Sector Roadmaps

1. Transport Sector

A. Regional Sector Performance, Problems, and Opportunities

1. In South Asia, initial transport infrastructure systems are already in place. Road transport caters to 65-70% or more of the freight movement in South Asia and it is a dominant mode in the overall regional transport system. South Asia has one of the largest railway networks in the world, spreading over 77,000 route kilometers. About 70% of this network is with India, Pakistan, and Sri Lanka. The region is also interconnected by main line and deep sea container and feeder ships distributing containers throughout the region from hub ports. Regarding air transport, the overall growth in passenger and intraregional freight travel has been one of the highest in the world at 12% and 7.5% per annum, respectively.

2. However, the transport systems of South Asia, particularly the mainland countries, have largely developed within national context, with little consideration given to cross border connectivity such as compatibility and uniformity of standards in infrastructure. In addition, the systems are fractured and have fallen into disuse in many areas. Apart from the inconvenience to travelers, the deteriorating transport networks have raised the cost of travel and trade.

3. Factors that hinder the development of regional transport system in South Asia include both physical and non-physical barriers. These barriers vary from modes of transport. For road transport, one of the biggest problems is the lack of sufficient capacity of national transport corridors to serve intraregional traffic. The lack of road bypasses near major towns and cities, and inadequate road access to borders constitute additional challenges to the road transport. Major physical barriers of rail transport include inadequate loop lengths, missing links of shorter lengths in the border areas, lack of physical infrastructure at interchange points, load restrictions on bridges, and lack of coordination for gauge conversion programs on different railway systems.

4. Cumbersome procedures for cross-border movements of goods, services, and people are among the most challenging non-physical barriers in South Asia across different modes of transport. In addition, non-tariff barriers (e.g., lack of harmonization of customs procedures, visa regulations, unofficial charges, protection of local trucking, poor port community systems) continue to cause delays at border crossings.

5. While improving regional transport systems in South Asia is a formidable task, the benefits from improved regional transport systems in the region are significant. A World Bank study[1] shows that the impact of raising South Asia's transport and trade facilitation performance toward international levels would result in large gains for both intraregional and interregional trade. If the efficiency of transport and trade facilitation was improved, intraregional trade within South Asia would increase by almost 60% and trade with the rest of the world would increase by over 30%.

[1] World Bank. 2004. *Trade Facilitation and Regional Integration in South Asia: Accelerating the Gains to Trade with Capacity Building.* Washington D.C.

B. Regional and Government's Sector Strategies

6. The Thimphu Summit for South Asia Association for Regional Cooperation (SAARC) in 2010 recognized the importance of developing transport infrastructure and transit facilities, especially for the landlocked countries to promote intra-SAARC trade and declared 2010–2020 as the "Decade of Intra-regional Connectivity in SAARC."

7. As commitment for regional cooperation is growing in South Asia, the countries' focus is now shifting from in-country connectivity to regional and, ultimately, global connectivity. Bangladesh emphasizes importance of regional connectivity in its National Land Transport Policy, and also in the road master plan and the railway investment plan. Under the 10th Five Year Plan, Bhutan prioritizes the construction of the Southern East–West Highway to facilitate industrial development in the southern economic hubs, and integrate them more effectively with their primary markets in India. In India, the 11th Five Year Plan highlights the need for strengthening both social and physical infrastructure to promote close economic cooperation in South Asia and also with countries of Southeast Asia and East Asia. The Maldives has focused on strengthening regional cooperation and maintaining regional stability. Nepal's Three Year Interim Plan endorses development of the regional trade route for promoting South Asian regional development. Sri Lanka's 10-year development framework identifies Colombo Port as the South Asia gateway to the world, and intermodal railway links with ports and roads. The national road master plan provides a rationale of road development to enhance efficient transport logistics for integration with the global economy. At the regional level, governments have developed policy framework and strategies for regional connectivity and identified priority regional transport networks.[2]

C. ADB Regional Sector Experience and Assistance Program

8. ADB's support for regional development of the transport sector in South Asia comprised both technical and project assistance. It adopted a parallel, two-pronged approach by simultaneously pursuing both regional and national projects of subregional significance. The said approach will be continued for the period 2011–2015 and will focus on construction and improvement of transport corridors connecting countries within the region and with countries in neighboring regions, and construction and improvement of port facilities, civil aviation infrastructure, and logistics systems.

9. ADB will continue support for (i) project financing; (ii) strategy development, project preparation, studies, and transport related agreements; and (iii) institutional reforms and capacity building, including measures to increase private sector participation in the construction, maintenance, and operation of transport infrastructure.

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[2] SAARC Secretariat. 2007. *SAARC Regional Multimodal Transport Study*. Kathmandu; ADB. 2008. *Final Report of RETA6335: Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Transport Infrastructure and Logistics Study*. Manila.

Table 1. Regional Sector Results Framework: Transport Sector, 2011–2015

Regional Sector Outcome		Regional Sector Outputs		ADB Sector Operations	
Outcome with ADB Contribution	**Indicators with Targets and Baselines**	**Output with ADB Contribution**	**Indicators with Incremental Targets**	**Planned and Ongoing ADB Interventions**	**Main Outputs Expected from ADB Contributions**
Increased movement of goods and people between Bangladesh, Bhutan, Maldives, Nepal, India, Sri Lanka, and their neighbors	Cross-border freight traffic increased by 20% (from $5 billion in value in 2009)	• Transport systems among Bangladesh, Bhutan, Maldives, Nepal, India, and Sri Lanka through roads, railways, ports and gateways expanded, improved, and maintained	• At least 1,000 km of regional transport routes (road and railway) constructed or improved • One airport built • Infrastructure facilities of at least three gateways constructed or improved • Container-handling capacity of Colombo port facilities increased by 100% (from 4 million TEU in 2009) • Cross-border agreements adopted • Average cross-border transit time from Kolkata to Dhaka for trucks decreased by 1 week (from about 20 days in 2009)	**(i) Planned Key Activity Areas** Development of railway, road, port, and airport **(ii) Projects in pipeline** • Bangladesh: South-West Road Network, $146 million[a] • Bangladesh: Subregional Railway Investment Program (Tranche 1), $150 million[a] • Bhutan: Air Transport Connectivity Enhancement, $6.92 million[a] • India: Railway Sector Investment II (Tranche 1), $150 million[a] • India: North Eastern States Roads Investment Program (Tranche 2), $123 million[a] • India: Railway Sector Investment Program II (Tranche 2), $100 million[a] • India: Railway Sector Investment Program II (Tranche 3), $150 million[a] • India: West Bengal North-South Connectivity, $150 million[a] • Nepal: Strategic Roads Improvement, $64.7 million[a] • Nepal: Strategic Roads Improvement (Additional Financing), $70 million[a] • Sri Lanka: Northern Road Connectivity, $92 million[a]	• Approximately 840 km of railway tracks double tracked and 640 km electrified by 2017 (India) • Dhaka-Chittagong railway line double tracked, and tracks and signaling systems in other key corridors improved (Bangladesh) • At least one physical infrastructure and cross border regimes to be improved • 160 km of road to be upgraded (AH and SRMTS, and customs modernization) • At least 100 km of road network to be upgraded (National of regional impacts, AH/SRMTS or their alternate) • 1 airport to be built in the eastern part of Bhutan • At least 100 km of road network of regional importance to be upgraded (AH/SRMTS or their alternate) • 2 integrated multimodal logistic centers to be connected to Colombo Port (SRMTS) • At least infrastructure

Regional Sector Outcome		Regional Sector Outputs		ADB Sector Operations	
				• Subregional Road Connectivity (Bangladesh, Bhutan, India, and Nepal), $170 million **(iii) Ongoing Projects** • Bangladesh: Subregional Transport Project Preparatory Facility, $23 million[a] • Bhutan: Road Network II, $39 million[a] • Nepal: Subregional Transport Enhancement, $50 million[a]	facilities of one gateway to be improved (SRMTS)

AH = Asian Highway, km = kilometer, SRMTS = SAARC Regional Multimodal Transport Study, TEU = twenty-foot equivalent unit.

[a] National project with regional dimensions.

2. Energy Sector

A. Regional Sector Performance, Problems, and Opportunities

1. The energy resources of South Asia are not uniformly spread over the region. India and Pakistan account for the major share of coal (107,635 million tons) and natural gas (72 trillion cubic feet). Bangladesh also has a significant level of natural gas and coal reserves. Bhutan (30,000MW) and Nepal (42,000MW) have a large share of potential hydropower resources in relation to their energy needs. But as a region, hydrocarbon reserves in South Asia are limited. All the countries are rich in other renewable resources and have a good potential for their utilization. The region has a total of 223 million tonnes of biomass which has huge potential for electricity generation. Optimal development of these resources to satisfy the needs of the region will lower the energy costs and improve energy security in the region, particularly at times of external shocks under volatile petroleum prices.

2. The energy sector in the region is currently facing many issues. Some of these issues are country-specific but they directly or indirectly also affect regional energy cooperation. The others are mostly direct barriers to regional cooperation. These issues are: (i) absence of a strong political commitment to regional cooperation translated into action; (ii) lack of cross-border trade related energy infrastructure; (iii) lack of harmonious energy policy and related frameworks; (iv) rising energy deficit in many countries; (v) absence of a power market; (vi) inadequate institutional and human resource capacity; (vii) poor operational and financial performance of electricity sector; (viii) lack of funds in the public sector to undertake capital intensive projects; (ix) rising import dependence, particularly to satisfy petroleum requirements; (x) dominance of a single fuel for electricity generation; and (xi) limited utilization of the renewable energy potential.

3. Many of these barriers to the development of the regional energy sector indeed provide ample opportunities for countries in South Asia to strengthen their cooperation in the energy sector. The prerequisites for energy sector development are the availability of energy resources, potential for their exploitation, competitive cost advantages, adequate infrastructure, harmonious and enabling policies, availability of technology, financial/physical resources and above all strong political will to develop the sector. Regional energy cooperation, that could ease supply constraints, will also require removal of trade barriers, creation of cross border energy infrastructure, and above all mutual trust and understanding among the relevant stakeholders within the region.

4. Regional cooperation in the energy sector in South Asia will also result in greater opportunities for public and private partnership. Capacity of the private sector in the region has been improved considerably over the years. It can therefore play a pivotal role in cross-border infrastructure development by bringing required finances and influencing enabling environment when formulating action plans for specific regional cooperation activities. It can be particularly active in hydropower and other renewable energy as well as cross-border transmission development in the form of PPPs. The enabling environment for the private sector participation for cross-border projects needs to be established through national policies, appropriate bilateral agreements, harmonised regulatory requirements and technical standards among the relevant neighbouring countries.

B. Regional and Governments' Sector Strategy

5. The energy policy initiatives of South Asian countries are primarily focused on increasing access to commercial energy sources by its population and satisfying increasing demand for

industrial and commercial activities. In all of these countries, access to electricity in rural areas is relatively low compared to nation-wide average. Further these policies, while targeting the above objectives, are also aimed at reducing import dependence particularly in light of volatile oil markets and its impact of the national economies. This means meeting their energy needs to the maximum extent possible through the development of indigenous resources and bridging the gap through imports. In the case of Nepal and Bhutan, the energy policies revolve around hydropower development while Bangladesh relies heavily on developing its gas resources. Currently, increased attention has been given to developing its domestic coal resources for power generation. India strongly emphasizes the development of coal power, hydropower potential and other renewable energy sources such as wind and solar power. Sri Lanka has already developed its hydropower potential to a greater extent and has given incentives for renewable energy development. It is currently in the process of diversifying its energy sources into coal power considering energy security concerns, though coal needs to be imported. In the case of Maldives, it relies on petroleum as the main source of commercial energy due to its geographical nature. It is also gradually expanding its renewable energy development in the areas of solar and wind power.

6. Bilateral, multilateral, and regional cooperation is also given increased attention by all the countries in the region in planning their energy requirements based on the regional energy cooperation highlighted at the twelfth SAARC meeting and reemphasized at the 16th SAARC meeting. India is presently supporting Bhutan to develop its hydropower resources to meet its own requirement and export the surplus energy to India. Similar initiatives exist for India-Nepal cooperation including improving cross-border transmission interconnections. The electricity grid interconnections between Bangladesh-India and India-Sri Lanka are also being examined. Bhutan and Nepal have already taken policy decisions to accelerate the development of their hydropower resources, promote regional energy trade and export surplus hydropower to the countries in the region. Bhutan and Nepal are in the process of enhancing power interconnection capacity with India.

7. One of the goals set forth by most of the countries in the region is to provide electricity to all. India and Bangladesh have set 2012 to achieve this goal. Other countries also have similar targets. Enhancing commercial energy supply to the rural masses and to meet the increasing energy demand of other sectors of economy, the countries are committed to exploit their indigenous energy resources and to import energy from neighbouring countries and regions. These endeavours aim to meet the energy needs of the population and to alleviate poverty in the countries and the region.

C. ADB Regional Sector Experience and Assistance Program

8. ADB has been providing technical and financial assistance for development projects in South Asia, including those in energy sector. Overall, ADB's performance in the energy sector has been successful and instrumental in the social and economic development of the South Asian nations.

9. For 2011 to 2015, ADB will focus its regional energy cooperation initiatives targeting (i) improving cross border electricity transmission connectivity; (ii) increased power trade; (iii) increased cooperation in energy efficiency and clean power development; and (iv) capacity development. The key outputs of the ADB interventions would be (i) preparation and implementation of specific infrastructure projects; (ii) capacity development activities such as workshops, training programs and exchange visits; and (iii) knowledge products.

Table 2. Regional Sector Results Framework: Energy Sector, 2011–2015

Regional Sector Outcome		Regional Sector Outputs		ADB Sector Operations	
Outcome with ADB Contribution	**Indicators with Targets and Baselines**	**Output with ADB Contribution**	**Indicators with Incremental Targets**	**Planned and Ongoing ADB Interventions**	**Main Outputs Expected from ADB Contributions**
Increased energy supply in Bangladesh, Nepal, India, Sri Lanka through development of cross-border cooperation including development of power generation and transmission infrastructure	• Cross-border power transfer capacity increased from about 1200MW in 2010 to 3500MW by 2015 • Generation investment initiated by private investors (or PPP) for cross-border trade increase from 120MW in 2010 to 850MW in 2015	• Bangladesh-India power transmission interconnection • India-Nepal power transmission interconnection • India-Sri Lanka power transmission interconnection • Construction of hydropower plants in Nepal (PPP) for export • Capacity building in the regional energy sector institutions	• 500MW of power transmission capacity increased between Bangladesh and India • 1000MW of power transmission capacity increased between India and Nepal • Construction of another 1000MW cross-border line commenced • 1000MW of power transmission capacity increased between India and Sri Lanka • Approximately 675 MW of additional power exported to India by Nepal • Annual CO2 emissions reduced by 2 million tons • Establishment of a South Asia Utility Forum • Establishment of a South Asia Energy Database	**(i) Planned Key Activity Areas:** Cross-border transmission (81%); Power Generation for export (19%) **(ii) Projects in the Pipeline** • Bangladesh: Regional Power Generation and Transmission, $260 million[a] • Bangladesh-India Electrical Grid Interconnection (Additional Financing), $20 million • Nepal: Energy Access and Efficiency Improvement II, $75 million • Nepal: Energy Access and Efficiency Improvement III, $50 million **(iii) Ongoing Projects** • Bhutan: Green Power Development, $80 million • RETA 6368: SAARC Regional Energy Trade Study, $1 million • R-PATA: South Asia Regional Power Exchange, $750,000	**(i) Planned Key Activity Areas:** • 2500MW of power transmission capacity • 750MW of power generation capacity for export **(ii) Projects in the Pipeline** • 500MW of transmission capacity (HVDC) established between Bangladesh and India • 2000MW of transmission capacity (HVAC) established between India and Nepal • Implementation of Dagachchu hydropower plant • Study report on the options for power trade and cooperation in South Asia • Feasibility report on South Asia Power Exchange

CO_2 = carbon dioxide, HVAC = heating, ventilation, and air conditioning, HVDC = high-voltage direct current, MW = megawatt, PPP = public private partnership, RETA = regional technical assistance, R-PATA = regional policy and advisory technical assistance

[a] This project has potential regional dimension as it is expected to include strengthening transmission infrastructure to facilitate the eastern border interconnection with India.

3. Trade Facilitation Sector

A. Regional Sector Performance, Problems, and Opportunities

1. South Asia is among the least economically integrated regions in the world. While intra-SAARC exports grew by an average of 16% per annum, from $2,890 million in 2000 to $14,669 million in 2010, the total share of intraregional trade to the subregion's total trade remains low at 4.3% in 2010.

2. From 2005 onwards, South Asia made progress in facilitating inland and cross border trade. On average, time for export was reduced from 35 days in 2007 to 32 days in 2011. Time to import was also reduced from 38 days to 33 days during the same period.[3] However, time and monetary costs of cross border trade in South Asia are still high relative to other developing regions. The region performs inadequately particularly in processing trade procedures at borders largely due to weak institutional structures. While the factors vary across countries, several common problems across South Asian countries have emerged such as large number of trading documents; lack of automation and streamlining of customs and security clearance procedures; lack of transit agreements, and weak cooperation among governments to set up efficient integrated-border management arrangements, including single-window systems.

3. Within this context, trade facilitation has increasingly become the key to unlocking the opportunities of South Asia's intraregional trade. Trade facilitation is traditionally defined to *include policies and processes that reduce the cost, time and uncertainty associated with engaging in international trade.*[4] Trade facilitation therefore encompasses measures that simplify, harmonize, and standardize trade procedures and documents.

4. If appropriate trade facilitation measures are implemented, large opportunities can be realized for intraregional trade in South Asia. Estimates indicate major potential gains in trade and welfare from trade facilitation reforms.[5] Reducing time at the exporter's border by 10% increases bilateral trade between any pair of countries by 4.3%. Improving efficiency in institutional procedures reaps maximum benefits in terms of trade gains. If South Asia could reach up to the average level in East Asia in the quality and procedures related to administration, trade is estimated to increase by up to 17%.[6] Therefore, from both a low-cost and high-benefit perspective, enhancing simplicity, timeliness, and transparency in trade procedures and documents should be the first priority for trade facilitation reforms in South Asia.[7]

B. Regional and Government's Sector Strategies

5. The 16th SAARC Summit resolved to take concrete measures to improve trade facilitation within the South Asia Free Trade Agreement (SAFTA) cooperation framework, the most important regional economic initiative since the formation of SAARC in 1985. Under the SAFTA framework, South Asian countries agreed on the free movement of goods between countries, adoption of trade facilitation and other measures, and simplification and harmonization of trade procedures by the contracting states in the relevant areas. At the First

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[3] World Bank Doing Business Reports 2006 – 2010.
[4] ADB and ESCAP. 2009. *Designing and Implementing Trade Facilitation in Asia and the Pacific*
[5] Wilson, Mann and Otsuki, 2006; Djankov, Freud and Pham, 2009; Perrson, 2009; Hertel and Mirza, 2009.
[6] ADB. 2010. Trade Facilitation in South Asia: Why It Matters Most? *SARD Flashnote 9.*
[7] World Bank Doing Business Reports 2006 – 2010.

and Second Regional Cooperation and Integration (RCI) High Level Forums (HLF) held at ADB in 2009 and 2010, countries agreed to develop integrated check posts to facilitate trade, improve physical infrastructure and undertake customs harmonization.

6. At the country level, trade facilitation is now taking a high priority in national development plans. In addition to support from international organizations such as the World Bank, International Trade Center (ITC) under the WTO-UN, and ADB, countries themselves are mobilizing significant resources to implement sweeping trade facilitation reforms. Maldives launched the Customs Re-engineering Program in 2009 to improve technologies, management and practices in customs procedures. Among several initiatives, Bangladesh installed a customs scanning system at the Chittagong Port, a fully automated Customs system under ASYCUDA (an automated system for customs data management), and has implemented fast-track assessment systems on export consignments. The Department of Customs in Sri Lanka developed the Electronic Data Interchange (EDI) project in 2004 that now processes up to 5000 customs declarations each month.[8]

C. ADB Regional Sector Experience and Assistance Program

7. The Regional Cooperation Strategy and Program (RCSP) 2006-2008 supported activities to promote customs reforms, simplify and harmonize rules, standards and procedures, facilitate transit agreements, promote efficient banking and insurance services, and improve border facilities and transport infrastructure.

8. Using lessons from the past, and capitalizing on other subregional efforts, ADB will implement trade facilitation measures in South Asia through a mix of regional and national projects with significant regional implications. Based on the recommendations of the HLF, lessons from the previous RCS, recommendations of various ADB studies, and particularly the need for ADB to be more focused, ADB supported trade facilitation initiatives will be centered on five key priority areas: (i) customs modernization and harmonization; (ii) strengthening of logistics services and facilities; (iii) integrated cross border management; (iv) transit agreements; and (v) simplification of procedures for business visas. Public Private Partnership will be an integral part of all key components.

9. As initial support, ADB is designing a sector development program (SDP) in trade facilitation for Bangladesh, Bhutan, India, and Nepal. The SDP includes a program component and a project component. As presently envisaged, the program component covering Bangladesh, Bhutan, and Nepal will support a prioritized set of policy, regulatory and institutional reforms for customs modernization consistent with best international practices. The project component is likely to provide investment support for upgrading infrastructure in selected/ prioritized border crossings that are crucial for intraregional trade.

[8] Sri Lanka Customs Service, 2010; Asia Pacific Trade Facilitation Forum, UNESCAP, 2009

Table 3. Regional Sector Results Framework: Trade Facilitation Sector, 2011–2015

Regional Sector Outcome		Regional Sector Outputs		ADB Sector Operations	
Outcome with ADB contributions	**Indicators with Targets and Baselines**	**Output with ADB Contribution**	**Indicators with Incremental Targets**	**Planned and Ongoing ADB Interventions**	**Main Outputs Expected from ADB Contributions**
Increased intraregional trade	Intraregional trade share increased from 3.9%, in 2009 to 5-6% by 2015.	• Improved trade efficiency • Reduced time and monetary costs to intra-regional trade	• Average time to import and export reduced by 26% to 20 days by 2015 from 27 days in 2010 • Number of documents required for export/import reduced by 50% to 5 by 2015 from 8-9 in 2010 • Computerized and automated customs systems set up initially in at least two countries by 2015	**(i) Planned Key Activity Areas** • Customs automation and harmonization/ • Transit reforms, agreements, regulatory framework **(ii) Projects in the Pipeline** • Regional Trade Facilitation (Bangladesh, Bhutan, and Nepal), $40million[a] **(iii) Ongoing Projects** • SASEC Information Highway Project • SASEC Transport Logistics and Trade Facilitation Project	**(i) Planned Key Activity Areas** • At least two facilities of two cross border check points upgraded by 2015 with full custom automation • At least two cross-border transit agreements adopted by 2015 • National trade facilitation bodies established in at least three countries by 2015 **(ii) Projects in the Pipeline** • Two to three countries adopted computerized and automated customs systems by 2015 • Two to three integrated transport and trade corridors established by 2015

SASEC = South Asia Subregional Association for Economic Cooperation
[a] Country specific discussion is ongoing following the fact -finding mission in April 2011.