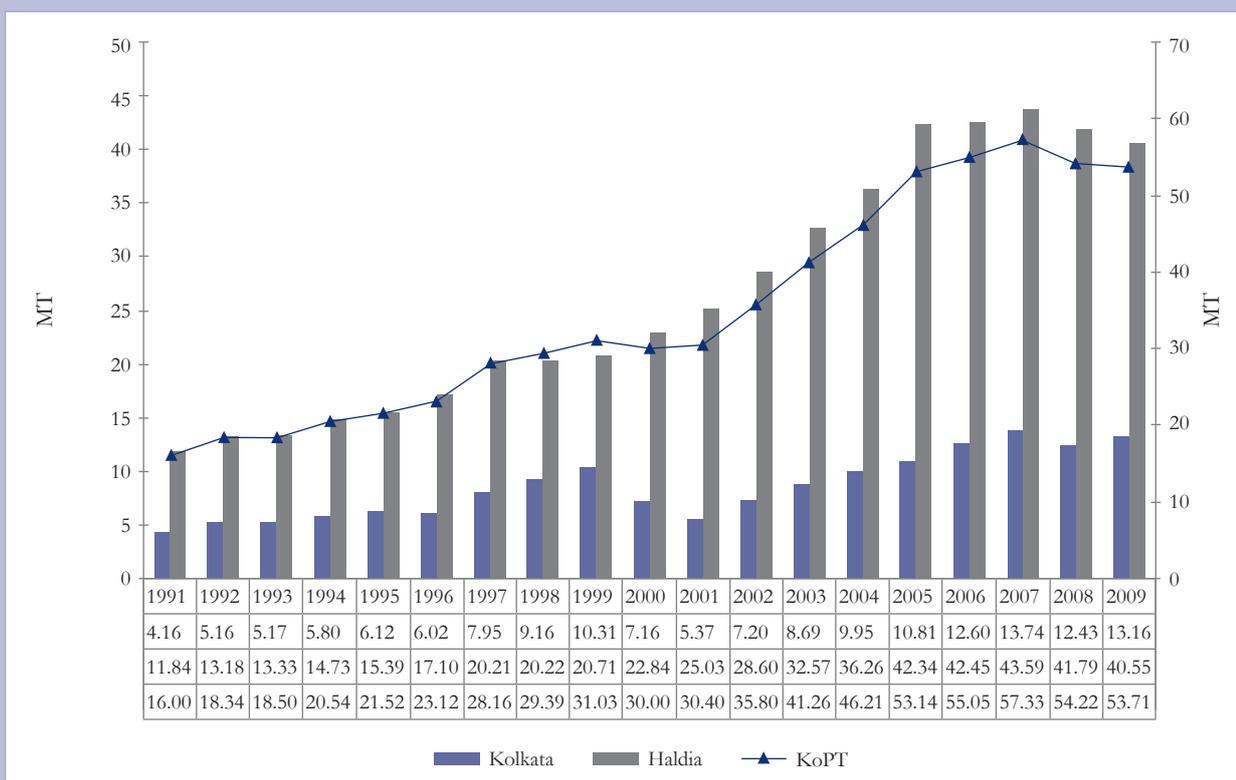
The estimation relies on secondary data sources for domestic and international trade, mostly sourced from the Ministry of Commerce and Industry, Government of India; Ministry of Shipping, Government of India; KoPT; and Container Corporation of India (CONCOR), among others.<sup>13</sup> To estimate the transit revenue, we evaluate the performance of KoPT, and conduct trade forecast for Bhutan and Nepal that would pass through KoPT, and the movement of goods between NER and other parts of India.

## 6.1 Cargo at Kolkata Port Trust

There are two ports under KoPT: i) Kolkata Dock System (CDS), which is a riverine port; and ii) Haldia Dock Complex (HDC), which is located on estuary of river Hooghly. Unlike the Chittagong port in Bangladesh, both CDS and HDC are basically impounded docks.<sup>14</sup> In terms of traffic, according to the data available for 2010/11, Haldia and Kolkata ports are the third and sixth largest ports in India, respectively. While Haldia port handles bulk cargo, Kolkata port handles break-bulk and container cargoes. In 2009, KoPT handled 54 million tons (MT) of cargo, of which 41 MT was contributed by Haldia port and the rest 13 MT by Kolkata port (Figure 6.1, next page). Despite the fact that Kolkata and Haldia ports are transit ports for Bhutan and Nepal, the growth of cargo in these ports decelerated significantly

*Estimating the revenue that a transit arrangement would help accrue would better explain the direct benefits of a regional transit arrangement in South Asia.*

Figure 6.1 Traffic handled by KoPT



Source: KoPT Annual Reports, various issues.

during 2000–2009, compared to 1990–1999 (Table 6.1). Both the ports suffer from navigational constraints and low productivity (mainly CDS), among others. Nonetheless, both ports have high cargo potentials.

### 6.2 Transit traffic passing through KoPT: Current trend and future potential

The significance of KoPT for Nepal’s international trade is explained by the fact that about 53,765 twenty-foot equivalent units (TEUs), mainly import traffic,

passed through Kolkata and Haldia ports in 2012 (Table 6.2, next page). The share of Kolkata port in Nepal’s transit traffic has increased significantly since 1995. Kolkata port presently handles about 96 percent of Nepal’s containerized transit traffic, which is an increase from only 49 percent in 2003 (Figure 6.2, next page). While Nepal’s transit traffic at Kolkata port grew by about 30 percent during 2003–2009, transit traffic at Haldia port decelerated by 15 percent per annum in the same period (Figure 6.3, page 22). Bhutan’s export and import through Kolkata and Haldia ports show a similar pattern like Nepal’s. Bhutan’s transit traffic at KoPT in 2009 was about 31,000 tons, of which about 84 percent was import traffic (Table 6.3, next page).

Forecast of Nepal’s container traffic through KoPT, based on past trend, would help understand the future potential of cargo handling by ports in Bangladesh, such as Mongla or Chittagong, in case a sub-regional transit is accepted.

Table 6.1 Annual average growth rate of Kolkata and Haldia ports (%)

	Kolkata Port	Haldia Port	KoPT
1990–1999	18.51	9.36	11.74
2000–2009	18.11	7.75	9.58

Source: Calculation based on KoPT Annual Reports, various issues.

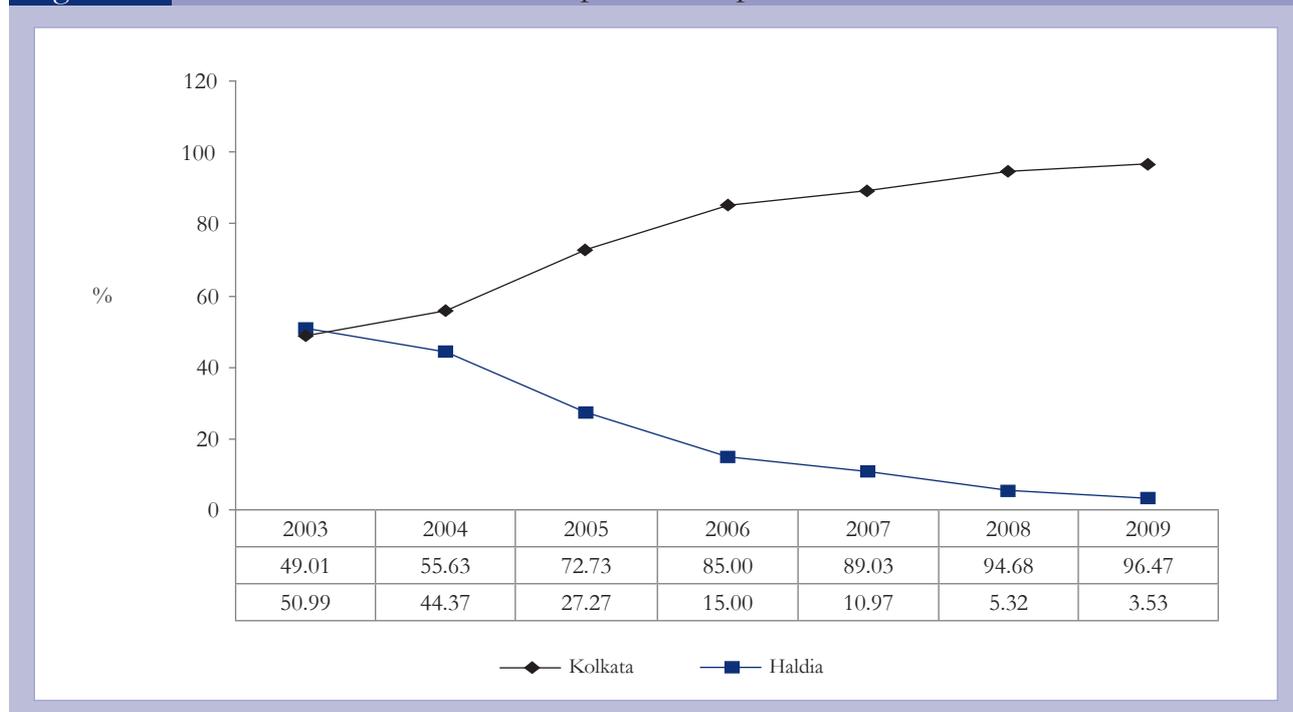
Financial Year	Total	Import	Export	Import-Export Ratio
	(TEUs)			
1995	17,076	16,381	695	24
1996	17,988	17,178	810	21
1997	18,846	17,865	981	18
1998	20,123	19,090	1,033	18
1999	21,479	20,221	1,258	16
2000	22,913	21,368	1,545	14
2001	24,823	23,062	1,761	13
2002	27,269	25,418	1,851	14
2003	32,364	29,192	3,172	9
2004	28,663	25,732	2,931	9
2005	32,370	29,067	3,303	9
2006	36,802	33,964	2,838	12
2007	38,210	36,034	2,176	17
2008	35,145	32,162	2,983	11
2009	45,876	44,201	1,675	26
2010	46,699	45,176	1,523	30
2011	48,783	47,343	1,440	33
2012	53,765	51,892	1,873	28

Source: KoPT.

Financial Year	Total	Import	Export	Import-Export Ratio
	('000 tonnes)			
1995	11	10	1	10.0
1996	15	13	2	6.5
1997	16	14	2	7.0
1998	23	21	2	10.5
1999	23	18	5	3.6
2000	22	18	4	4.5
2001	29	23	6	3.8
2002	37	33	4	8.3
2003	42	38	4	9.5
2004	41	37	4	9.3
2005	56	46	10	4.6
2006	59	46	13	3.5
2007	55	45	10	4.5
2008	58	46	12	3.8
2009	31	26	5	5.2
2010	28	23	5	4.6
2011	32	26	6	4.3
2012	39	31	8	3.9

Source: KoPT.

Figure 6.2 Share of Kolkata and Haldia ports in Nepal's transit traffic



Source: Authors' calculation based on KoPT data.

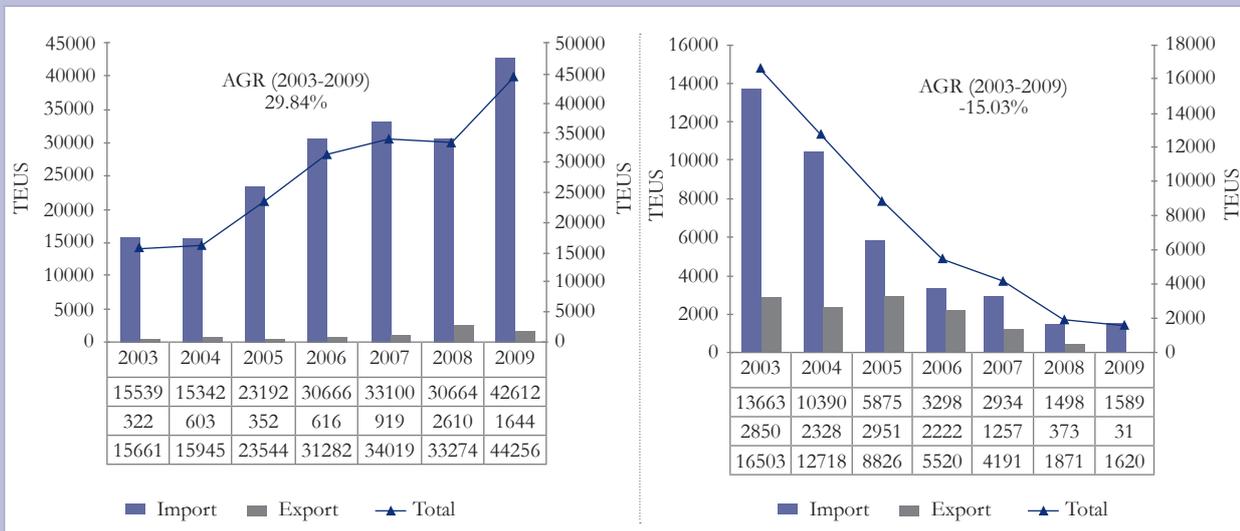
Based on time trend (Figure 6.4), we found that Nepal’s containerized transit traffic at KoPT could increase to 79,453 TEUs by 2020 (Table 6.4).

### 6.3 Cargo movement between NER and other parts of India: Current trend and future potential

NER’s export and import are handled at Kolkata and Haldia ports. Transportation of goods between NER and the rest of India takes place through a tiny

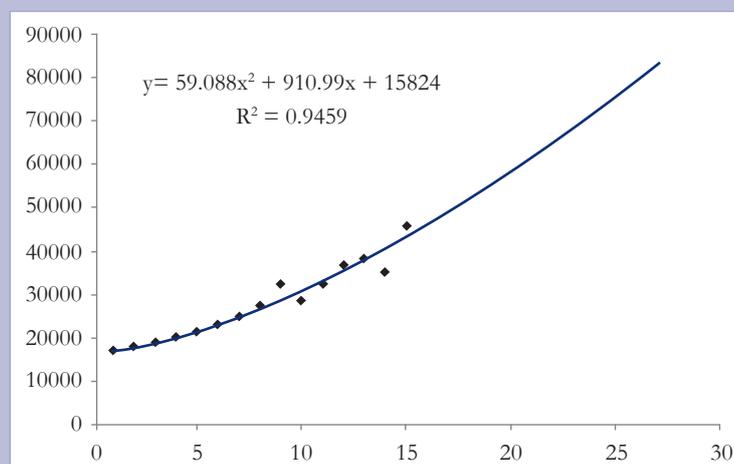
corridor called the “chicken’s neck” (Map 6.1, next page). NER’s transit volume consists of traffic moving between NER and KoPT by rail and road, and the volume of intra-country movement of goods between NER and the rest of India. These two categories of cargo might appear as transit traffic and transshipment traffic in the India–Bangladesh context. Table 6.5 (next page) presents container traffic between KoPT and Amingaon ICD, Assam, whereas Tables 6.6 and 6.7 (page 24) present intra-country movement of goods between NER and

**Figure 6.3** Nepal’s container trade: Trends at Kolkata and Haldia ports



Source: Authors’ calculation based on cargo data collected from KoPT.

**Figure 6.4** Estimated regression (time trend): Nepal’s container traffic through KoPT



**Table 6.4** Forecast of Nepal’s container traffic through KoPT

Financial Year	TEU
2013	54,464
2014	57,679
2015	61,013
2016	64,464
2017	68,034
2018	71,722
2019	75,529
2020	79,453

the rest of India, respectively, in volume (tons) and container numbers (TEUs).

Based on time trend, we have forecasted NER's containerized trade by rail through KoPT until 2020 (Figure 6.5 and Table 6.8, next page). Following the same methodology, we have also forecasted NER's containerized trade by road through KoPT (Figure 6.6 and Table 6.9, page 25), and NER's non-containerized trade through KoPT till 2020 (Figure 6.7 and Table 6.10, page 25). Our forecasts indicate high potential of cargo movement between NER and Chittagong port if transshipment is allowed under normal (business as usual) conditions. Eventually, access to Chittagong port may support a faster growth in NER, resulting in more cargo for the ports in Bangladesh.

### 6.4 Estimated results

Based on the forecasted cargo volumes provided in previous sub-sections, we make an attempt to estimate the transit

**Table 6.5** Rail container traffic between KoPT and Amingaon ICD, Assam (TEU)

Year	Domestic			International		
	Inward	Outward	Total	Export	Import	Total
2005–2006	3,245	863	4,108	3,664	1,033	4,697
2006–2007	2,537	846	3,382	4,139	1,100	5,239
2007–2008	4,530	1,761	6,291	4,114	903	5,017
2008–2009	3,776	1,945	5,721	3,633	1,276	4,909
2009–2010	3,447	2,298	5,745	2,744	1,612	4,356
2010–2011	3,632	2,387	6,019	3,122	1,765	4,887
2011–2012	3,845	2,661	6,506	3,289	1,982	5,271

Source: CONCOR India.

volume, for which the following three scenarios are considered.

- **Scenario 1:** Opening of transit leads to cargo movement between India's NER and the rest of India through Bangladesh.
- **Scenario 2:** Opening of transit leads to rail cargo movement between Nepal and Bangladesh through India.

Map 6.1 Chicken's Neck



Source: bhutanomics.com

**Table 6.6** Movement of goods between NER and other parts of India (in ton), 2011–2012

NER States	Rail and River			Road		
	Inward	Outward	Total	Inward	Outward	Total
Assam	5,460,279.3	9,676,313.2	15,136,592.5	15,399,859.8	30,580,467.5	45,980,327.3
Arunachal	11,697	0	11,697	23,417.8	0	23,417.8
Manipur	0	0	0	0	0	0
Meghalaya	1,660	0	1,660	3,323.5	0	3,323.5
Mizoram	10,844.8	0	10,844.8	27,603.3	0	27,603.3
Nagaland	985,787.5	210,771.2	1,196,558.7	3,848,830.2	585,120	4,433,950.2
Tripura	379,039.1	8,924.4	387,963.5	1,638,966.4	36,002.9	1,674,969.2
West Bengal	22,004.8	621,255.9	643,260.7	46,676.7	1,859,549.1	1,906,225.8
Total	6,871,312.5	10,517,264.7	17,388,577.2	20,988,677.6	33,061,139.5	54,049,817.0

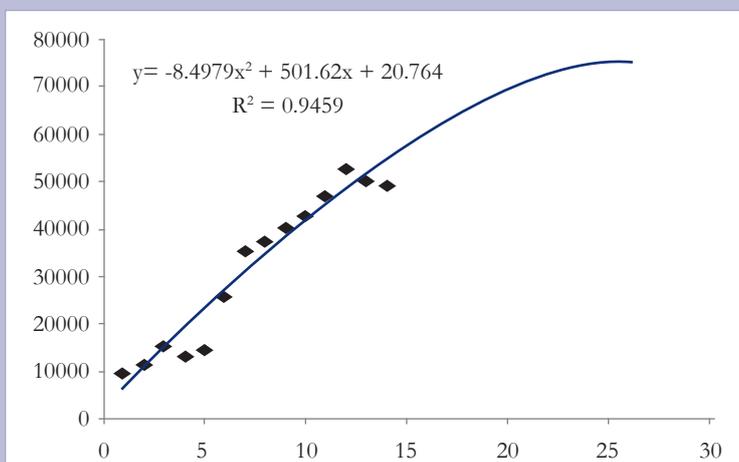
Source: Calculations based on GoI (2012).

**Table 6.7** Movement of goods between NER and other parts of India (in TEU), 2011–2012

NER States	Rail and River			Road		
	Inward	Outward	Total	Inward	Outward	Total
Assam	390,020	691,165	1,081,185	1,099,990	2,184,319	3,284,309
Arunachal	836	0	836	1,673	0	1,673
Manipur	0	0	0	0	0	0
Meghalaya	119	0	119	237	0	237
Mizoram	775	0	775	1,972	0	1,972
Nagaland	70,413	15,055	85,468	274,916	41,794	316,711
Tripura	27,074	637	27,712	117,069	2,572	119,641
West Bengal	1,572	44,375	45,947	3,334	132,825	136,159
Total	490,808	751,233	1,242,041	1,499,191	2,361,510	3,860,701

Source: Calculations based on Table 6.6.

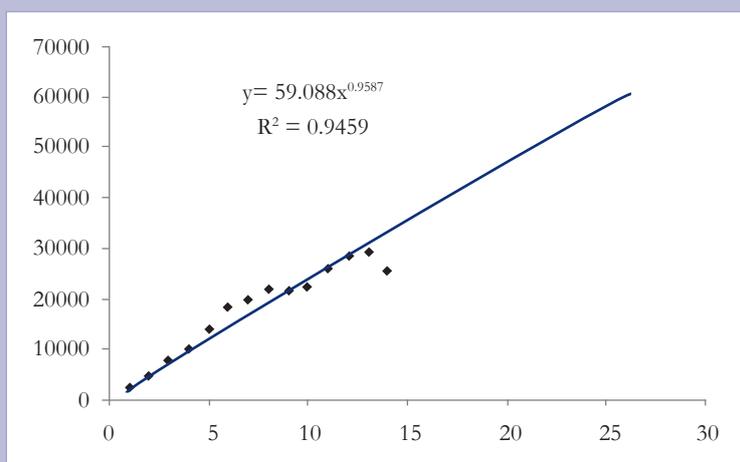
**Figure 6.5** Estimated regression (time trend): NER's containerized trade by rail through KoPT



**Table 6.8** Forecast of NER's containerized trade by rail through KoPT

Financial Year	TEU
2013	6,484
2014	6,654
2015	6,807
2016	6,943
2017	7,063
2018	7,165
2019	7,250
2020	7,318

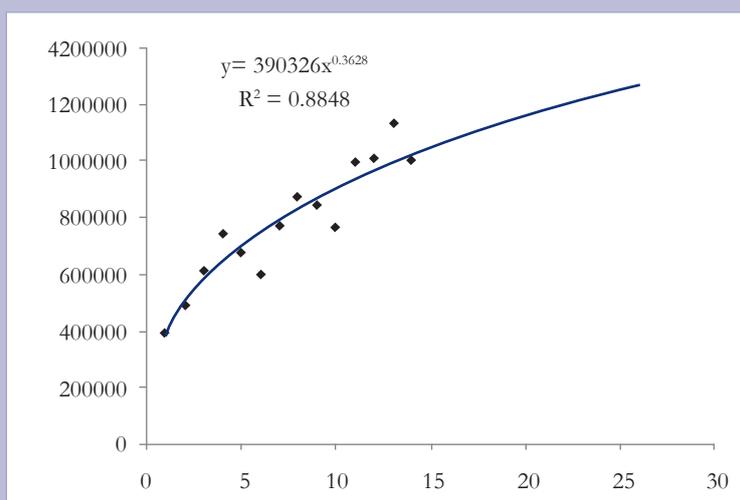
**Figure 6.6** Estimated regression (time trend): NER's containerized trade by road through KoPT



**Table 6.9** Forecast of NER's containerized trade by road through KoPT

Financial Year	TEU
2013	4,453
2014	4,677
2015	4,901
2016	5,125
2017	5,348
2018	5,571
2019	5,793
2020	6,015

**Figure 6.7** Estimated regression (time trend): NER's non-containerized trade by road through KoPT



**Table 6.10** Forecast of NER's non-containerized trade by road through KoPT

Financial Year	Volume (Ton)
2013	1,135,950
2014	1,157,287
2015	1,177,955
2016	1,198,004
2017	1,217,481
2018	1,236,426
2019	1,254,874
2020	1,272,858

- **Scenario 3:** Opening of transit leads to cargo movement between India's NER and Bangladesh.

In all the three scenarios, benefits are static in nature. Under the first scenario, Bangladesh earns transit revenues. India earns transit revenue, and Bangladesh earns freight and port revenues under the second scenario. Under the third scenario, India earns freight revenue, and Bangladesh earns freight and port revenues. The usual caveat is that the en-

vironmental and other external costs of transit have not been considered.

In Scenario 1 (Table 6.11, next page), Bangladesh may earn US\$22 million (baseline) to US\$55 million (2020) in transit fees, with a minimum transit fee of US\$10 per vehicle in rail cargoes, whereas the amount may rise if the levy increases. Hypothetically, revenue from transit fees could potentially range between US\$55 million–US\$272 million in 2020 for rail cargoes. For road cargoes,

**Table 6.11** Transit fee in case of cargo movement between India's NER and rest of the regions through Bangladesh

**(i) By rail**

Financial Year	2013	2014	2015	2016	2017	2018	2019	2020
Average growth rate	12%	12%	12%	15%	15%	15%	15%	15%
Container*	2,160	2,419	2,709	3,115	3,583	4,120	4,738	5,449
<b>Transit fee</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
10	21.6	24.19	27.09	31.15	35.83	41.20	47.38	54.49
20	43.19	48.38	54.18	62.31	71.65	82.40	94.76	108.98
30	64.79	72.56	81.27	93.46	107.48	123.60	142.14	163.47
50	107.98	120.94	135.45	155.77	179.14	206.01	236.91	272.44

\*Container, taken in '000 TEUs

**(ii) By road**

Financial Year	2013	2014	2015	2016	2017	2018	2019	2020
Average growth rate	14%	14%	14%	16%	16%	16%	16%	16%
Container*	7,482	8,529	9,723	11,279	13,084	15,177	17,606	20,423
<b>Transit fee</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
10	74.82	85.29	97.23	112.79	130.84	151.77	176.06	204.23
20	149.64	170.59	194.47	225.58	261.68	303.55	352.11	408.45
30	224.46	255.88	291.70	338.38	392.52	455.32	528.17	612.68
50	374.09	426.47	486.17	563.96	654.19	758.86	880.28	1,021.13

\*Container, taken in '000 TEUs

benefits are even greater as Bangladesh could earn US\$204 million–US\$1,021 million in transit fees in 2020. Thus the benefits of transit are huge for Bangladesh, and other countries would also gain from it.

In Scenario 2 (Table 6.12, next page), besides other foreseeable revenue sources, Bangladesh may earn revenue from two sources: from freight and through container handling at Mongla or Chittagong port. India may also earn transit fees amounting to US\$0.4 million–US\$2.38

million if the opening of transit leads to rail cargo movement between Nepal and Bangladesh through India. Additionally, container handling revenue has the potential to increase from US\$5.96 million (baseline) to US\$9.93 million in 2020. On freight, Bangladesh may earn US\$3.97 million in 2020.

In Scenario 3 (Table 6.13, page 28), benefits are equally large for Bangladesh. By handling container at Chittagong port, Bangladesh could earn as much as US\$7.27 million (baseline) to US\$12.12

Table 6.12 Income due to rail cargo movement between Nepal and Bangladesh through India								
Financial Year	2013	2014	2015	2016	2017	2018	2019	2020
Container*	54	58	61	64	68	72	76	79
<b>Transit fee (India)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
5	0.27	0.29	0.31	0.32	0.34	0.36	0.38	0.40
10	0.54	0.58	0.61	0.64	0.68	0.72	0.76	0.79
15	0.82	0.87	0.92	0.97	1.02	1.08	1.13	1.19
30	1.63	1.73	1.83	1.93	2.04	2.15	2.27	2.38
<b>Freight charges (Bangladesh)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
10	0.54	0.58	0.61	0.64	0.68	0.72	0.76	0.79
20	1.09	1.15	1.22	1.29	1.36	1.43	1.51	1.59
30	1.63	1.73	1.83	1.93	2.04	2.15	2.27	2.38
50	2.72	2.88	3.05	3.22	3.40	3.59	3.78	3.97
<b>Container handling charges (Bangladesh)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
75	4.08	4.33	4.58	4.83	5.1	5.38	5.66	5.96
100	5.45	5.77	6.10	6.45	6.8	7.17	7.55	7.95
125	6.81	7.21	7.63	8.06	8.5	8.97	9.44	9.93

\*Container, taken in '000 TEUs.

million in 2020, when cargoes are moved through road. At the same time, NER traffic would yield transit revenue of

US\$0.48 million (baseline) to US\$2.91 million in 2020. Rail traffic would also provide transit revenues to Bangladesh.

**Table 6.13** Income in case of transit cargo movement between India's NER and Bangladesh

**(i) By rail**

Financial Year	2013	2014	2015	2016	2017	2018	2019	2020
Container*	6,484	6,654	6,807	6,943	7,063	7,165	7,250	7,318
<b>Freight charges (India)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
5	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
10	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07
15	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11
30	0.19	0.20	0.20	0.21	0.21	0.21	0.22	0.22
<b>Freight charges (Bangladesh)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
5	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
10	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07
15	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11
30	0.19	0.20	0.20	0.21	0.21	0.21	0.22	0.22
<b>Container handling charges (Bangladesh)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
75	0.49	0.50	0.51	0.52	0.53	0.54	0.54	0.55
100	0.65	0.67	0.68	0.69	0.71	0.72	0.73	0.73
125	0.81	0.83	0.85	0.87	0.88	0.90	0.91	0.91

**(ii) By road**

Financial Year	2013	2014	2015	2016	2017	2018	2019	2020
Container*	85,592	87,341	89,041	90,697	92,311	93,887	95,427	96,933
<b>Freight charges (India)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
5	0.43	0.44	0.45	0.45	0.46	0.47	0.48	0.48
10	0.86	0.87	0.89	0.91	0.92	0.94	0.95	0.97
15	1.28	1.31	1.34	1.36	1.38	1.41	1.43	1.45
30	2.57	2.62	2.67	2.72	2.77	2.82	2.86	2.91
<b>Transit fee (Bangladesh)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
5	0.43	0.44	0.45	0.45	0.46	0.47	0.48	0.48
10	0.86	0.87	0.89	0.91	0.92	0.94	0.95	0.97
15	1.28	1.31	1.34	1.36	1.38	1.41	1.43	1.45
30	2.57	2.62	2.67	2.72	2.77	2.82	2.86	2.91
<b>Container handling charges (Bangladesh)</b>								
<b>Per container (US\$)</b>	<b>Total (US\$ million)</b>							
75	6.42	6.55	6.68	6.8	6.92	7.04	7.16	7.27
100	8.56	8.73	8.9	9.07	9.23	9.39	9.54	9.69
125	10.7	10.92	11.13	11.34	11.54	11.74	11.93	12.12

\*Container, taken in '000 TEUs.

# Conclusion and recommendations

Transaction costs and the time spent at border crossings affect trade flows in very much the same way as tariffs. It could therefore be argued that the benefits of trade liberalization in South Asia have thus far been limited since the region has largely failed to reduce transaction costs and time spent at border crossings. This study also highlights, among other things, the importance of transit in South Asia for enhanced regional connectivity.

There are indeed sizeable gains that South Asian countries can realize if measures are taken to facilitate cross border movement of goods within the region. According to this study, SAARC Corridor 1 (Lahore to Agartala) has the potential to become a technically efficient corridor, and transit arrangements between Bangladesh, Bhutan, India and Nepal are financially attractive projects. Effective transit arrangements could transform South Asia from a least-integrated to a highly-integrated region, consequently providing additional dynamic benefits.<sup>15</sup>

A regional transit system in South Asia is a precondition for higher trade. Therefore, South Asian countries should move beyond the existing pseudo-bilateral transit arrangements in order to improve connectivity and build bridges among the people of the region so as to infuse a new dynamism to regional trade and investment. Well-developed transit arrangements would also transform SAARC Road Corridors into SAARC Economic Corridors. Moreover, having a regional transit arrangement would also

help South Asian countries comply with their international commitments such as GATT Article V and the WTO TFA.

While GATT Article V talks about freedom of transit for international trade, the WTO TFA contains a number of provisions to facilitate transit trade, such as new rules relating to transit formalities, documentation requirements and the treatment of traffic in transit. These provisions are particularly important for LLDCs. Considering that improved rules on transit in TFA can facilitate deeper integration in South Asia, SAARC countries should exploit this opportunity to implement new transit rules in support of regional integration in South Asia. Possible accession of other non-SAARC countries in the regional transit agreement can also be explored.

South Asian governments should also encourage private sector logistics providers to play effective roles in strengthening the regional transit arrangement. To avoid multiple handling of goods at borders, regional logistics companies with special approval from respective governments may be allowed to handle containerized cargo on a “door-to-door” basis across the region or sub-region. Necessary legal and regulatory support measures, such as single insurance and guarantee, acceptance to TIR carnet, mutual recognition of standards, compatibility of national transit or motor vehicles rules and regulations, application of information and communication technology (ICT), among others, should also be provided along with transit facili-

*Improved rules on transit in the Trade Facilitation Agreement of the WTO can facilitate deeper integration in South Asia.*

**Table 7.1** Transit milestones

Period	Major milestones
Within one year (2015)	<ul style="list-style-type: none"> <li>• Signing of SAARC Regional Railways Agreement and the SAARC Motor Vehicles Agreement.</li> <li>• Identification of transit corridor and trial run, both rail and road.</li> <li>• Signing of Regional or Sub-regional Transit Agreement.</li> <li>• Organizing an international conference on regional transit.</li> <li>• Strengthening national bodies and the regional institution that deal with transit issues.</li> </ul>
2–3 years (2016–2017)	<ul style="list-style-type: none"> <li>• Signing of transit protocols.</li> <li>• Empowering revenue collecting authorities.</li> <li>• Developing a regional transit arrangement, such as acceptance of single insurance and guarantee, TIR carnet, mutual recognition of standards, compatibility of national transit or motor vehicles rules and regulations, application of ICT, dispute settlement, compensations, disaster management, etc.</li> <li>• Allowing logistics service providers and transport operators to transport goods, particularly by road, along transit corridors.</li> <li>• Training and capacity building on transit at national and regional levels to custom house agents, transport operators, logistics companies, etc.</li> <li>• Developing an ICT interface for regional transit and interoperability of corresponding national arrangements.</li> </ul>
4–5 years (2018–2019)	<ul style="list-style-type: none"> <li>• Developing special transit vehicles which can travel across the region in compatibility with road parcel load.</li> <li>• Introducing a special arrangement for compensation to countries facing financial loss.</li> <li>• Introducing new transit corridors.</li> </ul>

ties.<sup>16</sup> The major milestones to be crossed in order to introduce an effective transit arrangement in South Asia are presented in Table 7.1.

In addition, a detailed study with involvement of multilateral organizations on the feasibility and operational arrangements of transit in the region may be necessary. South Asia can learn from similar arrangements elsewhere in the world, such as the transit agreement between Denmark, Norway and Sweden;

South Africa and Mozambique; member countries of the European Union, among others.

A Trade and Transport Facilitation Monitoring Mechanism may be considered at the regional level to monitor the implementation of trade transit corridors. Importantly, the SAARC Secretariat and other relevant institutions need to be strengthened and empowered to effectively implement and monitor the regional transit agreement in South Asia.

# Endnotes

- <sup>1</sup> See, for example, De (2012). There are also studies which have concluded that trade liberalization alone cannot increase trade, if not supported by trade facilitation. See, for example, ADB-UNESCAP (2009).
- <sup>2</sup> See the Declaration of the 14th SAARC Summit, available at [www.saarc-sec.org/main.php](http://www.saarc-sec.org/main.php).
- <sup>3</sup> See, for example, UNESCAP (2007); WTO (2005a, 2005b, 2008).
- <sup>4</sup> WTO (2013).
- <sup>5</sup> See, for example, Subramanian (2001), ADB (2005), Arnold (2007), Wilson and Ostuki (2007).
- <sup>6</sup> A trilateral transit understanding between Bangladesh, India and Nepal is in place in order to facilitate overland trade between Nepal and Bangladesh through India.
- <sup>7</sup> Currently, there are 56 transport-related international legal instruments aimed at facilitating the movement of goods, people and vehicles across international borders, initiated by the Economic Commission for Europe. For details of selected international Conventions on transport facilitation, including those contained in UNESCAP Resolution 48/11, see UNESCAP (2007).
- <sup>8</sup> This was an interim arrangement that identified the commodities to be traded, and which fixed a monetary ceiling for the export/import of each commodity with a view to achieving balanced trade. This arrangement was later replaced by a new agreement in July 1973. The new agreement was amended in December 1974 to include a clause that bilateral trade between the two countries would be conducted in convertible currency effective 1 January 1975. The current agreement was signed on 21 March 2006, replacing the earlier agreement signed on 4 October 1980.
- <sup>9</sup> The routes are Gede (India)–Darsana (Bangladesh), Singhabad (India)–Rohanpur (Bangladesh), and Agartala (India)–Akhaura (Bangladesh).
- <sup>10</sup> See, for example, Rahmatullah (2006, 2010); Padeco (2005); Ojha (2014); JICA (2014).
- <sup>11</sup> ADB (2005).
- <sup>12</sup> DEA is a linear programming methodology used to measure the efficiency of multiple decision-making units (DMUs) when the production process presents a structure of multiple inputs and outputs. In general, it is an applied linear programming used to estimate an empirical production technology frontier. Building on the ideas of Farrell (1957), Charnes, Cooper and Rhodes (1978) applied linear programming to estimate an empirical production technology frontier for the first time. Other than comparing efficiency across DMUs within an organization, DEA has also been used to compare efficiency across firms. There are several types of DEA with the most basic being CCR based on Charnes, Cooper and Rhodes (1978). However, there are also DEA which address either constant returns to scale or variable returns to scale. The main developments of DEA in the 1970s and 1980s are documented by Seiford and Thrall (1990).
- <sup>13</sup> Data for intra-country movement of goods through rail, air and water is publicly available, but data for intra-country movement of goods through road is not publicly available. The latter set of data has been obtained from the Indian Road Congress Statistics (Federation of Freight Forwarders' Associations in India and Central Institute of Road Transport).
- <sup>14</sup> An impounded dock is an artificial dock system built inside land with dedicated passage to waterways.
- <sup>15</sup> Note that the study recommends that transit trade be limited to movement of cargoes in containers.
- <sup>16</sup> Some of these issues were discussed at an international conference organized by CUTS International. See CUTS (2014).



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# Definition and data sources

Variable	Description	Definition
Output (Y1)	Trade in volume	Trade carried in a corridor, calculated in terms of TEUs
Input (X1)	Distance	Length of corridor in kilometre
Input (X2)	No. of border crossing	No. of customs border-crossing along a particular corridor
Input (X3)	Transport standard	Standard follows the carrying capacity based on UNESCAP Asian Highway database
Input (X4)	Time to transport	Time to transport along a particular corridor in hours
Input (X5)	Cost to transport	Cost to transport along a particular corridor in US dollars
Input (X6)	No. of documents	No. of documents required for trade along a particular corridor

Data	Sources
Trade in container	Author, based on COMTRADE
Distance	Author, based on UNESCAP
No. of border crossing	Author, based on UNESCAP
Standard	Author, based on UNESCAP
Time to transport	Author, calculated based on Maersk Freight Database
Cost to transport	Author, calculated based on Maersk Freight Database
No. of documents	Author, calculated based on World Bank



South Asia Watch on Trade, Economics and Environment (SAWTEE) is a regional network that operates through its secretariat in Kathmandu and member institutions from five South Asian countries, namely Bangladesh, India, Nepal, Pakistan and Sri Lanka. The overall objective of SAWTEE is to build the capacity of concerned stakeholders in South Asia in the context of liberalization and globalization.

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