

Thematic
Evaluation

Evaluation of ADB Support for the South Asia Subregional Economic Cooperation Program, 2011–2023



Independent
Evaluation



Raising development impact through evaluation

Thematic Evaluation
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NOTE

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Abbreviations

ADB	–	Asian Development Bank
APSI	–	Action Plan for SASEC Initiatives
CAREC	–	Central Asia Regional Economic Cooperation
COVID-19	–	coronavirus disease
EU	–	European Union
FMM	–	Finance Ministers' Meeting
GDP	–	gross domestic product
GHG	–	greenhouse gas
GMS	–	Greater Mekong Subregion
GPG	–	global public good
IED	–	Independent Evaluation Department
km	–	kilometer
MDB	–	multilateral development bank
MW	–	megawatt
NOM	–	Nodal Officials' Meeting
NTB	–	non-tariff barriers
NTM	–	non-tariff measures
PBL	–	policy-based loans
PRC	–	People's Republic of China
RCI	–	regional cooperation and integration
RPG	–	regional public good
SAARC	–	South Asian Association for Regional Cooperation
SASEC	–	South Asia Subregional Economic Cooperation
SOM	–	Senior Officials' Meeting
SPS	–	sanitary and phytosanitary
TA	–	technical assistance
TBT	–	technical barriers to trade
TFSF	–	Trade Facilitation Strategic Framework
VCIC	–	Vizag–Chennai Industrial Corridor

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Foreword

The Asian Development Bank (ADB) accords a high priority to regional cooperation and integration (RCI), recognizing that integration through connectivity, trade, investments, and provision of regional public goods, above all climate change, are essential towards achieving sustainable growth. One of the seven operational priorities of ADB Strategy 2030 is to foster RCI. ADB has facilitated regional cooperation in the Asia and Pacific region through loans and grants, knowledge transfer, technical assistance, and the convening of ADB members to exchange development experiences and seek cooperative solutions. ADB supports three major RCI programs, among others, namely the Central Asia Regional Economic Cooperation (CAREC) Program, the Greater Mekong Subregion (GMS) Economic Cooperation Program, and the South Asia Subregional Economic Cooperation (SASEC) Program. The Independent Evaluation Department has been evaluating ADB support for each of the three RCI programs and this evaluation of SASEC is the final one in this series of three studies that aim to identify lessons for the future role of RCI within ADB.

The SASEC subregion is larger than the CAREC or GMS subregions, measured by either aggregate gross domestic product or population, and many of its countries have experienced relatively high rates of economic growth over the past two decades or so. But it is the least open to trade with an average annual trade to gross domestic product ratio of countries at 49% over 2015-2022, compared to 69% for the CAREC subregion and 110% for the GMS. It has a large but as yet unfulfilled potential for the growth of intra-subregional trade, energy, and investment ties. SASEC countries share some of the largest water basins and rivers in the world, a rich endowment of dense forests, and stunning biodiversity. At the same time, they suffer from severe air pollution and water scarcity and have a large carbon footprint. The potential gains from cooperation in regional public goods are evident.

The evaluation assessed the performance of ADB support for improving connectivity, economic competitiveness, and the provision of regional public goods in the SASEC subregion during 2011–2023. It found that ADB has made progress in investing in transport and energy connectivity, though more remains to be done. For example, while border crossings are easier than before, delays remain among the worst in the world. Bilateral electricity trading has grown rapidly, but the rich potential of a multilateral energy trading system is still to be realized. ADB's contribution to improving economic competitiveness has been limited. Non-tariff barriers to trade persist and private sector development is a work in progress. SASEC has paid relatively little attention to regional public goods, although ADB has supported clean energy in some countries.

The institutional setup, the instruments, and ADB's role as the secretariat of the SASEC Program have served the Program well and are appreciated by member countries. But they will need to evolve to meet the demands of the new development consensus for higher quality interventions, greater attention to climate change and other regional public goods, an enhanced role for the private sector, and strengthening partnerships among development partners and stakeholders.



Emmanuel Jimenez
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Executive Summary

Established in 2001, the South Asia Subregional Economic Cooperation (SASEC) Program brings together seven nations, Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, and Sri Lanka, in a partnership to expedite regional economic integration. Central to the vision of the program is to boost intraregional trade through improved infrastructure and reduced trade barriers and to extend connectivity and trade to Southeast Asian and global markets. SASEC has functioned as an institution-light and project-heavy program since its inception. It has a strong focus on operational planning, project investments and coordination, and knowledge exchange. The Asian Development Bank (ADB) has been the lead financier of the program and serves as its secretariat.

Like the two other major subregional cooperation programs supported by ADB, the Central Asia Regional Economic Cooperation (CAREC) Program and the Greater Mekong Subregion (GMS) Economic Cooperation Program, the SASEC Program is nested within the ADB regional cooperation and integration (RCI) strategic framework, which has been steadily evolving to reflect the growing importance and complexity of RCI operations. As articulated in ADB RCI strategies, the core ADB RCI objectives are to promote regional connectivity, regional competitiveness with global and regional trade and investment opportunities expanded, and provision of regional public goods by addressing shared social and environmental concerns.

The SASEC subregion has over three times the aggregate gross domestic product (GDP) and four times the population of CAREC or GMS. But it is the least open to trade, with an average annual trade to GDP ratio of countries at 49% over 2015–2022, compared to 69% for CAREC and 110% for GMS. The region's GDP is growing fast, but still falls short of generating sufficient jobs. The percentage of people living in poverty has declined steadily, but the number of poor people is still very large, surpassing most other regions in the world. Climate change poses one of the biggest threats to sustainable

development across the SASEC countries. Environmental degradation and pollution are a serious challenge as well. SASEC countries need to diversify their economies and trade, move up the value chain, and improve gender equality. Regional cooperation is widely recognized as an effective avenue for promoting growth, creating jobs, and reducing poverty.

Over the evaluation period, 2011–2023, ADB approved \$12.5 billion in sovereign loans for 67 investment projects under the SASEC Program, of which \$1.9 billion was cofinancing. The lending was predominantly focused on transport, energy, and economic corridors, although trade facilitation and other sectors also received funding. During the period, ADB approved \$157.5 million for 100 technical assistance (TA) projects, including \$60.6 million in cofinancing. The TA funds were roughly evenly distributed among trade facilitation, transport, and energy, with a small share allocated to economic corridors. ADB support for SASEC has steadily gathered momentum with a rise in both investment lending and TA activities over the second half of the evaluation period. This was achieved despite the impact of the global coronavirus disease pandemic which delayed SASEC activities as countries initially closed borders, restricted travel, shut down production and then prioritized pandemic responses during 2020–2022.

This evaluation assessed the performance and development results of ADB's strategic, institutional, and operations support for the SASEC Program over 2011–2023. It focused on answering the evaluation questions regarding how ADB support has contributed to achieving the three strategic RCI objectives of connectivity, competitiveness, and regional public goods, and effectiveness of the SASEC institutional framework and ADB's role as the secretariat.

Findings

ADB support brought together SASEC member countries to coordinate, synchronize, and

finance investments and policy and institutional reforms and made progress in helping improve connectivity in the subregion. ADB transport sector support has contributed to the financing of a large proportion of the SASEC road corridor network, which will likely be considerably better connected when ongoing projects are completed. ADB supported a comprehensive trade facilitation reform program, with a focus on customs modernization and digitalization and improving the infrastructure at some land crossings (usually as part of transport projects). Stakeholder feedback and data from published technical reports indicate that border crossing times were reduced appreciably during the evaluation period.

ADB energy investments and TA have made a valuable contribution to improved electricity grid connectivity and have strengthened bilateral electricity trading between India and its neighbors Bangladesh, Bhutan, and Nepal. The Bangladesh-India Electrical Grid Interconnection Project and the Second Electrical Grid Interconnection Project pioneered the first international transmission line in South Asia. ADB support in Nepal is focusing on addressing the weakest link in the nation's electricity trading infrastructure and is likely to make a significant contribution to Nepal-India energy connectivity. In Bhutan, ADB made a notable impact by enhancing Bhutan's hydropower generation capacity, the main constraint on Bhutan's power export to India, particularly by building up local project planning and execution capability through two green power investment projects.

Despite these achievements, some connectivity gaps remain. Most notably, the roads linking to border crossing points are often still in poor condition. Delays at some major border crossings, although having decreased over the past decade, remain very high.

Modern transport systems focus on multimodal aspects to ensure that the transport costs can be optimized to deliver transport services at the lowest cost. The use of containers can simplify and accelerate transport movements and positively impact connectivity by quickly shifting goods from one mode to another, better ensure safety of the merchandise as well as helping to

accelerate customs processing. However, ADB SASEC support for multimodal and containerized transport has been limited, although some initial progress has been made recently through targeted TA support.

Enhanced electricity grid connectivity has supported bilateral energy trade, mostly to and from India, but little progress has been made in multilateral trade. Multilateral power trading would foster energy connectivity across more countries, improve competition and market dynamics, and enhance the energy system's efficiency, reliability, and sustainability. ADB's efforts to promote a power trading system through SASEC have been too gradual.

ADB support for the SASEC Program has had a limited impact on regional competitiveness, as measured by increased global and regional trade and investment. ADB provided investment and TA support to promote economic corridor development which fosters the development of regional value chains. It also specifically supported value chain development in tourism and agriculture, two important trade sectors. These measures complemented ADB support for regional connectivity, which contributed to competitiveness by alleviating constraints on the movements of goods and services and increasing access to markets and production factors across borders. However, these efforts to promote competitiveness are still at an early stage. ADB has provided only limited support to address non-tariff barriers and the issues affecting private sector development, both of which are major constraints on trade and investment in the subregion.

An analysis of trade and investment data conducted by the evaluation shows that both intra-subregional trade and trade with the rest of the world saw only weak growth during the evaluation period, particularly from 2015 onward. Intra-subregional inward foreign direct investment declined during the period. There were no signs of value chain advancement or diversification in trade flows, and there has been only a modest reduction in the overall trade cost for the subregion. The modest progress was consistent across the evaluation period; however, it was made more

challenging during 2020–2022 due to the impacts from the coronavirus disease pandemic.

RPGs have not been a strategic focus of ADB work. Regional public goods (RPGs) are embedded within various interventions in the energy sector, and ADB SASEC energy operations in Bhutan and Nepal have contributed to climate change mitigation. ADB also supported two regional TA projects for solar photovoltaics and another two regional TA projects promoting energy efficiency, but the impact has been modest. SASEC has yet to focus its activities on addressing the RPGs issue in other sectors. The SASEC Program has not prioritized RPGs in its strategic documents, although ADB strategies have accorded RPGs a prominent role in RCI operations. SASEC has not been active across other important RPG spaces, such as transboundary water management, disaster risk management, control of communicable diseases, and air pollution control, where the potential for cooperation with other development partners is substantial.

ADB support for SASEC's institutional framework has been well recognized by member countries but ADB needs to focus more on strategic and operational guidance to address the increasingly complex cross-country challenges in the subregion. Given its streamlined administrative structure and a project centric approach, the SASEC Program has focused on working level activities and projects aiming for efficient implementation. It provides a platform to bring together member countries to coordinate and finance investments and reform measures. Member countries have appreciated this approach and institutional setup, especially in the short term, as it has provided needed investments in an efficient way.

Over the second half of the evaluation period, the SASEC Program gathered momentum and its institutions began to evolve to deliver a more strategic agenda, with its highest decision-making body recently upgraded to the Finance Ministers' Meeting. The role played by knowledge products and capacity building has acquired greater importance, and SASEC has started to broaden its approach towards policies, institutions, and markets in its key

focus areas of transport, energy, and trade facilitation.

Overall, member countries widely appreciated SASEC's institutional arrangements and its responsive nature. They uniformly expressed their satisfaction with the instrumental role the secretariat has played and with ADB's knowledge and capacity building efforts.

However, the secretariat could have been more proactive in helping SASEC members to address more complex priorities such as quality and results of interventions, the role of the private sector, regional public goods, and the specific needs of smaller countries. ADB could also have supported SASEC to develop a comprehensive long-term strategy.

ADB support would have been more effective if more emphasis had been placed on cooperation and knowledge sharing with other development partners, think tanks, and research institutions. The SASEC Program does not have a mechanism for development partner collaboration. Other development partners have increasingly supported investments and TA that are aligned with SASEC objectives. Think tanks and other institutions are working on RCI issues as well and can offer valuable expertise and perspectives.

Recommendations

The evaluation makes the following recommendations to ADB:

Recommendation 1. Support the SASEC Program in developing an overall long-term strategy to achieve its vision and improve its alignment with ADB RCI strategies. With a new version of the SASEC Vision now being formulated and the current Operational Plan, 2016–2025 close to completion, this would be an opportune time for ADB to support the development of a strategy, to link the vision with the investment pipeline. A strategy, based on a comprehensive analysis of opportunities and challenges, would enable the program to identify and focus on areas that will help achieve the new vision. In supporting its delivery, a strategy could also provide guidance on the broader and more integrated support needed

for working across sectors, strengthening capacity, increasing policy dialogue, and fostering partnerships. Such a strategy would improve alignment with ADB strategic goals and RCI guidance, particularly in regional public goods. In addition to climate change and disaster risk mitigation and preparedness, the strategy could include other thematic priorities such as communicable disease control, the environment, and gender. It should provide direction for improving the overall enabling environment for the private sector to support development of value chains. The strategy should include a results framework and a monitoring plan with appropriate outcome indicators, baselines, and targets. The strategy and results framework could also guide the sequencing and prioritization of actions for addressing both longer-term challenges and more immediate opportunities. As an initial step, it could strengthen the identification of areas of need where there is greater consensus between member countries for collective action.

Recommendation 2. Support the broadened agenda for regional integration and regional public goods through strengthened knowledge work, policy advice, and sector diagnostics. ADB needs to strengthen its targeted TA to generate knowledge for regional integration and RPGs. It should promote knowledge sharing and consensus among SASEC member countries and between the SASEC Program and other ADB units. Addressing persistent challenges such as developing regional value chains and economic corridors, enhancing regional energy integration, and creating a more integrated and multimodal transport system requires underpinning by diagnostics and planning. Support for diagnostic work is needed to help develop directional reports as well as detailed operational plans and technical guidelines for regional public goods, in particular to address climate change and environmental degradation. TA will need to be more closely associated with and complemented by investment operations as well as potential policy-based lending that supports regulatory reforms.

Recommendation 3. Strengthen the regional lens and justification in the conception and design of SASEC projects. A regional focus

should be at the heart of all SASEC operations. This will enhance the contribution to regional outcomes of single-country projects, the primary instrument in support of SASEC. ADB should reform its project preparation and classification systems to ensure that RCI objectives are appropriately reflected in project design and a project's regional benefits are significant. It needs to adopt a more programmatic approach to providing support that is coordinated across countries to address key challenges not easily solved by stand-alone single-country projects. Support for the development of economic corridors and regional value chains should be more focused on interlinkages, synergies, and the harmonization of relevant regulations, standards, and practices across countries. Transport projects could be better integrated with support for trade facilitation and economic corridors. Transport operations also need to shift from being dominated by road improvements to include other modes, in particular aviation and maritime transport, which are important for connectivity of the smaller member countries. There is a need to strengthen a regional market-based electricity trading structure to maximize the regional benefits of energy trade. In trade facilitation, support could be expanded beyond customs modernization to addressing other key non-tariff barriers to trade. When feasible, ADB should pursue multi-country projects for their demonstration effect as they bring higher visibility and potential impact.

Recommendation 4. Strengthen support for the SASEC governance structure and ADB's role as the SASEC secretariat. As RPGs and private sector development increasingly become a critical part of the agenda, ADB should strengthen support for creating supporting working and technical groups to help build consensus and institutionalize these emerging priorities into the SASEC Program. Similar groups are needed to take up the unique challenges of smaller countries to ensure that the gains from SASEC's work are realized by all member countries. The strengthened SASEC agenda will also require the secretariat to exercise a stronger role in strategic thinking and in imparting direction to future SASEC activities, while also tapping into ADB cross-sector expertise. ADB resource allocations will need to

be consistent with the increased role of the secretariat.

Recommendation 5. Promote a platform for coordination and engagement with other development partners, think tanks and research institutions. Partner participation in strategy and work planning discussions, including through involvement in working groups, should be considered as appropriate. The convening power of partners collectively on complex RPGs and other regional issues such as management

of transboundary water basin resources, communicable disease surveillance, and regional market-based energy trading could yield dividends. Improved coordination with other development partners will also enable better tailoring of knowledge, TA, and financing, taking account of the comparative advantages of different partners. Engaging think tanks and research institutions in strategic discussions would enable ADB to leverage their knowledge and perspectives.

Linkage between Findings and Recommendations

Findings, Issues, and References	Recommendations
<ul style="list-style-type: none"> - In contrast to the two other major subregional programs, Greater Mekong Subregion Economic Cooperation Program and Central Asia Regional Economic Cooperation Program, South Asia Subregional Economic Cooperation (SASEC) Program has not formulated an overall strategy. This is in keeping with its institution-light philosophy and its focus on infrastructure projects and customs modernization (para. 90). - Such a strategy would improve alignment with the Asian Development Bank (ADB) Regional Cooperation Integration (RCI) Strategy and other guidance. A comprehensive and coherent SASEC overall strategy is essential for several reasons. First, it would enable a fuller discussion of opportunities, challenges, risks, and trade-offs. The strategy could identify and integrate key long-term priorities and goals, which could then be used to develop an innovative, diversified portfolio. Second, a formal mid-term review of the strategy would offer an opportunity for a re-think for the second half of the 10-year period, if necessary. Third, such a strategy would ensure that monitoring was done, and corresponding corrections made (para. 91). - The SASEC program is aligned with the ADB RCI objectives of connectivity and competitiveness, but it has not had an approach to addressing regional public goods, although recent Finance Ministers' Meetings have suggested that thinking on this point may be evolving. Water management, disaster risk management, and communicable disease control are all absent from the Operational Plan, 2016–2025. The SASEC Program has paid insufficient attention to the potential role of the private sector. Nor has the SASEC Program assigned any priority to gender and social inclusion, even though ADB's Strategy 2030 set a target that at least 75% of ADB's committed operations should promote gender quality by 2030 (para. 92). 	<p>Recommendation 1. Support the SASEC Program in developing an overall long-term strategy to achieve its vision and improve its alignment with ADB RCI strategies.</p>
<ul style="list-style-type: none"> - The secretariat could have been more proactive in helping SASEC members with innovative solutions to address challenging but increasingly critical priorities, such as quality and results, the role of the private sector, and regional public goods. ADB could have encouraged SASEC to develop a comprehensive long-term strategy through position and conceptual papers that would have strengthened the program (para. 95). - The transport sector support was largely single mode focused and there is limited evidence of multimodal analysis linking modes and broadening options for alternative origin to destination transport chains. ADB analysis has also been highly infrastructure-focused with only a limited assessment of requirements for policy adjustments (para. 45). - ADB's efforts to advance multilateral power trade through SASEC have been too gradual. ADB's capacity building and knowledge technical assistance portfolio on power trading, both Bangladesh-specific and regional, has been modest (para. 49). - ...ADB support for economic corridor development is still a work-in-progress, while ADB support for tourism and agricultural value chains has been limited (para 51). 	<p>Recommendation 2. Support the broadened agenda for regional integration and regional public goods through strengthened knowledge work, policy advice, and sector diagnostics.</p>
<ul style="list-style-type: none"> - ...the SASEC Program has largely followed a country-by-country and project-by-project approach to project identification, preparation, and implementation. This has resulted in an inadequate focus on the regional dimensions of SASEC projects, which has affected the achievement of the SASEC program's strategic regional objectives (para. 86). - Individual projects are often designed and implemented as single-country projects without adequate consideration of the need to address cross-border issues or to integrate with other sectors (para. 86). - Economic corridor development under the SASEC Program is still a work in progress and has a limited focus on regional dimensions (para. 53). - In the energy sector, despite improvements in electricity generation and grid connectivity, the subregion has not established a regional multilateral electricity market (para. 48). 	<p>Recommendation 3. Strengthen the regional lens and justification in the conception and design of SASEC projects.</p>
<ul style="list-style-type: none"> - The Senior Officials' Meeting considered whether to expand the SASEC working groups to include a new working group on climate change, pandemic and disaster resilience but decided not to (para. 87). - ADB has provided only limited support for private sector development or improvements to the business environment. In 2022, the SASEC Business Forum was created for receiving feedback on SASEC operations from the private sector. However, private sector development environment has not been included as a priority in the SASEC Vision, SASEC Operational Plan 2016–2025, or any of their updates (para. 62). - Smaller countries would like more emphasis on topics that are relevant to their circumstances at SASEC meetings (para. 99). - The secretariat could have been more proactive in helping SASEC members with innovative solutions to address challenging but increasingly critical priorities, such as quality and results of interventions, the role of the private sector, and regional public goods (para. 95). 	<p>Recommendation 4. Strengthen support for the SASEC governance structure and ADB's role as the SASEC secretariat.</p>
<ul style="list-style-type: none"> - There is scope for better leveraging the synergies that could result from greater cooperation with other development partners, think tanks, and research institutions. There is no structured mechanism of cooperation between the SASEC Program and other stakeholders (para. 96). - Greater integration of these stakeholders would provide a more coherent and more informed discussion of the region's needs, identify potential funding and knowledge support at an earlier stage, and facilitate greater synergy on interventions to deliver improved regional results (para. 96). 	<p>Recommendation 5. Promote a platform for coordination and engagement with other development partners, think tanks and research institutions.</p>

Context to the Evaluation

1. Established in 2001, responding to the need to expedite regional cooperation in the subregion, the South Asia Subregional Economic Cooperation (SASEC) Program brings together seven South Asian nations, Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, and Sri Lanka, in a non-treaty-based partnership (Box 1).¹ The program focuses on coordinating investment, knowledge, and capacity building activities across member countries and aims to promote sustainable growth and poverty reduction by reaping the benefits of regional economic integration. Central to the vision of the program is to boost intra-subregional connectivity and trade through improved infrastructure and reduced barriers to trade. The Asian Development Bank (ADB) has been the lead financier of the program and serves as its secretariat. Regional cooperation in South Asia is widely recognized as an effective avenue for promoting growth, creating jobs, and reducing poverty.²

Box 1: Background to the South Asia Subregional Economic Cooperation Program

The South Asia Subregional Economic Cooperation (SASEC) Program was founded by Bangladesh, Bhutan, India, and Nepal with the support from the Asian Development Bank (ADB) in 2001, aiming to facilitate closer economic cooperation among these countries through coordinated support for investments and knowledge work. Maldives and Sri Lanka became full SASEC members in May 2014, and Myanmar joined in February 2017 following several years as an active observer. While SASEC is a distinct, non-treaty-based entity, it works in coordination with the South Asian Association for Regional Cooperation and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. These are two treaty-based regional organizations whose member countries largely coincide with SASEC's, and, to a great extent, they share the goals and interests of SASEC. South Asian Association for Regional Cooperation was established in 1985 and aims to promote regional integration among its member countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation was founded in 1997 to promote economic cooperation between countries bordering the Bay of Bengal. Its member countries are Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand. ADB provides technical assistance to both organizations.

Source: IED. 2023. *Evaluation Approach Paper: Evaluation of ADB Support for the South Asia Subregional Economic Cooperation Program, 2011–2022*. ADB.

2. Like the two other major ADB-supported subregional cooperation programs, the Central Asia Regional Economic Cooperation (CAREC) Program and the Greater Mekong Subregion (GMS) Economic Cooperation Program, the SASEC Program is nested within the ADB regional cooperation and integration (RCI) strategic framework. In view of the importance of RCI operations for the overall mission of the ADB, specifically mandated by the ADB Charter, the ADB has periodically articulated a RCI strategy, beginning in 1994, that has been steadily evolving to reflect the growing importance and complexity of RCI operations. ADB's Strategy 2030 identifies RCI as one of the institution's seven operational priorities. A key ADB RCI objective is to support and strengthen subregional RCI initiatives.

¹ ADB placed its regular assistance to Myanmar on hold effective 1 February 2021. All references to Myanmar in this report are based on information available as of 1 February 2021 and interviews with entities in Myanmar's neighboring countries, development partners, and relevant ADB staff.

² Y. Basnett and M. Razzaque. 2014. *Regional Integration in South Asia: An Overview. Regional Integration in South Asia Trends, Challenges and Prospects*. Commonwealth Institute.

A. Critical Challenges in the SASEC Subregion

1. Strong Country-Led Growth but Limited Benefits from Regional Integration

3. The SASEC member countries have recently made substantial social and economic progress but face a series of structural challenges going forward. Most SASEC member countries have achieved robust economic growth over the past decade, led by private investment and export growth. Capital inflows have been resilient and the percentage of people living in poverty has steadily declined. However, the number of poor people is still very large, surpassing the figures in most other regions in the world.³ South Asia is projected to grow at a faster rate over the medium term than any other developing country groupings, at nearly 6% per annum.⁴ However, current growth rates lag behind those of the pre-pandemic period and are still not high enough for creating adequate jobs for the vast population in the subregion. The outlook faces challenges from weak financial systems, fragile fiscal positions, and unfavorable private business and investment environments. Most SASEC countries also need to diversify their economies and export markets, move up the value chain, and improve gender equality.

4. The Asia-Pacific Regional Cooperation and Integration Index shows that the member countries of the SASEC Program are significantly less integrated than those of other subregional programs in Asia and the Pacific, including the Association of Southeast Asian Nations, the CAREC Program, and the GMS Program.⁵ The SASEC subregion has over three times the aggregate gross domestic product (GDP) and four times the population of the CAREC or GMS subregions. But it is the least open to trade, with an average annual trade-to-GDP ratio of countries at 49% over 2015–2022, compared to 69% for the CAREC subregion and 110% for the GMS subregion.⁶ Just 5.7% of SASEC's trade is intra-subregional, based on the average over 2019–2021, compared with 21.6% in Southeast Asia and 35.2% in East Asia.⁷ The shares of SASEC countries in world exports and in global inward foreign direct investment flows are very low, averaging 2.4% over 2020–2022 and 4.7% over 2018–2020 respectively.⁸

5. Regional cooperation in SASEC is made more challenging by the subregion's economic geography and context. India is the largest economy in South Asia, and its economic policies, trade practices, and political decisions significantly impact the region. India accounts for 85% of SASEC's GDP (excluding Myanmar). It is located in the middle of the subregion, geographically separating other countries. A number of the smaller SASEC countries are landlocked or island nations, which traditionally have relied on bilateral relations with India rather than multilateral arrangements. This has made the smaller SASEC countries highly dependent on India for trade and they have little leverage in subregional cooperation. Unlike East and Southeast Asia, South Asia has had a long history of inward-looking growth strategies. The recent outward-looking stance of the two largest SASEC economies, India and Bangladesh, which account for 97% of SASEC GDP, is focused more on benefits from trade with the rest of the world

³ ADB. 2020. *South Asia Subregional Economic Cooperation Operational Plan, 2016–2025 Update*; and Independent Evaluation Department analysis of relevant macroeconomic data.

⁴ International Monetary Fund. 2024. *World Economic Outlook*.

⁵ ADB. 2024. *Asia Economic Integration Report: Decarbonizing Global Value Chains*.

⁶ The large differences in GDP and population here are due to the different geographical coverage of the three regional programs. Both GMS and CAREC cover only two autonomous regions or provinces of the People's Republic of China, while SASEC covers the whole of India. The average export-to-GDP ratios are Independent Evaluation Department (IED) estimates using the World Development Indicators database data (World Bank. 2023. [World Development Indicators](#)). The estimates were based on averaging the ratios of countries for each year and then averaging those yearly figures over the entire period from 2015 to 2022. The SASEC subregion figures do not include Maldives and Myanmar, for which no data is available. For CAREC and GMS, the following countries have missing data in some years: Afghanistan, 2015–2019 and Lao People's Democratic Republic, 2017–2022.

⁷ IED calculations based on data from the Integration Indicators database of Asia Regional Integration Center, Economic. [Integration Indicators](#) (accessed 25 April 2024). CAREC and GMS are not very good comparators for SASEC because the large volume of their trade with the People's Republic of China distorts their intra-subregional trade shares.

⁸ IED calculations based on data available from (i) World Bank. Exports of Goods and Services (BoP, current \$). World Bank. [World Development Indicators](#) (accessed 20 September 2023); and (ii) data from the Integration Indicators database of Asia Regional Integration Center. [Integration Indicators](#) (accessed 20 September 2023).

than on trade with their small neighbors. As in other regions, geopolitical issues make it challenging to promote cross-country coordination and cooperation.

2. Significant Climate and Environmental Risks

6. Impacts from climate change pose one of the biggest threats to sustainable development across the SASEC countries. Much of the subregion's population is vulnerable, living in densely populated river valleys or low-lying lands that are increasingly subject to severe floods, damaging storms, droughts, and heat waves resulting from global warming and altered climate patterns. In particular, global warming is projected to accelerate the melting of the Himalayan glaciers and to increase discharges into the downstream rivers that traverse several SASEC countries, with higher flows during the monsoon season leading to floods.⁹ The growing frequency and severity of weather disasters pose risks to food and water security, especially since the agriculture sector is very vulnerable to climate risks. The subregion is one of the most water-stressed regions globally and has a large and rapidly expanding population.¹⁰ The Global Climate Risk Index ranks most SASEC countries among the top 20 countries worst affected by extreme weather events globally during 2000–2019.¹¹

7. Cities and towns in the region experience life-threatening air quality pollution which contains several air pollutants that exceed World Health Organization standards and are harmful to human health. South Asia is a major focal point of air pollution and home to 37 of the 40 most polluted cities in the world.¹² Based on recorded concentrations of particulate matter 2.5, over 60% of the region's population lives in heavily polluted locations. Moreover, a considerable portion of the air pollution is transboundary, with the impacts of the pollution felt far away from its source. As airsheds can cross international boundaries, solutions necessarily require regional actions. Increased economic activities like urbanization, agriculture, and sand mining in upstream watersheds and Himalayan forests can degrade water quality through increased pollution loads and sediment transport and has a huge impact on the water quality in downstream countries.¹³

B. SASEC Program Strategic Priorities and ADB Assistance

8. Over the evaluation period 2011–2023, SASEC strategic priorities evolved from an initial concentration on transport, energy, and trade facilitation to a more holistic approach that encompassed economic corridors. With the adoption of the SASEC Operational Plan, 2016–2025, SASEC strategic priorities expanded into maritime transport, maritime trade facilitation, renewable energy and energy efficiency, and economic corridor development. The long-term operational plan set four strategic objectives, one each in the areas of transport, trade facilitation, energy, and economic corridor development:

- (i) enhancing physical connectivity through multimodal transport systems that are aligned closely with the development of markets (along six SASEC road corridors);
- (ii) following a comprehensive approach to transport and trade facilitation and expanding the focus on land-based trade to include seaborne trade;
- (iii) enhancing electricity trade to meet energy needs and secure power reliability in the subregion; and

⁹ S. Nepal, W. Flügel, and A.B. Shrestha. 2014. [Upstream-downstream linkages of hydrological processes in the Himalayan region. Ecological Processes](#). 3(1), 1-16.

¹⁰ B. Behera, et al. 2023. [Agriculture, Food Security, and Climate Change in South Asia: A New Perspective on Sustainable Development](#). *Environment, Development and Sustainability*. 6 July; Asia Society Policy Institute. 2023. [Addressing South Asia's Climate-Water Security Nexus](#).

¹¹ Global Climate Risk Index 2021. 2021. [Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000–2019](#)

¹² World Bank. 2020. [Striving for Clean Air: Air Pollution and Public Health in South Asia](#).

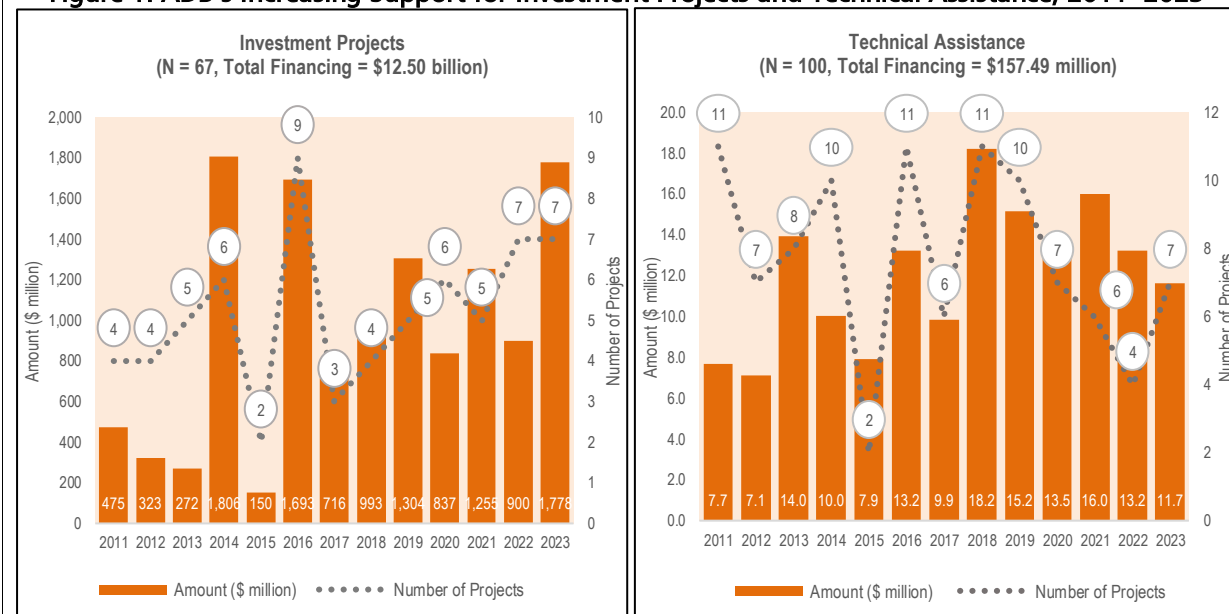
¹³ J. Mainali and H. Chang. 2021. [Environmental and Spatial Factors Affecting Surface Water Quality in a Himalayan Watershed, Central Nepal](#). *Environmental and Sustainability Indicators*. 9.

- (iv) promoting synergies between the economic corridors being developed in individual SASEC countries and optimizing the development impacts of these corridors through improved cross-border links.

9. Each strategic objective has a set of operational priorities supported by a long list of projects identified by individual SASEC countries with ADB's support. This list was streamlined in a 2020 update of the long-term operational plan. The operational priorities and projects under the SASEC operational plan and its update were expected to serve as the foundation for achieving the SASEC Vision, which was adopted at the first SASEC Finance Ministers' Meeting (FMM) held in New Delhi, India, in April 2017. The SASEC Vision calls for tapping the potential of resources-to-industry linkages, leveraging industry-to-industry linkages for the development of regional value chains, and expanding the region's trade and commerce by providing access to markets through the development of subregional gateways and hubs. The SASEC Vision was updated a year later to reflect cooperation opportunities with Myanmar, which joined SASEC a few months after the launch of the 2017 Vision.

10. Over the evaluation period, 2011–2023, ADB support for SASEC has overall steadily gathered momentum with a rise in both investment lending and knowledge and technical assistance (TA) activities (Figure 1). This was achieved despite the impact of the global coronavirus disease (COVID-19) pandemic which delayed SASEC activities as countries initially closed borders, restricted travel, shut down production, and then prioritized pandemic responses during 2020–2022. The ramping up of ADB activities over the second half of the evaluation period is principally related to lending for road projects in the north-east of India and in Bangladesh, the central part of the SASEC transport corridor network, and policy-based loans (PBLs) to support trade facilitation reforms in Bhutan, Bangladesh, and Nepal. Without losing its project focus, ADB has of late increasingly taken on programmatic activities, e.g., in energy markets, trade facilitation, and high-performance corridors, relying increasingly on knowledge products. Increased support has also been provided to SASEC institutions which have been evolving to deliver a more ambitious and complex agenda. This development was reflected in the increased commitment for technical assistance.

Figure 1: ADB's Increasing Support for Investment Projects and Technical Assistance, 2011–2023



ADB = Asian Development Bank, IED = Independent Evaluation Department, N = number, SASEC = South Asia Subregional Economic Cooperation.

Source: IED calculations based on the portfolio data from the SASEC Secretariat.

11. During 2011–2023, ADB approved \$12.5 billion in sovereign loans for 67 investment projects for SASEC, of which \$1.9 billion was cofinancing. About 66% of the financing was for transport, 15% for energy, 13% for economic corridors, with the rest mainly for trade facilitation, health and tourism (Table 1). Over the same period, ADB approved \$157.5 million for 100 TA projects, including \$60.6 million in cofinancing. About 38% of the TA financing was for trade facilitation, 33% for transport, 20% for energy, and 5% for economic corridors. In terms of ADB’s RCI pillars, most ADB financing went to support connectivity, followed by competitiveness, with little directed at regional public goods (RPGs). It needs to be recognized that the connectivity pillar also contributes to enhancing competitiveness. Most investment projects focused on a single country, although they were to various degrees coordinated at the regional level during the programming process and are expected to have regional implications. In contrast, 29 out of the 100 TA projects were regionally focused, covering several or all countries in the subregion during 2011–2023 (Appendix 1, Table A1.1). Bangladesh received the largest share of total ADB financing (44%), followed by India (28%), Nepal (20%), Sri Lanka (5%), Bhutan (3%), and Maldives (0.2%) (Appendix 1, Table A1.1). In the ADB portfolio, 33% of investment projects and 61% of TA projects have been completed (Appendix 1, Table A1.2).

Table 1: Transport Receives the Most ADB Support for Investment Projects and Technical Assistance, 2011–2023

Sector	Investment Projects		Technical Assistance	
	Amount (\$ million)	Share (%)	Amount (\$ million)	Share (%)
Economic corridors	1,652.50	13	7.60	5
Energy	1,834.27	15	31.31	20
Health	359.47	3	2.00	1
Industry and trade	-	0	3.35	2
Tourism	65.21	1	1.00	1
Trade facilitation	355.67	3	60.25	38
Transport	8,234.07	66	51.98	33
Total	12,501.19	100	157.49	100

ADB = Asian Development Bank, IED = Independent Evaluation Department, SASEC = South Asia Subregional Economic Cooperation.

Note: Totals may not sum precisely because of rounding.

Source: IED calculations based on portfolio data from the SASEC secretariat.

C. Purpose, Questions, and Methodology of the Evaluation

12. This evaluation assesses the performance and development results of the ADB’s strategic, institutional, and operations support for the SASEC Program over 2011–2023. It is the third in a series of three evaluations conducted by the Independent Evaluation Department (IED) to assess ADB support for subregional economic cooperation programs. The first examined the GMS Program (2021), the second was devoted to the CAREC Program (2023). Upon completion of this third evaluation, IED will produce an overall evaluation of ADB performance in delivering its Charter-based RCI objectives through subregional programs, drawing on the findings and lessons learned from all three evaluations.

13. The evaluation’s findings and recommendations will inform future ADB support for the SASEC Program and other regional programs with the aim of improving strategies, implementation, and institutional arrangements. This is the first evaluation of the program since its inception in 2001. It aims to contribute to the update by SASEC member countries of the SASEC Vision and the Operational Plan 2016–2025. As with the GMS and CAREC evaluations, the SASEC evaluation will generate lessons to help shape the design and implementation of the subregional economic cooperation model, taking into account the strategic shifts in the development consensus that emphasize support for global and regional public goods such as climate change, a greatly expanded role for the private sector, and an

improved focus on results as reflected in the ongoing discussions on multilateral development bank evolution.

14. The evaluation questions are centered on ADB's contributions to achieving the three RCI strategic objectives of connectivity, competitiveness, and RPGs and on the effectiveness of the SASEC Program's institutional framework.¹⁴ These include:

- (i) **Connectivity.** To what extent has ADB support for SASEC improved connectivity in the subregion? The envisaged connectivity outcomes include improved cross-border linkages and flows of goods and services.
- (ii) **Competitiveness.** To what extent has ADB support for SASEC resulted in increased competitiveness as measured by increased global and regional trade and investment opportunities within the subregion?
- (iii) **RPGs.** To what extent has ADB support improved the provision of RPGs that address shared environmental, health, and other challenges?
- (iv) **Strategic and institutional framework.** How effective has the SASEC strategic and institutional framework been, including ADB's role as the SASEC secretariat, in delivering the connectivity, competitiveness, and RPG objectives?

15. The main theme of the theory of change for the evaluation is that ADB's infrastructure, policy, and institutional support should contribute to removing constraints on cross-border linkages and trade and investment across borders and promote cooperation on addressing shared social and environmental concerns. In the early period of the SASEC Program, poor infrastructure and lack of access were major impediments to private sector development and regional integration and, as a result, improving the road network was a key step to improving regional connectivity and competitiveness. Addressing RPGs was largely integrated into investments and focused on social and environmental issues. ADB's SASEC support includes loans, grants, TA, assistance for strategy and operational plan development, and broker services to facilitate dialogue and knowledge sharing. Appendix 2 provides a detailed description of the theory of change.

16. The evaluation places an emphasis on assessing the causal pathways of ADB's contribution from inputs to outputs, intermediate outcomes, and outcomes; the potential contributions by other actors; and the validity of contribution claims. It uses a mixed-methods approach, triangulating qualitative and quantitative evidence from multiple sources. This includes reviewing relevant documents and literature, assessing ADB's SASEC operations portfolio and relevant IED evaluations, and analyzing feedback collected from mission interviews. These studies are complemented by analyses of secondary data from the ADB Asia-Pacific Regional Cooperation and Integration Index Database and publicly available external sources, and by assessments using geospatial mapping, contribution tracing (Appendix 3), and the gravity model of trade-based analysis (Appendix 4).

17. The rest of the report is organized as follows. The next chapter assesses ADB's contribution to improving the connectivity in the subregion. The following chapter evaluates ADB's performance in helping enhance regional competitiveness and provision of regional public goods. The subsequent chapter reviews SASEC's organizational and management effectiveness, including ADB's role as the SASEC Secretariat. The final chapter summarizes the main findings of the evaluation and makes recommendations for what ADB could do to improve its support in the future.

¹⁴ While ADB's RCI objectives evolved through several RCI strategies, including the ADB RCI Strategy, 2006; the Operational Plan for Regional Cooperation and Integration, 2016–2020; and the Strategy 2030 Operational Plan for Priority 7, 2019–2024, the core emphasis has consistently been on (i) improving connectivity between economies, (ii) increasing competitiveness as measured by expanded global and regional trade and investment opportunities, and (iii) improving provision of regional public goods that address shared social and environmental risks and vulnerabilities. IED. 2023. *Thematic Evaluation: Evaluation of ADB Support for the Central Asia Regional Economic Cooperation Program, 2011–2022*. ADB.

Progress Made in Improving Regional Connectivity

18. ADB support brought together SASEC member countries to coordinate, synchronize, and finance investments and policy and institutional reforms and made progress in helping improve regional transport and energy connectivity in the subregion. ADB transport sector support has contributed to the financing of a large proportion of the SASEC road corridor network, which will likely be considerably better connected when ongoing projects are completed. ADB supported a comprehensive trade facilitation reform program, with a focus on customs modernization and digitalization and improving infrastructure at some land crossings as part of transport projects. Stakeholder feedback and data from published technical reports and governments show that border crossing times were reduced appreciably during the evaluation period. ADB energy TA and investments have made a valuable contribution to a strengthened bilateral electricity trading between India and its neighbors Bangladesh, Bhutan, and Nepal.

19. Despite these achievements, some major gaps remain. Most notably, the conditions of the roads linking border crossing points are still often in a poor condition. Delays at border crossings, although having decreased over the past decade, remain very high at some major posts. Support for multimodal and containerized transport and for developing a multilateral power trading system has been limited, although some initial progress has been made recently through targeted TA support.

A. Upgraded and Expanded Road Network Connectivity

1. From Expanding Trade Routes to Better Connecting Corridor Networks

20. Since the commencement of SASEC operations, priority has been given to supporting the transport sector, especially roads. This sector underpins a high proportion of economic and social activity and was identified as a core priority for SASEC based on discussions among SASEC member countries. During the evaluation period, SASEC countries placed the highest priority on roads, which carry the bulk of passenger and freight transport. Other modes were considered less important given their smaller contribution to transport demand and their limited role in regional transport movements.

21. SASEC investments in the road sector initially focused on upgrading and expanding the network along the major trade routes as well as the roads linking to these routes and border crossing points. ADB projects were identified based on the strategic and operational priorities developed by SASEC high officials' meetings and the transport working group. These early priorities were drawn from the plans prepared for the South Asian Association for Regional Cooperation (SAARC) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. ADB provided TA for preparing these early plans, mainly through the 2006 SAARC Regional Multimodal Transport Study and the 2008 Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation Transport Infrastructure and Logistics Study.

22. More recently, SASEC has shifted its focus to developing transport corridors to improve the functioning of the network. The early priorities were subsequently updated with the adoption of the SASEC Operational Plan 2016–2025 in 2016 and its update in 2020, both of which contained information

on financing from ADB, governments, and other development partners.¹⁵ The 2016 operational plan provided a sharper focus on developing an important road network serving regional trade in the subregion. In 2020, the SASEC road and railway corridors were adopted as part of the update of the 2016 operational plan. The identification of the SASEC corridors provided the basis to focus on the delivery of a better-connected network. In both the operational plan and its update, the strategic priorities for the road sector were to upgrade key routes to Asian Highway Class I standards, upgrade roads linking to primary SASEC routes and key borders, and upgrade access roads to borders and address last mile connectivity.

2. Moderate Alignment of the ADB-Supported Road Projects with the SASEC Corridor Network

23. About half of the ADB-supported road projects in the SASEC subregion were linked to the SASEC road corridor network as currently defined. The current road corridor network was defined in the SASEC Operational Plan Update in 2020. During 2011–2023, only about 54.7% of all ADB-financed SASEC road projects were on the current SASEC corridors, direct links to the corridors, or links to a border, reflecting the evolving nature of the SASEC operational priorities as well as the lack of a long-term regional operational plan to better guide project selection before 2016. In particular, projects approved in early years were aligned with operational priorities identified based on the transport demand and patterns at that time, which have changed over the years because of rapid economic growth. These earlier projects were not always closely aligned with current subregional priorities.

24. The ADB-supported roads which are not on the currently defined SASEC corridor network were largely approved before 2011. Table 2 indicates that only 1,373.2 kilometers (km), or 23.5%, were part of the current road corridors. An additional 1,667.7 km (28.6%) were roads linked to a SASEC corridor, 153.8 km (2.6%) were linked to a border, and a further 2,645.7 km (45.3%) were not on SASEC road corridor alignments.¹⁶ The roads that were not aligned with the SASEC road corridors were in Bhutan (22.5%), India (58.6%), and Nepal (19.3%). A high proportion of them were projects that were approved during 2001–2010 when the SASEC transport strategy and program was at an early stage of development.

Table 2: Alignment of ADB-Financed Roads with the Currently Defined SASEC Road Corridors, 2011–2023

Country	Not on SASEC Road Corridor		Near Border		Direct Link to SASEC Corridor		On SASEC Road Corridor		Total
	(km)	(%)	(km)	(%)	(km)	(%)	(km)	(%)	(km)
Bangladesh	0	0	0	0	0	0	509.0	100.0	509.0
Bhutan	105.6	22.5	131.6	28	232.1	49.5	0	0	469.3
India	2,390.6	58.6	0	0	1,106	27.1	586.1	14.4	4082.7
Nepal	149.4	19.3	22.3	2.9	324.2	41.9	278.1	35.9	773.9
Sri Lanka	0	0	0	0	5.5	100	0	0	5.5
Total	2,645.7	45.3	153.8	2.6	1,667.7	28.6	1,373.2	23.5	5,840.4

ADB = Asian Development Bank, IED = Independent Evaluation Department, km = kilometers, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. There were no investments in Maldives transport network.
2. Totals may not sum precisely because of rounding.

Source: IED estimates.

¹⁵ With the rapid growth in demand attributable to high levels of economic growth, rapidly increasing vehicle fleets and demand for mobility, the capacity of infrastructure is often quickly exceeded. In addition, the increasing demand for goods and services also can change travel patterns over time. The SASEC road network therefore need to be periodically reviewed based on economic developments to ensure it remains relevant to changing needs.

¹⁶ This breakdown of selection criteria follows the criteria used by SASEC and specified in the Operational Plan 2016–2025 (footnote 3).

3. Major Contribution to and Likely Improvement in Regional Road Connectivity

25. The SASEC road corridor network will likely be significantly better connected when ongoing projects under the SASEC action plans are completed and ADB support has played a key role in achieving this. As shown in the geospatial map under the figure in Box 2, the various road improvement projects financed by ADB, governments, and other development partners were closely aligned with the SASEC corridor network and together they nearly form a coherent road network.¹⁷ In addition to ADB's role in bringing governments together to support SASEC priorities, the investment financing from ADB is also significant as indicated in Table 3. Through its completed and ongoing projects during 2011–2023 period, ADB financed the improvement of 3,194.7 km of the network representing 34.5% of the total length of 9,273.1 km of the roads financed by different stakeholders as shown in the map in Box 2. Various development partners are contributing to the improvement of another 1,243.2 km (13.4%) and governments together with investments under various public–private partnership projects are investing in another 4,835.1 km (52.1%). The combined length of the various projects covers 71.5% of the total SASEC corridors, excluding the portion located in Myanmar (1,634.0 km).¹⁸

Table 3: ADB is a Key Financier of the SASEC Road Corridor Network, 2011–2023

Country	External Support				Government/PPP		
	ADB (km)	Share (%)	Partners (km)	Share (%)	Length (km)	Share (%)	Total (km)
Bangladesh	509.0	35.4	606.2	42.1	323.9	22.5	1439.1
Bhutan	363.7	100.0	0	0	0	0	363.7
India	1692.1	26.4	346.8	5.4	4363.5	68.2	6402.4
Nepal	624.5	64.3	247.1	25.4	99.8	10.3	971.5
Sri Lanka	5.5	5.6	43.1	44.6	48.0	49.7	96.5
Total	3194.7	34.5	1243.2	13.4	4835.1	52.1	9273.1

ADB = Asian Development Bank, km = kilometers, PPP = public–private partnership, SASEC = South Asia Subregional Economic Cooperation.

Note: Totals may not sum precisely because of rounding.

Source: IED estimates.

26. Although many of the road projects are ongoing, it is likely that they will meet their objectives. Experience with completed projects suggests that the ongoing projects will generally result in improved road infrastructure that meets the overall targets of length and quality which are the two primary parameters that contribute to increased connectivity. The evaluation's review of ADB's completed road projects under SASEC indicated that the outputs generally met or exceeded those specified at the time of appraisal. Improved roads generally resulted in a lowering of vehicle operating costs by 20%–50%, time savings frequently exceeded 40%, and traffic growth generally met or exceeded projections. Road improvements increased capacity by either widening roads to four lanes or full-width two-lane carriageways and reduced road roughness from more than 5 international roughness index to between 1.5 to 2.5 international roughness index. The traffic forecasts of completed projects were also within estimates based on high levels of economic growth that characterize the increase in transport demand for developing member countries in the SASEC region. While there is limited technical information on road improvement projects supported by governments and development partners, experience has shown that these investments are also likely to result in improved vehicle operating costs and time savings of a magnitude that is similar to those projects supported by ADB. On this basis, it is reasonable to assume that the resulting network is likely to be a considerably better connected SASEC road network.

¹⁷ The map illustrates ongoing and committed projects with funding approved by 2023. There are several projects in Bangladesh, Bhutan, India, and Nepal that are expected to receive funding in future years, including those in ADB's pipeline and the Action Plans for SASEC Initiatives, which will complete some of the current gaps in the SASEC road network. There are also portions of the network where no future investments are expected as existing roads are in good condition.

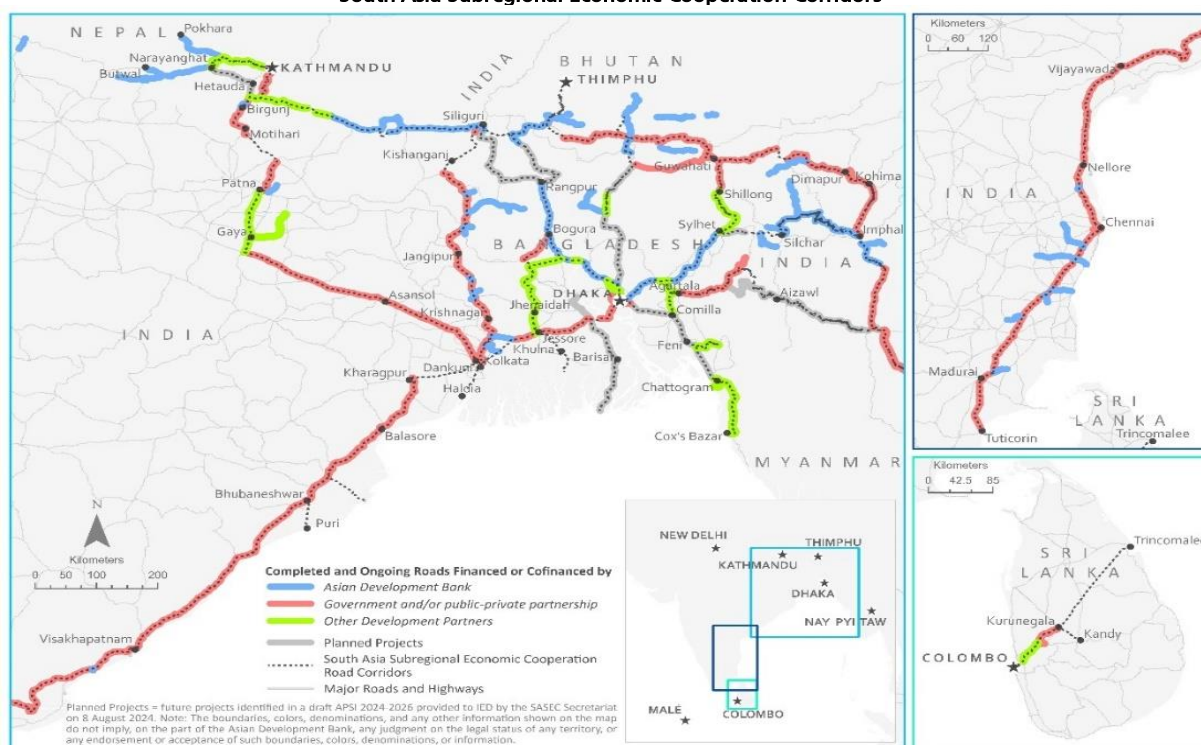
¹⁸ The total length of the SASEC network, excluding the portion in Myanmar, is estimated to be about 8,635 kilometers.

27. There were 10 ADB completed projects for the road sector, of which one was for a supplementary loan, and another for the detailed design of an expressway. The contribution of these two projects to enhancing connectivity was reflected in the projects they supplemented or supported; they were therefore excluded from this assessment. The remaining eight covered improvements in the road networks of Bhutan, India, and Nepal. Six were assessed as successful by IED's project validation, while all the road projects were rated *successful* by their project completion reports. The rationale for downgrading one of the projects was the lack of a long-term funding mechanism for maintenance. For the other, a core road segment was cancelled, but the cancelled segment was subsequently implemented by the government to a higher capacity four-lane facility (compared to the original two-lane road at appraisal) and the original connectivity target was therefore exceeded.

Box 2: Geospatial Mapping of Road Projects on the South Asia Subregional Economic Cooperation Corridor Network

As there is no overall database for the South Asia Subregional Economic Cooperation (SASEC) corridor network, the evaluation used geospatial mapping to assess how the Asian Development Bank (ADB)-funded components on the currently defined corridors complement the remainder of the SASEC network investments to improve connectivity. The assessment was based on information on completed and ongoing ADB projects approved before the end of 2023, together with projects that the SASEC Action Plans for SASEC Initiatives (APSI) have identified the funding source as governments or development partners.¹ The government-funded and development-partner-funded projects included in the APSIs were those planned at the time the APSIs were issued. A few additional government projects that are completed or ongoing were included as suggested by the SASEC Secretariat. The assessment cross-checked with publicly available information on the status of all the non-ADB-funded projects to ascertain whether these projects were either ongoing or completed.² These projects were then geospatially mapped and compared with the SASEC corridors delineated in various SASEC documents. This mapping exercise is illustrated below and shows that the overall investment in the SASEC road corridors is leading to a coherent network which, when complete, is likely to result in considerably improved road connectivity in the SASEC region.

Completed and Ongoing Projects Supporting South Asia Subregional Economic Cooperation Corridors



¹ APSI is a 3-year rolling operational plan for SASEC, which contains information on which projects will be financed by ADB, other development partners, and individual governments.

² The progress of individual projects was cross-checked mainly on the websites of the following organizations: National Highways and Infrastructure Development Corporation Ltd (India), World Bank, Japan International Cooperation Agency, Asian Infrastructure Investment Bank.

B. Improved Customs Operations with Significant Remaining Delays at Some Major Border Crossings

1. Substantial Progress in Supporting Trade Facilitation

28. The SASEC trade facilitation portfolio during 2011–2023 consisted of four policy-based loans (PBLs) and two investment projects totaling \$271.67 million.¹⁹ There were 10 TA projects totaling \$16.7 million, most of which supported implementation of policy-based operations, and three transaction TA projects and one TA project supported the regional trade facilitation activities of SASEC. Bangladesh had the highest share of PBLs in terms of volume. No trade facilitation PBLs were implemented in India because the government of India did not prioritize borrowing for trade facilitation. ADB trade facilitation support focused primarily on customs modernization, digitalization and reducing paper-based processes, and improving the capacity of customs, primarily at the national level. Assistance for specific border crossing points was mainly limited to minor components added to transport projects. In 2022, ADB approved a PBL for trade facilitation in Bangladesh that also includes investment in physical infrastructure in three border crossing points: Akhaura, Sonamasjid, and Tamabil.²⁰

29. The three countries receiving PBLs (Bangladesh, Bhutan, and Nepal) acceded to the Revised Kyoto Convention of the World Customs Organization. Significant progress was made by member countries in their commitments to the World Trade Organization's Trade Facilitation Agreement. Capacity building was implemented for risk management, post-clearance audits, and authorized economic operator programs. Establishing national single windows and reducing the number of documents for exports and imports proved difficult due to the need to coordinate across multiple agencies.²¹ However, an ongoing project in Maldives is likely to establish a national single window.

2. Reduced Border Crossing Times Alongside Substantial Remaining Delays

30. Overall, border crossing delays have decreased appreciably over the past decade. Comprehensive data on border crossing times and costs are lacking, but interviews during IED missions, particularly with stakeholders in Bangladesh, India, and Nepal, suggested that border crossing times had been reduced from the excessive delays a decade ago.²² Bangladesh officials noted that time and costs had been reduced, notably at Chittagong port but also at land crossings. Discussions with trucking associations and freight forwarders in Bangladesh and India indicated that border crossing times had decreased appreciably in the past few years. In Maldives, mission interviews indicated that improvements

¹⁹ The policy-based operations were: (i) the regional Trade Facilitation Program, approved in 2012 for \$47.7 million, which included Bangladesh, Bhutan and Nepal: ADB. [Trade and Supply Chain Finance Program](#); (ii) Customs Reform and Modernization for Trade Facilitation Program in Nepal, 2017 for \$21 million: ADB. [Nepal: South Asia Subregional Economic Cooperation Customs Reform and Modernization for Trade Facilitation Program](#); (iii) the program component of the Integrated Trade Facilitation Sector Development Program in Bangladesh for \$90 million in 2022: ADB. [Bangladesh: South Asia Subregional Economic Cooperation Integrated Trade Facilitation Sector Development Program](#); and (iv) Customs and Logistics Reforms Program (Subprogram 1) in Nepal for \$50 million in 2023: ADB. [Nepal: South Asia Subregional Economic Cooperation Customs and Logistics Reforms Program \(Subprogram 1\)](#). The two investment projects were: (i) National Single Window Project in Maldives for \$10 million in 2019: ADB. [Maldives: South Asia Subregional Economic Cooperation National Single Window Project](#); and (ii) the project component of the Integrated Trade Facilitation Sector Development Program in Bangladesh for \$53 million in 2022: ADB. [Bangladesh: South Asia Subregional Economic Cooperation Integrated Trade Facilitation Sector Development Program](#). SASEC. [SASEC Database](#).

²⁰ ADB 2022. *Proposed Policy-Based Loan, Project Loan, and Technical Assistance Grant People's Republic of Bangladesh: South Asia Subregional Economic Cooperation Integrated Trade Facilitation Sector Development Program*.

²¹ IED. 2024. [Performance Evaluation Report for the South Asia Subregional Economic Cooperation Trade Facilitation Program](#) and feedback from mission interviews. "National single window" is a trade facilitation initiative involving the establishment of a centralized online platform to which traders submit all the information and documents required for trade processing by different government agencies. India has an operating national single window developed by the government. Other countries are being further assisted to implement national single windows by the World Bank.

²² Neither the SASEC Program nor its member countries (excepting India) have undertaken systematic data collection through time, cost, distance studies on the movement of goods or time release studies at border crossing points. India began producing annual time release studies in 2021.

in customs had reduced costs and time; the customs system is automated and is undergoing further modernization with ADB support.

31. Notwithstanding these improvements, time delays at major border crossing points remain very high. A recent report prepared by the Land Port Authority of India, for example, found that the average export dwell time at a major land port was 61 hours and 3 minutes (about 2.5 days) on the India side, but significantly less at smaller crossing points. This time-release study was based on a sample of seven integrated check posts, five of which are situated at SASEC border locations.²³ On average the dwell times within these border crossings met the national criteria of 48 hours for imports and 24 hours for exports but varied considerably across the sample. For imports, dwell times varied from 3 hours 50 minutes at Srimantapur to 33 hours and 42 minutes at Petrapole. For exports, dwell times were significantly less at the smaller crossing points of Srimantapur and Sutarkandi but were much higher at Petrapole (61 hours and 3 minutes). Petrapole is the major border crossing point with Bangladesh and is responsible for more than 70% of all land-based trade between the two countries. These dwell times do not include the processing time at the mirror check posts in Bangladesh and therefore the overall time at the border is likely to be significantly higher. As a point of reference, the CAREC subregion has consistently measured cross-border cost and time delay movements since 2010. In 2019, the last year before the COVID-19 pandemic, the average crossing time for the region was 12.2 hours.²⁴

3. Infrastructure Deficiencies and Technical Barriers as the Cause of the Remaining Delays

32. Infrastructure deficiencies contributed to border delays: insufficient warehouse facilities and truck scanners and absence of government agency staff at the border locations to cover testing for food safety and standards. Capacity constraints on one side of the border can adversely impact operations on the other. A good example is the truck parking capacity in Petrapole which was expanded to 1,500 trucks. However, the capacity in Benepole remained at only 750 trucks, an imbalance that contributes to congestion at the border. Much of the delay is also attributable to sanitary and phytosanitary standards (SPS) and to technical barriers to trade. The numerous regulatory and administrative requirements at borders linked to product standards and procedures to address food safety and consumer protection make trade more costly.²⁵ Testing centers are often at locations far away from the border facilities, and countries sometimes do not have adequate certified testing centers recognized by their trading partners. As a result, trade that requires certified testing can be delayed for several days while the required permits are obtained from the importing authority. Frequent changes to regulations and poor transparency add to the delays and costs. Governments need to simplify, harmonize and modernize trade processes and procedures by reducing the extensive SPS and other non-tariff barriers (NTBs) that currently constrain the movement of goods across national boundaries. The IED mission's discussions with freight forwarders and trucking associations in Bangladesh, India, and Nepal found dissatisfaction with the plethora of NTBs as these have a considerable adverse impact on the time and cost of border crossings. One of the significant NTBs that caused the delays is the constraining regulations that prohibit vehicles from using the road networks of neighboring countries. This constraint applies to the four adjoining SASEC countries comprising Bangladesh, Bhutan, India, and Nepal. These regulations impose a major connectivity constraint on trade and passenger movements.

33. The need for a common motor vehicle act was discussed under South Asian Association for Regional Cooperation (SAARC) and a Motor Vehicle Agreement was signed in 2015 by Bangladesh, Bhutan, India, and Nepal. ADB provided support in the form of technical and background studies, secretariat services, and assistance with drafting and negotiations of legal documents. However, only Bangladesh, India, and Nepal subsequently ratified the agreement; ratification by all four countries

²³ Government of India, Land Ports Authority of India. 2022. *Time Release Study at Seven Integrated Check Posts*. The study included Integrated Check Posts at Petrapole in West Bengal, Agartala and Srimantapur in Tripura, Sutarkandi in Assam on the border with Bangladesh and Raxaul and Jogbani on the border with Nepal.

²⁴ ADB. 2021. *CAREC Corridor Performance Measurement and Monitoring, Annual Report 2020*.

²⁵ S. Kathuria, ed. 2023. *A Glass Half Full: The Promise of Regional Trade in South Asia*. World Bank.

is required for the agreement to become effective. Since 2015, there has been only limited progress in designing the protocols to the agreement. Given the importance of this issue to facilitating trade, it needs to become a priority in the SASEC Program.

C. Enhanced Electricity Grid Connectivity and Bilateral Energy Trading

34. Enhancing electricity trade and expanding and diversifying energy supplies to meet energy needs and improve power reliability are SASEC's strategic objectives in the energy sector, as expressed in its 10-year operational plan. The focus has been on improving the energy trade infrastructure and developing the regional power market in order to ease supply constraints and diversify the energy mix of SASEC countries. Efforts are also being made to develop low-carbon alternatives and to implement energy efficiency and conservation measures.

35. ADB has supported progress toward these objectives through investments in hydropower generation and electricity transmission. Its specific operational priorities include: (i) improving interconnections to access large-scale electricity and natural gas resources; (ii) harnessing unutilized regional indigenous hydropower potential; (iii) developing wind and solar power; and (iv) facilitating bilateral and regional coordination mechanisms and knowledge sharing (e.g., knowledge transfer to support the regional power trade market). Regional power interconnection arrangements and bilateral hydrocarbon trade have also been identified as flagship initiatives in the SASEC Vision document. These operational priorities were supported by a long list of relevant projects identified by the SASEC countries with ADB's support, as documented in SASEC's 3-year rolling business plans and the Action Plan for SASEC Initiatives (APSI), 2022–2024. During 2011–2023, ADB approved \$1.83 billion for 13 sovereign loan projects in Bangladesh, Bhutan, and Nepal for the SASEC energy program, inclusive of cofinancing. Most of these were hydropower generation and electricity transmission projects. ADB approved \$31.31 million for 23 TA projects for the SASEC Program during 2011–2023, including cofinancing. Ten of these were regional TA projects.

36. Through its SASEC investment and TA operations, ADB has made a valuable contribution to advancing bilateral regional connectivity in energy between India and its neighbors Bangladesh, Bhutan, and Nepal. An ADB TA project has increased the prospects for an electricity interconnection between Sri Lanka and India that has been under discussion for many years.

1. Valuable Contribution to Improving Electricity Imports to Bangladesh from India

37. The Bangladesh–India Electrical Grid Interconnection Project and the Second Electrical Grid Interconnection Project were pioneering SASEC projects that resulted in the first international transmission line in South Asia (Appendix 3).²⁶ The direct-current characteristic of the projects obviated the need to synchronize national grids. This was an appropriate technology choice at the time of the project approval, since utility managers on both the India and Bangladesh sides were concerned that synchronization of grids, as required for an alternating-current connection, would present too many risks as high voltage grid faults in one country could lead to grid disturbance or even grid collapse in a neighboring country. ADB's support for these two projects helped create 1,000-megawatt (MW) capacity of electricity transmission between Bangladesh and India, which is fully utilized except during periods of low national power demand, with annual load factors averaging 80%–90%. The transmission line was a significant contribution to electricity connectivity between the two countries.

38. Since these two pioneering SASEC investments, two further Bangladesh interconnections with India have been implemented. The first was a 160 MW import transmission line from Tripura in India, under India–Bangladesh bilateral cooperation, feeding an isolated and underserved area near the Cumilla

²⁶ ADB. 2013. [Bangladesh: Bangladesh–India Electrical Grid Interconnection Project](#); ADB. 2015. [Bangladesh: SASEC Second Bangladesh–India Electrical Grid Interconnection Project](#).

border in Bangladesh. The construction and testing of the transmission line was completed in December 2015 and operations began in 2016. The second was a new, privately financed 1,496 MW import scheme from the Adani Godda coal power plant in India. The power flows under this project began in 2023 under a bilateral agreement, bringing Bangladesh's total imports from India to 2,656 MW. The expertise and experience accumulated from these two SASEC projects were an essential prior condition for the design and implementation of the two follow-on projects, as confirmed by feedback from IED mission interviews. Given the Bangladesh Power Development Board's conservative grid management—which limits total imports to 10%–15% of installed system capacity (presently about 26,000 MW excluding imports)—the level of power imports is currently maximized but can grow with the expansion of future generation system to meet growing demand.

39. Contribution-tracing analysis confirmed that ADB support to these two SASEC projects made a valuable contribution towards advancing energy connectivity between India and Bangladesh (Appendix 3). The analysis included a systematic search and assessment of confirming and disconfirming evidence from all available sources. It then estimated the level of confidence in the claim using Bayesian updating. The findings from the contribution tracing substantiated with a high level of confidence that the claim that ADB support for the two SASEC electricity transmission projects had contributed significantly to Bangladesh's much improved electricity imports from India was valid.

2. Significant Contributions to Improving Bilateral Energy Trade Between India and Other Countries

40. ADB support for the SASEC Program has notably enhanced Bhutan's capacity to export hydropower to India by building local project planning and execution capacity through two Green Power Development Projects. Known locally as the Dagachhu and Nikachhu hydro projects, the two projects were executed with the state-owned Druk Green Power Company.²⁷ The Dagachhu scheme increased Bhutan's hydropower generation by 126 MW against a baseline 1,500 MW national capacity installed at the time of project approval in 2008, with 75% of the project's output exported to India. The Nikachhu project represented an increment of 118 MW of primarily export-oriented generation capacity augmenting existing hydropower plants and totaling 1,614 MW at the time of project approval in late 2014.

41. The impact of these two projects cannot be measured solely by infrastructure constructed and increased electricity exports. They also made important contributions to the development of local human capacity, which is needed to increase investment in hydropower generation. In Bhutan, the internal and trans-border network is adequate, but hydropower generation capacity needs to expand rapidly to meet growing domestic demand and capture the power export opportunity. This will require ramping up investment in hydropower generation; less than 3,500 MW of the country's estimated 24,000 MW hydropower technically and economically exploitable potential has been exploited so far.²⁸ The two projects substantially increased the local capacity for hydropower development, including project structuring and design, mobilization of financing and investment, and project implementation. The Bhutan Ministry of Energy and Natural Resources credited the ADB-supported projects for providing a platform for invaluable learning-by-doing exercises that built indigenous confidence and competence. At present three hydropower projects with a combined capacity of 104 MW are being implemented by Bhutanese project and technical management using Bhutanese contractors employing local labor.

²⁷ ADB. [Green Power Development Project](#) and ADB. [Second Green Power Development Project](#).

²⁸ Observer Research Foundation. 2022. *India-Bhutan Hydropower Cooperation: Assessing the Present Scenario*. For a discussion of Bhutan's hydropower potential. All of the present, and most of the future, hydropower developments in Bhutan and Nepal are of the run-of-river variety. Run-of-river hydropower developments typically have lower social and environmental impact since they do not involve impoundment dams and flooding, with attendant resettlement requirements and risks to inundated ecosystems. However, every proposed hydropower project must pass an intensive social and environmental screening. ADB. 2023. [Asian Development Bank's Approach for Large Hydropower Plants](#).

42. It is likely that ADB support for the Nepal energy sector will make a significant contribution to Nepal–India energy connectivity, despite the delays in project implementation. ADB has focused on supporting the Government of Nepal in expanding domestic high-voltage transmission infrastructure, connecting new hydropower plants to the transmission grid backbone and enabling the east–west movement of power to the Indian border. This expansion addressed power transmission as the weakest link in the nation’s electricity trade-related infrastructure and is key to unleashing hydropower exports, potentially the largest growth sector for the economy. Nepal is blessed with abundant hydropower resources and would have the potential to be self-sufficient in electricity, yet it is critically dependent on electricity trade with neighboring countries due to low domestic demand and the seasonality of water flows. As a result, and given the long gestation and construction times for storage hydropower projects, the only real option for Nepal to achieve an electricity supply and demand balance in the short-to-medium term is through interconnections and trade with neighboring countries. Cross-border interconnection is not a major barrier to electricity trade between Nepal and India, as the Government of Nepal, with support from the World Bank, financed a high voltage line and associated transmission infrastructure to deliver power up to the border with India, while Indian parastatal entities and the Indian private sector financed and constructed the complementary infrastructure on the India side of the border. ADB projects have experienced significant implementation delays but are likely to achieve their objectives. The delays are comparable to, and may be slightly less than, those experienced by projects financed by other development partners.

43. Recent ADB support has increased the prospects for an interconnection between Sri Lanka and India, which has been under discussion for many decades. Under the SASEC program, ADB provided a well-timed and well-targeted TA project supporting the feasibility study of the proposed India–Sri Lanka electricity interconnection in 2023. This TA project, together with SASEC meetings and other regional TA projects, has helped increase the likelihood of significant progress on energy connectivity between the two countries. The feasibility study has helped alleviate concerns about the proposed project from the power utility in Sri Lanka.²⁹ The proposed interconnection project has been under discussion for over 70 years and has not advanced beyond feasibility reviews and inconclusive discussions. It is plausible to assume that the feasibility study helped trigger high-level exchanges and expressions of support between the two governments. It capitalized on the relatively recent and growing recognition of Sri Lanka’s substantial offshore wind energy potential, and the significant benefits for both countries if this potential can be unlocked and exploited via an interconnection with India. The most feasible source of capital to develop the offshore wind power would be private investment. ADB is in the process of approving a PBL to help Sri Lanka improve its energy sector investment climate.

D. Limited ADB Support for Multimodal and Containerized Transport and Multilateral Energy Market

1. Inadequate Support for Multimodal and Containerized Transport

44. ADB has provided limited support to the SASEC Program for improving multimodal transport, although the SASEC operational plan puts an emphasis on this. Modern transport systems focus on multimodal aspects to ensure that transport services can be delivered at the lowest cost. The cost of transporting goods varies according to the mode, but not all modes can deliver the same service. For example, in most cases only road transport can deliver last-mile services; the use of rail transport is usually only cost-effective over long distances for bulk freight as transshipment costs at origins and destinations are normally prohibitive. A transport chain will involve several different modes and each needs to be competitive to ensure that the overall transport chain is cost-effective. An optimum system

²⁹ The \$550,000 feasibility study on the proposed India–Sri Lanka electricity interconnection was funded under the \$3.0 million technical assistance (TA) project which was approved in September 2018 and closed in December 2023. The India–Sri Lanka interconnection feasibility study was executed during the last year of the TA. ADB. 2018. [Technical Assistance for South Asia Subregional Economic Cooperation Regional Energy Cooperation](#) (TA 9584-REG).

would require seamless transshipment at different points on the network. The SASEC region has several different modes of transport available but has yet to harness the benefits of multimodal transport as individual modes are planned and operated separately with minimal integration of services.

45. During 2011–2023, ADB SASEC transport operations were largely dominated by road projects, although initial efforts have been made to identify potential multimodal transport initiatives. ADB supported investment projects in the transport sector totaling about \$11 billion for which it provided financing of \$6.9 billion (63%) with cofinancing from development partners of \$1.4 billion (12%) and government financing of \$2.8 billion equivalent (25%). Support for the road sector amounted to \$7.3 billion, of which ADB provided \$4.5 billion. Support for the rail sector amounted to \$3.0 billion, of which ADB provided \$1.8 billion. Support for airports amounted to \$323 million, of which ADB contributed \$256 million, and multimodal projects totaled \$307 million, of which ADB contributed \$292 million.³⁰ It is notable that during 2011–2023 there was no ADB support for the maritime and inland waterways sectors.³¹ The transport sector support was largely single mode focused and there is limited evidence of multimodal analysis linking modes and broadening options for alternative origin to destination transport chains. ADB analysis has also been highly infrastructure-focused with only a limited assessment of requirements for policy adjustments.

46. Within the subregion, the use of containers is low when compared to other regions and with global best practices. The use of containers can simplify and accelerate transport movements and enable goods to be shifted quickly from one mode to another, ensuring the safety of the merchandise as well as helping to accelerate customs processing by utilizing processes that seal the goods and limit the need to conduct expensive and time-consuming inspections. India is a signatory to the Customs Convention on the International Transport of Goods under Cover of the International Road Transport (Transports Internationaux Routiers) Carnets, the 1975 Transports Internationaux Routiers Convention adopted under the auspices of the United Nations Economic Commission for Europe and designed to facilitate the movement of goods between countries using sealed and tagged containers and guarantees the payment of customs duties and taxes at the country of destination. However, Bangladesh, Bhutan, and Nepal have yet to sign the convention. These countries are understood to be opposed to the use of containers for a number of interrelated reasons, including damage to road pavements caused by large articulated trucks, opposition from truck owners and labor, and a fear that greater use of containers would result in loss of market share to large operators.

47. Promoting containerized transport is needed as a high proportion of cross border freight is fruit and vegetables. The use of refrigerated containers is common for the transport of goods that require cold chain conditions. Even where there may be no absolute need for such a facility, there are benefits from using cold chain methods to prolong the life of the goods and/or preserve their condition for improved market prices. The use of containers has many applications, and it is likely that its adoption in the subregion would benefit a wide range of export and import markets.

2. Slow Progress in Establishing a Regional Multilateral Electricity Trading Market

48. Despite improvements in electricity generation and grid connectivity, the subregion has not established a regional multilateral electricity market. A multi-party, multi-directional trading based on real-time, and futures markets would allow Bangladesh to import hydropower from Nepal and Bhutan, establishing a multilateral energy connectivity among Bangladesh, Bhutan, India, and Nepal. It can also reduce Bangladesh's dependence on fossil fuels and greenhouse gas emissions, contributing to the

³⁰ The two multimodal projects included a project readiness loan in Bangladesh (\$42 million) to prepare future projects: ADB. [Bangladesh: Transport Connectivity Improvement Preparatory Facility](#). Support for a program to strengthen multimodal and integrated logistics ecosystems in India (\$250 million): ADB. [India: Strengthening Multimodal and Integrated Logistics Ecosystem Program \(Subprogram 1\)](#).

³¹ The maritime sector received limited support through the [Chittagong Port Trade Facilitation Project](#) approved in 2004, well before the evaluation period. ADB. [Bangladesh: Chittagong Port Trade Facilitation Project](#).

country's efforts in combating climate change. Overall, multilateral power trading would foster energy connectivity across several countries; improve resource utilization, competition, and market dynamics; and enhance the energy system's efficiency, reliability, and sustainability. Power trading structures in less technically advanced and sophisticated regional groupings, like the South Africa Power Pool, the West Africa Power Pool, and the Central America Interconnected Electrical System, all employ a multilateral trading market system.³² In the SASEC subregion, a multilateral trading market could help address several key impediments to power connectivity, including national sovereignty concerns, and security challenges posed by import dependency.³³

49. Bangladesh has to date not succeeded in entering arrangement to import needed hydropower from Nepal and Bhutan. A proposed demonstration project involving importing 40–50 MW of hydropower from Nepal has not been concluded after over 3 years of negotiations. All the power transmission routes for energy trade among Bangladesh, Nepal and Bhutan must run through India. ADB's efforts to advance multilateral power trade through SASEC have been too gradual with modest capacity building and knowledge TA support. ADB has emphasized the preparation of regional master transmission plans rather than power trading institutions and markets. However, political obstacles for the import of 40–50 MW of hydropower from Nepal through India to Bangladesh now appear to be easing.

³² M. Oseni and M Pollitt. 2016. *The Promotion of Regional Integration of Electricity Markets: Lessons for Developing Countries' Energy Policy*. Volume 88.

³³ UNESCAP. 2022. [Transitioning towards Multilateral Electricity Trade in Asia and the Pacific: A Discussion Paper](#).

CHAPTER 3

Limited Impact on Competitiveness and Provision of Regional Public Goods

50. ADB support for the SASEC Program aimed to increase regional competitiveness as measured by an increase in global and regional trade and investment opportunities in the subregion. ADB has provided investment and TA support to promote economic corridor development, which would foster the development of regional value chains. ADB has also supported an upgrading of the value chains in tourism and agriculture, two important trade sectors. These measures complemented ADB's support for regional connectivity, which contributes to competitiveness through enhancing factors of productivity and increasing market access. Better and more efficient production factors would boost productivity and competitiveness. Increased market access would allow businesses to expand into new markets by alleviating constraints on the movements of goods and services up to and across borders.

51. This chapter assesses the extent to which the ADB support has achieved this regional competitiveness objective. The assessment recognizes the contributions to competitiveness made from the efforts to improve connectivity that have already been assessed in the previous chapter and focuses on the contribution of additional ADB activities and inputs for improving trade and cross-border investment. It finds that ADB support for economic corridor development is still a work-in-progress, while ADB support for tourism and agricultural value chains has been limited. ADB has provided little support to address NTBs beyond customs modernization and promote private sector development, both of which are major constraints on trade and investment in the subregion.³⁴ An analysis of trade and investment data conducted by the evaluation shows that the overall trade cost for the subregion as whole was reduced only modestly during the evaluation period. There has been no sign of value chain advancement or diversification in trade flows. The SASEC subregion did not see significant improvements in trade and intra-subregional inward foreign direct investment notably declined during the period. Progress was more challenging during 2020–2022 due to the impacts from the COVID-19 pandemic. The provision of regional public goods (RPGs) has not been a focus of the ADB work to date.

A. Support for Economic Corridors and Value Chain Development is Emerging

1. Economic Corridor Development Still a Work-in-Progress

52. Both the SASEC Vision and the Operational Plan, 2016–2025 envisioned developing economic corridors in SASEC member countries and promoting synergies among them to enhance regional impact such as regional value chain development. This was to be achieved by leveraging the cross-border links developed under the connectivity pillar of the SASEC Program. To promote regional value chain development, ADB has provided some support for economic corridor development. The ADB conceptual framework has moved away from the older, transport-centric notion of economic corridors to a multi-sector, spatial, or area-based framework, focusing not just on integrating but also on developing

³⁴ ADB support for customs modernization could indirectly reduce non-tariff barriers by simplifying burdensome customs procedures, increasing transparency and enhancing cooperation and harmonization amongst customs authorities. Many other non-tariff barriers require working with other agencies, such as for SPS (animal health, plant health, food safety), technical barriers to trade (bureaus for standards, laboratories), and other government ministries (trade, commerce).

economic nodes in an identified geographical area.³⁵ Economic nodes are those where economic activities are concentrated, such as large and second-tier urban centers and market towns. If these nodes have improved infrastructure and business environment, they will attract clusters of producers and benefit from scale and agglomeration. The corridor nodes would thus benefit from investments in infrastructure along with complementary measures to strengthen institutions, regulations, and the private business and investment environment. Economic corridors can facilitate the development of regional, national, and global value chains. If an economic corridor region includes sovereign boundaries, trade facilitation, cross-boundary logistics, policy coordination, and other aspects of RCI should be a high priority.

53. Economic corridor development under the SASEC Program is still a work-in-progress and has a limited focus on regional dimensions. Only one SASEC economic corridor is currently being implemented, the Vizag–Chennai Industrial Corridor (VCIC), which is part of India’s east coast economic corridor from the southern tip of India near Sri Lanka to Bangladesh. This corridor is still at an early phase of development and has had little impact thus far on the creation or integration of any regional value chains. ADB provided two investment loans and a PBL to support to the VCIC through the SASEC Program.³⁶ A PBL supported policy reforms that were oriented toward domestic aspects of corridor development rather than regional issues, covering, for example, operationalization of a state corridor management authority, setting up special purpose vehicles to implement industrial estates within the corridor nodes, establishing investor promotion mechanisms, establishing an e-portal for industrial licensing, and making available on the internet a database containing information on land in industrial nodes. ADB approved an additional PBL in 2021, which was followed in 2023 by a subprogram 2. These two PBLs did not target a specific corridor but focused on supporting India’s national industrial corridor development program. As with the policy component of the VCIC, the two PBLs were oriented toward domestic aspects of corridor development in three reform areas: strengthening the institutional environment for industrial corridor development, improving coordination in infrastructure planning across corridor nodes, and increasing transparency and streamlining business processes for investors.³⁷

54. Regional synergies could arise if future economic corridors in Bhutan, Bangladesh, and Nepal were to be developed and linked with the envisaged Indian corridors in the north-east states, West Bengal, and Odisha. However, it is still too early to predict when and to what extent such corridors will be established and linked. Four SASEC economic corridors in Bangladesh, Sri Lanka, and northeast India are still on the design board, with preparatory technical and analytic studies completed. Nepal and Bhutan are yet to conceptualize and start knowledge work on economic corridor development.

2. Modest Support for Targeted Value Chains in Tourism and Agriculture

55. ADB approved two tourism projects during the evaluation period. These projects had a tourism component but were focused primarily on domestic urban development and are still at an early stage of implementation. To promote regional circuit-based tourism, an ADB financed transport sector project,

³⁵ ADB. 2023. *Economic Corridor Development: From Conceptual Framework to Practical Implementation—Guidance Note*. The new framework recognizes that institutional and policy reforms and infrastructure improvements require long time periods before private investments flow in.

³⁶ Comprising an investment component and a PBL component of the same multitranche financing facility for the VCIC, approved in 2016: ADB. 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to India for the Visakhapatnam–Chennai Industrial Corridor Development Program - Project 1* (project numbers 48434-003 and 48434-005 with the same report and recommendation of the President) and a second tranche of the VCIC multitranche financing facility that was approved in 2023: ADB. 2023. [India: Visakhapatnam–Chennai Industrial Corridor Development Program \(Tranche 2\)](#).

³⁷ In 2017, ADB approved the Nepal: Regional Urban Development Project: ADB. [Nepal: Regional Urban Development Project](#) and in 2021 it approved the India: Tamil Nadu Industrial Connectivity Project: ADB. [India: Tamil Nadu Industrial Connectivity Project](#). The first project focused exclusively on urban infrastructure development and related capacity building to reduce flooding and improve solid waste management in eight municipalities near Nepal’s southern border with India. The second project focused on Tamil Nadu’s transport system, which may reflect the preference of the state government. Tamil Nadu has a relatively high concentration of manufacturing activities. Both projects have a limited focus on economic corridors and on cross-border cooperation and regulatory reforms for improving trade and private investment.

the South Asia Tourism Infrastructure Development Project, supported improvements to infrastructure in key nature- and culture-based tourist destinations and an expansion of air and road links connecting these destinations.³⁸ This project mainly rehabilitated some tourist sites and improved domestic link roads in Bangladesh, India, and Nepal. It did not achieve its objectives of improving regional tourism connectivity and increasing international tourist arrivals.

56. ADB has also undertaken knowledge work to promote a more conducive ecosystem for tourism in SASEC countries. In 2013, ADB completed a regional TA project which supported the preparation of an updated Subregional Tourism Strategy and Road Map, 2011–2015; in-country forums and learning events; the design of a South Asia subregional tourism website; and training for the executing agencies of the South Asia Tourism Infrastructure Development Project. In 2021, ADB completed a scoping study on strengthening the institutional mechanism for tourism in the SASEC subregion.³⁹ This led to the addition of tourism as a new priority area of the SASEC Program at the Senior Officials' Meeting in 2023. However, it remains to be seen whether this will lead to investment operations. A proposal to establish a tourism sub-working group was not adopted at the 2023 meeting.

57. ADB support for agricultural value chain development has also been limited with regional issues being taken up within single-country projects. An investment project and four TA projects in the trade facilitation sector focused on agricultural value chain development to connect local produce to markets, including export markets.⁴⁰ An agricultural value chain TA project in Bhutan also included components on improving product competitiveness to enable producers to obtain market access and better prices. However, export outcomes were not tracked in project documents as the expected trade benefits were predominantly at the borders, the beneficiaries were small farmers, and the trade was informal. These projects had a narrow focus on particular geographical areas and did not include support for cross-country harmonization of standards, regulations, and practices.⁴¹ Experience from countries in other regions show that enhancing quality standards and access to markets, when combined with training opportunities, has worked well in developing agricultural value chains.⁴² Trade in agriculture and livestock in the SASEC subregion accounted for about 40% of total intra-subregional trade during 2011–2023, about half of which was informal trade.⁴³

B. Inadequate Attention to Non-Tariff Barriers and Private Sector Development

1. Limited Support to Address Non-Tariff Barriers Beyond Custom Modernization

58. NTBs are recognized as an important impediment to intra-regional trade in South Asia (footnote 25). All countries can impose non-tariff measures (NTMs), such as sanitary and phytosanitary standards (SPS) and product standards to legitimately protect national interests like animal and plant health, environment, and consumer safety. NTMs can become technical barriers to trade (TBT) or NTBs if they are more burdensome than necessary to achieve a legitimate goal. This can happen, for example, if the requirements are not transparent, changed frequently or without notice, or are attached to

³⁸ This project is classified primarily as a transport project but has a heavy emphasis on tourism development particularly on the renovation and protection of cultural heritage sites.

³⁹ SASEC. 2022. *Action Plan for SASEC Initiatives 2022–2024*.

⁴⁰ ADB. [Nepal: Nuts and Fruits in Hilly Areas Project](#). ADB. [India: Support for Agricultural Value Chain Development in Uttar Pradesh](#). ADB. [Nepal: Support for Value Chain Development under the Nepal Agriculture Development Strategy](#); ADB. [Bhutan: Enhancing Competitiveness of High-Value Agriculture and Artisan Products Value Chains](#); ADB. [Bangladesh: Market and Value Chain Infrastructure Development Project](#).

⁴¹ Such as alignment of the Safeguard Policy Statement and other regulations and standards that govern the safety, quality, and sustainability of agricultural goods.

⁴² U. Balakrishnan and D. Zaas. 2023. *Challenges and Opportunities in Agricultural Value Chains*. American Institutes for Research.

⁴³ IED estimate based on UN [COMTRADE Database](#) (accessed 24 April 2024).

procedures that take excessively long time.⁴⁴ Diverse capacities across countries in SASEC contribute to standards being used by one country appearing as too high relative to the capacity of another country. The issue of SPS and TBT in intraregional trade in the SASEC subregion was raised during most country consultations for this evaluation. Some respondents felt that smaller countries were at a disadvantage in exporting to larger countries because of unnecessarily restrictive SPS and TBT requirements. The SASEC Trade Facilitation Strategic Framework (TFSF) approach was to identify SPS-sensitive products and try to improve their standards and the requisite laboratory equipment and instruments. In parallel, the TFSF proposed liaising with the South Asia Regional Standards Organization of SAARC, while noting that SPS issues would be best undertaken on bilateral basis. The TFSF operational updates recognized the important role of NTBs in limiting intraregional trade. An ADB SASEC TA project undertook a comprehensive diagnostic study of SPS and TBT in South Asia's intra-regional trade in 2017, but there was no other operational follow up.

59. ADB and the SASEC Program have focused on customs modernization, and NTMs relating to SPS and TBT and other NTBs have received limited attention. Recently, ADB has begun efforts through the SASEC Program to address SPS and TBT issues. The last meeting of the trade facilitation working group of SASEC in late 2023 took specific note of the need to address SPS and TBT issues based on the diagnostic study. A proposal to set up a forum for food regulators in the SASEC subregion was also adopted. These are welcome steps, but more attention needs to be paid to the issue of SPS and TBT (and other NTMs constraining trade) if the SASEC Program wants to achieve its vision of an integrated subregion. There is potential for the SASEC Program to work with member countries to harmonize their SPS and TBT measures with international standards, such as those set by the World Trade Organization. ADB could support regional capacity building of regulatory authorities and exporters, which would help improve compliance with the SPS and TBT measures of importing countries, thereby reducing trade costs. Investing in testing capacities and laboratories in smaller SASEC countries would help them to address their SPS and TBT constraints. Facilitating public-private dialogue could lead to regulations that are both effective in ensuring product safety and quality and trade-friendly.

2. Emergent Support for Private Sector Development

60. Weak investment climate is a significant constraint on investment and trade in nearly all SASEC countries. It is limiting the ability of the economy and the private sector to take advantage of trade liberalization and improved infrastructure, constraining trade, regional value chain development, and job creation (footnote 25). This was corroborated by findings from the interviews with public and private entities during the evaluation mission.

61. In particular, regulatory reform is needed to promote private sector participation in energy investment and energy trade. In Bhutan, a supportive and effective private sector enabling environment is required to attract greater private investment in developing clean energy and transmission access and promote private participation in power trading. Only modest avenues to private sector engagement are available in the energy sector, consistent with the overall state dominance in the strategic sectors of the economy. In Nepal, investment by the private sector in transmission infrastructure needs to be accelerated through appropriate reforms. Although this infrastructure is critical for Nepal's power trade, shortfalls in public finance are delaying its construction. A common issue in many SASEC countries is that the government is the only buyer of electricity which disincentivizes and crowds out private sector participation in the power trade market and lowers market efficiency.

62. ADB has provided limited support for private sector development or improvements to the business environment. In SASEC economic corridor projects, ADB supported measures to increase transparency and the digitalization and streamlining of business processes for investors but stopped

⁴⁴ South Asian trade is replete with diverse non-tariff measures that act as NTBs by increasing the costs and delays of trade. For example, required lab tests from labs located at distance from the border, repetitive weighing of the same cargo, or requirements that imports of particular goods be restricted to only specified ports. S. Kathuria. 2018. *op.cit.*

short of supporting more significant reforms necessary for improving market competition and reducing barriers to trade and investment. In the Bhutan energy sector, ADB’s advisory and knowledge activities and investment projects that showcased private participation and increased sector transparency were steps in the right direction, but they must be complemented by support for sector reforms. At the regional level, there is a lack of support in the form of capacity building and knowledge sharing to address common challenges in private sector development faced by all SASEC member countries. In 2022, the SASEC Business Forum was created for receiving feedback on SASEC operations from the private sector. However, private sector development environment has not been included as a priority in the SASEC Vision, SASEC Operational Plan 2016–2025, or any of their updates.

C. Overall Trade Cost Modestly Reduced

63. Trade costs refer to the expenses incurred in the process of importing and exporting goods and services between countries (the analysis here excludes services). They include transportation costs, tariffs, administrative procedures such as customs processes, and other non-tariff barriers to trade.⁴⁵

64. As noted in the previous chapter, ADB support for the SASEC Program helped cut vehicle operating times and costs in individual countries while also reducing customs delays. In the long term, this is likely to lower transport and border crossing costs and lead to more efficient trade services. The World Bank’s Logistics Performance Index shows that most countries in the subregion improved their trade logistics over the past decade, although they remained in the lower half of global rankings. The index measures the efficiency of international supply chains, the efficiency of customs and border management clearance, and the quality of trade and transport infrastructure among other aspects of trade logistics. While data for SASEC countries are not consistently available for all time periods, since 2010 all the individual SASEC countries have moved up the ranking. In the energy sector, ADB support for the SASEC Program improved power system reliability and reduced energy costs in Bangladesh and Nepal. Lower energy costs will decrease transportation expenses for both imports and exports.

65. However, the trade cost for the SASEC subregion as a whole may not have decreased significantly, because of the limited results achieved so far in improving economic corridors, developing regional value chains, and alleviating non-tariff barriers to trade. Construction of the SASEC transport corridor network is still ongoing and the network has not yet reduced costs significantly.

66. To estimate changes in the overall trade cost, the evaluation conducted an analysis of how the changes in trade costs contributed to trade volume variations, using a gravity-model-based decomposition approach (Appendix 4). The analysis focused on the bilateral trade of the two largest SASEC countries, India and Bangladesh, with each of the other SASEC countries. These two countries account for almost 97% of SASEC’s GDP (excluding Myanmar). Changes in bilateral trade volumes between any pair of countries in the gravity model can be caused by GDP growth, changes in bilateral trade costs, and ease of trading with the rest of the world.

67. The results showed that trade costs in the SASEC subregion declined modestly in the period 2012–2022, which overlaps with most of the evaluation period. A decline in trade costs contributed to higher trade volumes for all SASEC countries’ trade with India in the last decade. Similar results were obtained for bilateral trade between Bangladesh and other SASEC countries. The contribution of lower bilateral trade costs to growth in trade volumes was less than 4% for trade between the two largest economies, India and Bangladesh, although it ranged from 20% to 68% for most of the smaller SASEC countries, suggesting a modest decline in overall trade cost for the subregion taken as a whole.

⁴⁵ World Bank. 2013. [Trade Costs and Development: A New Data Set](#).

D. Insignificant Progress in Moving Up and Diversifying Value Chains for Improving Trade

68. An analysis of disaggregated data on trade flows showed almost no change in the shares of trade in different sectors and subsectors, suggesting an lack of diversification in trade flows, including value chain advancement. Table 4 shows the relative shares of ore and metal, manufactures, fuel, and agriculture and food products in total intra-SASEC trade during 2012–2022. Nearly half of the intra-SASEC trade was in the three non-manufacturing categories. Manufacturing share during the period declined from a peak of 59.7% in 2016 to 47.0% in 2022, suggesting an absence of dynamism driven by growth in value chains. This is also reflected in the coefficient of variation, which is highest for fuel and primary food categories that traditionally have volatile prices. Manufacturing shares are relatively stable around their mean with a steadily declining trend, again suggesting the absence of any significant trends either in product diversification or value chain development.

Table 4: Sector Shares in Intra-SASEC Trade 2012–2022

Year	Ore and Metals	Manufactures	Fuel	Agriculture and Food
2012	12.7	55.7	12.3	19.4
2013	12.4	58.1	10.6	19.0
2014	11.2	57.0	11.1	20.7
2015	10.7	58.1	9.5	21.7
2016	12.8	59.7	8.1	19.4
2017	14.5	54.8	12.3	18.4
2018	14.2	56.5	14.6	14.7
2019	13.9	56.2	14.3	15.6
2020	13.2	53.2	11.6	22.1
2021	11.9	49.9	12.8	25.3
2022	10.7	47.0	19.8	22.5
Coefficient of variation	10.7%	6.8%	24.9%	15.4%

IED = Independent Evaluation Department, SASEC = South Asia Subregional Economic Cooperation.

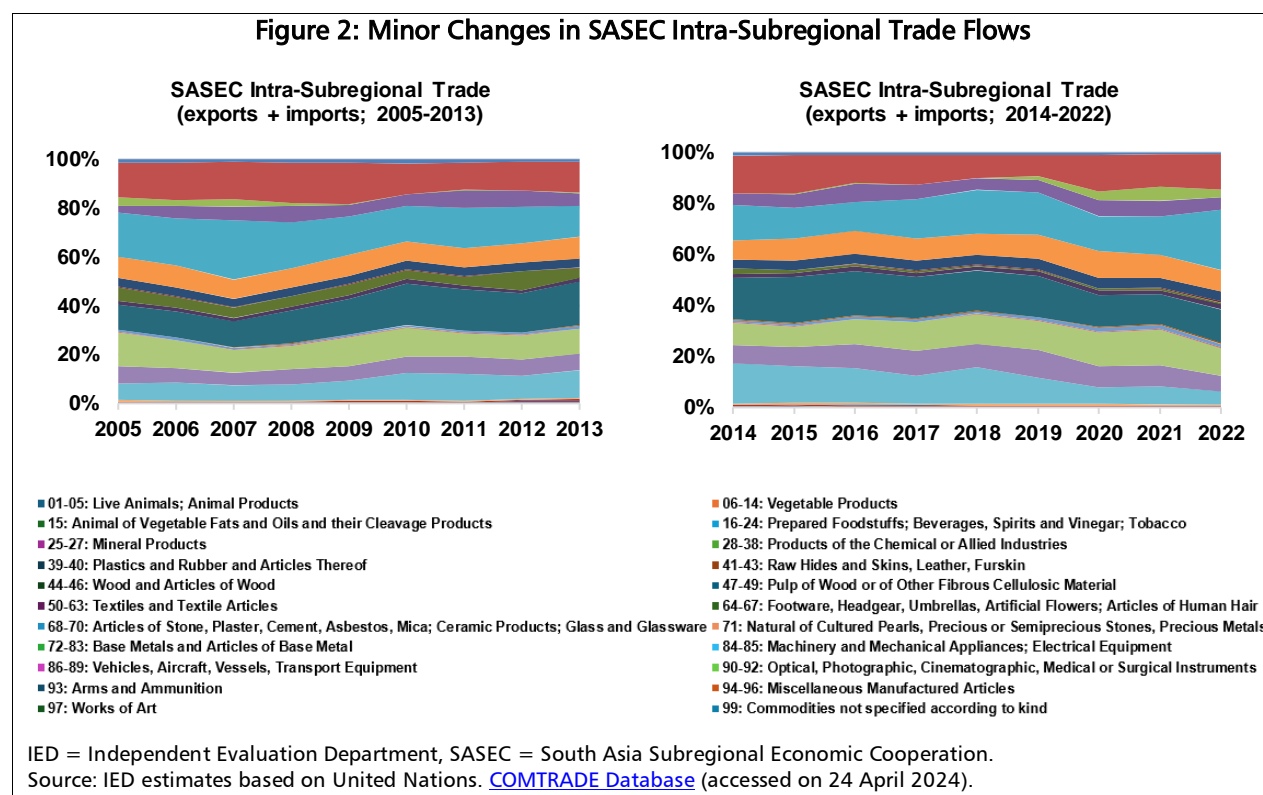
Note: Coefficient of Variation is a measure of dispersion or variability relative to the average or mean and is defined as the ratio of standard deviation of the series to its mean.

Source: IED estimates based on United Nations. [COMTRADE Database](#) (accessed on 24 April 2024).

69. Trade flows at a two-digit level of disaggregation show similar absence of significant sectoral changes, including value chain advancement over the periods from 2005–2013 compared with 2014–2022. The share of each two-digit sub-group in total SASEC trade shows only minor variations in the two parts of Figure 2 for the two periods, with no significant shifts in the role of any of the two-digit sectors in total trade. Out of 18 sub-groups at the two-digit level, only three showed a positive or negative change exceeding 1% between the two periods before and after 2013: the share of trade in wood products declined by 3 percentage points, while two sub-groups—machinery, mechanical appliances, electrical equipment, and aircrafts, vehicles, transport equipment—increased their shares by about 2 percentage points each. It is notable that the total share of agriculture and food, mineral products, and textiles and textile articles saw almost no change and stayed at about 60% in the two periods.⁴⁶ These findings are not sensitive to the impact of the COVID-19 pandemic: analysis of trade shares at two-digit commodity classification was done for both periods, i.e. comparing 2005–2011 averages to those for 2012–2019 (pre-pandemic) as well as for 2012–2022. The changes (compared to 2005–2011 average shares) were minor and same, whether with reference to 2019 or 2022 as terminal date. Shares of same three commodity groups went down by 1% or more in both cases. Similarly, the same two

⁴⁶ IED estimates based on UN. [COMTRADE Database](#) (accessed 24 April 2024).

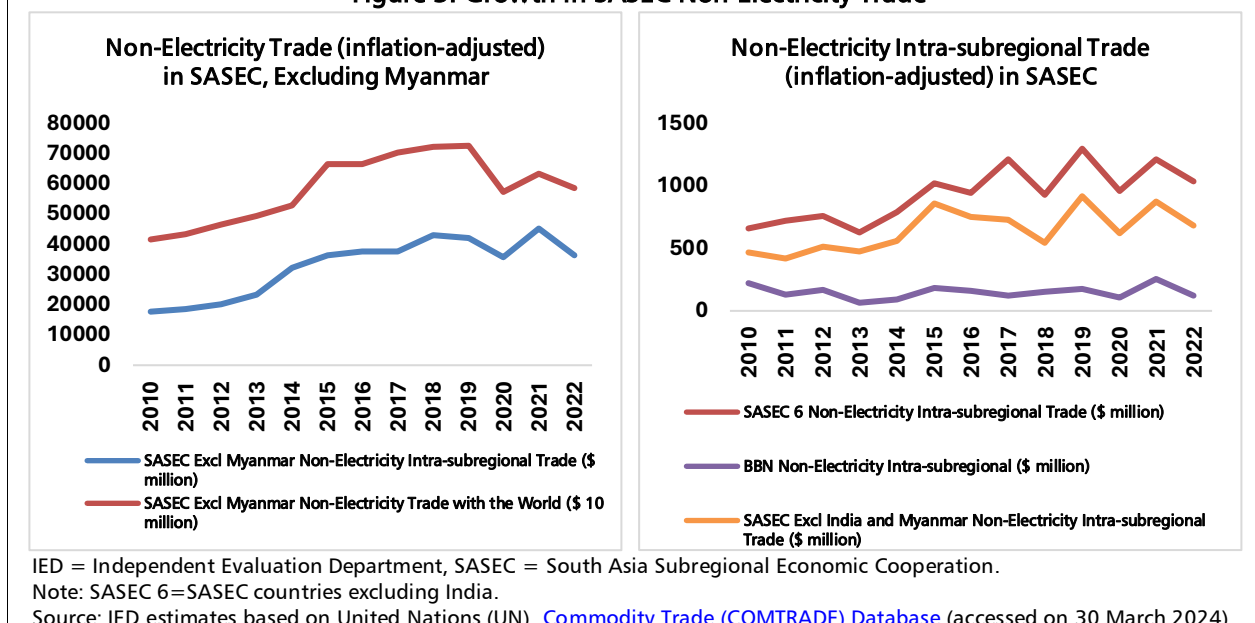
groups increased by more than 1%. One category (wood products) increased its share by more than 1% up to 2019 but by less than 1% by 2022.



70. Both intra-subregional trade and the trade of SASEC countries with the rest of the world have demonstrated weak growth since 2015 (Figure 3), with a further slowdown in growth during 2020–2022 reflecting the impact of the COVID-19 pandemic. The quality of the trade flows has not changed significantly, with all countries running chronic trade deficits with the largest economy, India. The graph on the right of Figure 3 shows intra-subregional SASEC trade without India and the land-based transit trade among Bangladesh, Bhutan, and Nepal. The sharp drop in the values on y axis underlines the size dominance of one economy in SASEC, but the low growth in trade is also evident in the remaining six SASEC countries. There has been virtually no growth in the intra-subregional trade of SASEC countries (excluding India) since 2015. Trade among Bhutan, Bangladesh, and Nepal in the same graph reflects land-based transit trade, which was at extremely low levels and did not grow during the decade. Intra-SASEC inward foreign direct investment declined substantially over the evaluation period, though overall investment into SASEC region increased significantly.⁴⁷

⁴⁷ IED calculation based on [ADB Asia-Pacific Regional Cooperation and Integration Index Database](#) (accessed March 2024).

Figure 3: Growth in SASEC Non-Electricity Trade



71. The high costs of moving goods in transit have inhibited trade in smaller countries. ADB support for SASEC has not focused on transit trade or on reducing the costs of moving goods in transit.⁴⁸ The amount of transit trade for landlocked Bhutan and Nepal has been low and did not increase over the evaluation period. Freight forwarders in Nepal noted that, despite the official success attributed to the use of Vizag port, the eastern road corridor, and the use of the electronic cargo tracking system for imports, costs of transit trade have not decreased.⁴⁹ The movement of imports and exports to and from Nepal through Kolkata port takes at least 9 days, excluding the time spent within Nepal's borders.⁵⁰ The costs of transit movement through India to Nepal and Bhutan, the limited use of Chittagong port in Bangladesh by Nepal and Bhutan, and the only slight improvements to transport networks and border infrastructure in Bangladesh, Bhutan, and Nepal have constrained any positive impact on exports and imports, the emergence of value chains, or any diversification of the countries' economies.

E. An Emerging Focus on Regional Public Goods

72. Regional public goods (RPGs) are goods, services, or policies that benefit multiple countries in a particular region. They satisfy the twin properties of non-rivalry, i.e., the consumption of an RPG by one country does not diminish the availability and utility to others; and non-excludability, i.e., once public goods have been provided, no countries can be excluded from consuming them.⁵¹ Examples of important RPGs include communicable disease control, climate change mitigation, and transboundary water management. RPGs address challenges that transcend national boundaries and are optimally provided through regional cooperation. Appendix 5 provides a review of the conceptual framework of RPGs.

⁴⁸ An ongoing policy-based loan in Bangladesh (footnote 20) includes one policy condition requiring issuance of a statutory regulatory order on international transit.

⁴⁹ A similar position was also articulated in the following newspaper article: Rajan Sharma. 2021. *New Business Age*. 14 January. Electronic cargo tracking can also improve safety and security of the cargo. Currently the tracking system stops at the Nepal border. SASEC is studying a subregion wide tracking system for future.

⁵⁰ Government of India, Central Board of Indirect Taxes and Customs. 2012. *National Time Release Study*.

⁵¹ K. Moinuddin. 2012. *The Provision of Regional Public Goods in South Asia. Regional Integration and Economic Development in South Asia*. Edited by S.H. Rahman et al. 2012. EE Pubs.

1. Regional Public Goods Not a SASEC Priority, but Aspects Embedded in Some ADB Projects

73. Overall, the SASEC Program has not prioritized RPGs in any of its strategic documents, although ADB strategies have accorded RPGs a prominent role in RCI operations. A 2010 scoping study for RPGs for SASEC and other regional institutions and programs in South Asia identified several areas that deserved to be given high priority, including climate change, clean energy, control of communicable diseases, and coordinated disaster management (footnote 56), though However the recommendation has not been reflected in SASEC strategic documents. An attempt was made to establish “Climate, Disaster and Pandemic Resilience” as a new operational priority in the SASEC Vision, given the need for regional disease surveillance following the COVID-19 pandemic and the benefits of strong regional cooperation to deal with disasters and enhance the subregion’s resilience to climate change.⁵² However, during the 2022 SASEC Nodal Officials’ Meeting, it was decided that SASEC would strengthen work on existing operational priorities rather than adding new priorities. During the evaluation mission, some countries expressed support for strengthening the RPG agenda in a few areas, such as clean energy and pandemic preparedness, while emphasizing that SASEC should continue to focus on its core competencies in connectivity, energy, and trade facilitation.

74. RPGs were embedded within some SASEC energy operations, mainly in Bhutan and Nepal, and this contributed to climate change mitigation. Exporting hydropower with almost zero carbon emissions from Bhutan and Nepal to displace coal-fired electricity in India is one of the largest greenhouse gases (GHGs)-reduction opportunities in the subregion. ADB has made a valuable contribution to advancing this process. The 126-megawatt (MW) Dagachhu plant financed under the Green Power Development Project in Bhutan was the world’s first cross-border project to receive carbon credits under the Kyoto Protocol’s Clean Development Mechanism. Since the plant was commissioned in 2014, it has resulted in carbon dioxide emissions savings of 500,000 tons annually. Of Bhutan’s 2.5 million Clean Development Mechanism credits registered with the UN Framework Convention on Climate Change, some 700,000 tons have been sold. It is possible the balance may be sold through international voluntary carbon crediting markets. A similar level of GHG emissions reductions can be expected from the 118 MW Nikachhu hydropower plant financed by the Second Green Power Development Project. ADB support for the export of hydropower from Nepal to India has similarly been very valuable. From a longer-term perspective, large-scale imports of clean hydropower to Bangladesh from Nepal and Bhutan (and, possibly, to Myanmar) along with the exploitation of Sri Lanka’s substantial offshore wind energy potential would reduce greenhouse emissions in the SASEC subregion significantly.

75. ADB provided two regional TA projects for solar photovoltaics and two regional TA projects that promoted energy efficiency, but their impact has been modest. Solar energy and energy efficiency are critical for the long run decarbonization of the energy sector, but achieving their potential is made difficult by a lack of supporting national policies and regulations, the absence of focal point institutions, and the high cost of finance for both energy efficiency and photovoltaic investments. ADB’s TA support has been insufficient to catalyze a significant market for energy efficiency. ADB support focused on knowledge and capacity building and small-scale demonstration projects, both of which are appropriate, but the impacts would likely have been larger had ADB supported policy reforms and scaled up financing for large-scale replication and the adoption of new technologies. In Maldives, there is an opportunity for ADB to support capacity building to develop and implement technical standards in renewable energy and energy efficiency (these standards tend to be different from those for larger countries), procurement of energy-efficient products and services, and strategies for climate financing.

2. Nascent or Insubstantial Support for Regional Public Goods in Other Areas

76. ADB support for the SASEC transport program has not yet addressed RPGs. The transport sector contributes approximately 25% of GHG globally and is the fastest increasing source of GHG emissions.

⁵² SASEC. 2022. *Strategic Reorientation of SASEC Vision and Proposed New Initiatives*.

Countries have submitted proposals to reduce their GHG emissions through their Nationally Determined Contributions and in each country the transport sector is expected to play a significant role if national target reductions for GHGs are to be reached. Measures to reduce GHGs include improvements in fuel efficiency, promotion of electric vehicles, increased use of active transport, and modal shifts from road to rail and inland water transport modes. Decarbonization of the transport sector is therefore a significant factor in countries meeting their nationally determined contributions and will require the implementation of several interrelated policies to achieve results. While the scale of policies and programs across the region varies widely given the wide differences in the size of economies, there will be similar policy requirements in each of the countries to achieve intended outcomes. The SASEC program is well placed to support the implementation of national decarbonization plans in the transport sector, through its knowledge, capacity building, and lending activities. ADB has not yet provided such support, although potential work in this area was discussed at a 2023 Transport Sector Working Group meeting.

77. In 2020, ADB supported a Green Ports Study, focusing on the ports of Chattogram in Bangladesh, Visakhapatnam in India, and Male in Maldives.⁵³ The study examined the possibility of lowering the environmental impact of these ports by reducing the energy consumption of port operations and by mitigating environmental impact through environmental management.⁵⁴ It proposed greater use of shore power by ships rather than using ship's own generators, utilizing dockside facilities to generate solar power, electrification of port equipment, and greater use of light-emitting diode LED lighting. While the findings showed the measures that could be implemented, the study did not conduct feasibility studies of the individual proposals or estimate the savings in GHGs that could be generated.

78. RPGs have not been explicitly included in the SASEC Trade Facilitation Strategic Framework (TFSF) or in SASEC's trade facilitation initiatives and projects. However, if waiting times for vehicles at border crossing points are cut, this would reduce vehicular pollution on both sides of the border.

79. SASEC has not been active across other important RPG spaces, such as transboundary water management, disaster risk management, control of communicable diseases, or air pollution control. ADB could have paid more attention to conducting analysis and regional dialogue on optimizing hydropower, irrigation, industrial and urban water use, and preserving ecology, using a trans-border river basin approach. A first step could be to prepare a database on water and biodiversity resources, focusing on their vulnerability to climate change, pressure from economic growth, and hazardous waste. A regional approach to disaster risk management could be adopted to identify hotspots of potential natural disasters and risk-prone populations, strengthen critical infrastructure, establish early warning systems, and develop financial instruments and mechanisms to manage the financial consequences of catastrophic events. ADB recently approved a TA project to strengthen capacity in Bhutan and Nepal to assess multi-hazard risks, including transboundary impacts, and to improve resilience. It remains to be seen whether this will lead to more systematic, regional level support for disaster risk management.⁵⁵

80. A regional approach to fight communicable diseases is lacking. Support is needed for regional research and development and surveillance, especially on the implications of climate change on the incidence of communicable diseases. Awareness-raising on the causes of diseases and their preventive measures is needed. In this area, collaboration with the World Health Organization would be essential.⁵⁶ In 2022 and 2023, ADB approved several loans to help Bhutan and Maldives recover from the COVID-19 pandemic, and to enhance Bangladesh's pandemic preparedness by establishing domestic vaccine production, therapeutic, and diagnostic manufacturing capacity and strengthening regulatory capacities.

⁵³ ADB. 2021. [Regional: Advancing Cooperation in the Maritime Sector in South Asia Subregional Economic Cooperation Program](#).

⁵⁴ Originally the study also included Colombo Port in Sri Lanka, but this component was deleted from the scope due to political disruption at the time.

⁵⁵ ADB. 2023. [Technical Assistance to the Kingdom of Bhutan and Nepal for Building Adaptation and Resilience in the Hindu Kush Himalayas](#).

⁵⁶ K. Moinuddin. 2010. [The Provision of Regional Public Goods in South Asia, SASEC](#).

These projects had limited regional focus as they were emergency measures to contain the pandemic and prepared under extraordinary circumstances.

81. The subregion could benefit greatly from cooperation across countries on air quality control and airshed-wide air quality management. Sources of air pollution include agricultural waste burning and cremation practices. A regional approach could be initiated under SASEC to address these issues and to prepare air quality management plans. As a first step, an effective regional tracking system accompanied by a set of joint reduction targets could be established. This could be followed by establishing emissions trading systems which would provide economic incentives for reducing pollution emissions.⁵⁷

⁵⁷ World Bank. 2023. [*Striving for Clean Air: Air Pollution and Public Health in South Asia*](#).

Effective Institutional Arrangements Which Need Strengthening to Address Emerging Challenges

82. This chapter evaluates ADB performance in relation to the strategic and institutional framework employed by SASEC to deliver its development objectives. It is based on a review of ADB and SASEC strategy and operational plan documents and interviews with government officials and other key stakeholders in SASEC member countries, as well as with the SASEC secretariat and ADB staff. Overall, the evaluation found that SASEC institutions have evolved to address a growing agenda and have been well supported by ADB. However, the SASEC institutional framework needs to be strengthened if it is to address the increasingly complex cross-country challenges facing the subregion. Member countries widely appreciate SASEC's institutional setup and its responsive nature. This provides a foundation for strengthening SASEC to better respond to changing needs.

A. A Useful Platform for Plan and Project Coordination

83. The SASEC Program aims to promote regional economic cooperation through a three-tier institutional mechanism which facilitates plan and project coordination.⁵⁸ At the first tier, program strategic plans and priorities are discussed and endorsed by the program's top governing body, which was the Nodal Officials' Meeting (NOM) until 2022. NOMs were attended by directors general or equivalents, mostly from ministries of finance, who were joined by senior officials from other ministries and at times by staff from other development partners. The NOMs were co-chaired by ADB and the host country.⁵⁹ The NOMs was upgraded to Finance Ministers' Meetings (FMMs), supported by Senior Officials' Meetings (SOMs), in 2023. The first SOM was held in December 2023 and the first regularized FMM is expected to be held in late 2024. Through these strategic meetings, SASEC countries aim to reach agreement on the program's long-term directions and priorities, while also reviewing program implementation progress and sharing knowledge and sector best practices. In the first 5 years of the evaluation period (2011–2015), SASEC directions and priorities were not formally documented in any overarching strategy document, although they were embedded in ADB's South Asia Regional Cooperation Strategy, 2011–2015.⁶⁰ Since 2016, several SASEC strategic documents have been developed, including the SASEC Vision, the SASEC Operational Plan, 2016–2025, and updates to these documents. The operational plan includes a list of potential projects and the funding sources for each project, which include ADB, individual governments, and other development agencies.

84. At the second tier, sector-based working groups provide technical support for the strategic discussions at the top tier while also coordinating the identification of priority projects and activities for the mid-term. Working groups have been established for major sectors of the program, including transport, energy, and trade facilitation. Their meetings are held annually and are attended by senior officials from relevant ministries, senior ADB sector staff, and sometimes representatives from other development partners.⁶¹ The groups discuss a 3-year rolling pipeline of regional projects and projects

⁵⁸ ADB. 2013. [South Asia Subregional Economic Cooperation](#).

⁵⁹ Before 2012, the second year of the evaluation period, strategic discussions among member countries were carried out by the NOMs' predecessors: the High-Level Forums of ADB Regional Cooperation and Integration during 2009–2011 and the Country Advisors' Meetings during 2001–2008.

⁶⁰ ADB. 2010. [South Asia Regional Cooperation Operations Business Plan 2011–2013](#). Manila; ADB. 2011. [South Asia: Regional Cooperation Strategy \(2011–2015\)](#).

⁶¹ ADB. 2017. [SASEC Trade Facilitation and Transport Working Group Meeting](#). Colombo. 7–8 February.

with regional implications in accordance with SASEC strategic plans.⁶² The pipeline consists of SASEC priority projects and activities for the next 3 years and forms the basis for ADB's regional cooperation operational business plans.⁶³ In recent years, the pipeline has been documented in the Action Plans for SASEC Initiatives (APSI), which contain information on which projects ADB, other development partners, and individual governments will finance. The APSIs also provides essential information on priority projects so they can be coordinated across countries. The pipeline and APSIs are then discussed and endorsed at the NOMs or SOMs. Subsector-based subcommittees provide technical support on an as-needed basis as directed by the sector working groups.

85. At the third tier, ADB, in its role as the SASEC secretariat, provides knowledge, institutional, administrative, and financial support for SASEC meetings. It also delivers TA, including knowledge work and capacity building in such areas as strategy development, programming, and sector development, to support the conduct of the NOMs, now SOMs and FMMs, as well as meetings of the sector-based working groups and subsector-based subcommittees. It acts as a convenor and facilitator of these meetings and co-chairs the meetings with host countries. ADB also provides support to think tanks so they can provide governments with policy advice on regional cooperation. ADB's support is guided by ADB's regional cooperation and integration (RCI) strategies.

B. Evolving to Meet New Challenges

86. Conceived as an institution-light, project-heavy institution without an overall strategy of its own, the SASEC Program has largely followed a country-by-country and project-by-project approach to project identification, preparation, and implementation. This has resulted in an inadequate focus on the regional dimensions of SASEC projects, which has affected the efficient achievement of the SASEC program's strategic regional objectives. Individual projects are often designed and implemented as single-country projects without adequate consideration of the need to address cross-border issues or to integrate with other sectors, although they are in alignment with an overall corridor strategy. RCI outcomes are rarely included as project objectives or monitored. The country-focused project selection process has been appropriate in the short term as it has provided needed investments; however, in the long term, operations need a strategic vision that assesses policy issues and constraints and the interplay among various sectors, methods, and approaches.

87. Over the evaluation period, the SASEC Program gathered momentum and its institutions began to evolve to enable the delivery of a more ambitious, complex agenda. The recently created FMMs are becoming increasingly important. The SOM in December 2023 discussed the overall progress with respect to the key priorities established under the SASEC Operational Plan, 2016–2025; approved the preparations for a new plan for the forthcoming 10-year period; and directed that an action plan be prepared for projects to 2035. However, it did not discuss the need for an overall strategy with a plan for mid-term review and a results framework. The SOM considered whether to expand the SASEC working groups to include a new working group on climate change, pandemic and disaster resilience but decided not to. It agreed that stronger actions were required on trade corridors to address transport, border infrastructure, and trade facilitation in an integrated way, as well as to make progress on digitalization and clean energy.

88. Knowledge products and capacity building have acquired greater importance as ADB support for SASEC has broadened to cover policies, institutions, and markets in its key focus areas of transport, energy, and trade facilitation. Knowledge products are no longer only attached to specific projects. In transport, ADB conducted a Bangladesh–India cargo movement study, and a logistics study that highlighted the importance of multimodal and intermodal transport planning. Since 2022, SASEC,

⁶² Consisting of the agreements reached among SASEC countries during the High-Level Forums of ADB Regional Cooperation and Integration as reflected in ADB's regional cooperation strategies for South Asia before 2016 and the SASEC long-term operational plans and SASEC Visions after 2016.

⁶³ ADB. 2012. *South Asia Regional Cooperation Operations Business Plan, 2013–2015*. Manila.

through its knowledge activities, has undertaken studies to demonstrate the benefits of multimodal transport including increased use of containerization, benefits from shifting to rail from road transport particularly for bulk freight, and assessed civil aviation needs in Nepal and Bhutan to improve domestic and international connectivity. Knowledge work has also been carried out on trade and maritime corridors. In the energy field, ADB has sponsored a series of studies to support the development of a multilateral energy trading market, including interconnections. However, movement by the countries to implement multilateral energy exchanges has been incremental at best. ADB helped update the SASEC transmission master plan and provided low-cost financing for regional energy generation. Capacity building has focused on Bhutan and Nepal. Technical assistance is planned for supporting long-term energy planning, power market development, and capacity building to implement large-scale regional infrastructure projects, mobilize investments, and encourage digital technologies. In trade facilitation, ADB provided knowledge through policy-based loans (PBLs) for customs modernization. Attention is now expanding to knowledge products on food security and food regulation and trade, given the impediments to trade created by the existing archaic SPS regulations. Planned knowledge products on SPS and technical barriers and harmonization of standards will help address major hurdles to trade integration.

89. All SASEC members expressed their satisfaction with ADB's knowledge provision and capacity building efforts. Attention now needs to shift to knowledge work on clean energy and other aspects of climate change as well as to the broad regional public goods agenda. The secretariat should develop knowledge products of a policy or strategic nature that could be used innovatively to drive the SASEC agenda forward, for example, by increasing its focus on quality and results, the role of the private sector, and regional public goods beyond environment.

C. A Lack of an Overall Strategy and Results Monitoring

90. In contrast to the two other major subregional programs, GMS and CAREC, SASEC has not formulated an overall strategy. This is in keeping with its institution-light philosophy and its focus on infrastructure projects and customs modernization. The SASEC Operational Plan, 2016–2025 (published in 2016), the SASEC Vision (published in 2017), and their updates provided some elements of a strategy. They defined the key pillars for SASEC projects—transport, energy, trade facilitation, and economic corridors—outlined operational priorities in some detail, and listed projects. The operational plan noted that implementation would require innovative and flexible institutional arrangements, strong knowledge support, and greater involvement of the private sector. The only strategy document developed by the SASEC Program was the Trade Facilitation Strategy, issued in 2014 for a 5-year period.

91. The experience from the GMS and CAREC programs demonstrates how a well-developed 10-year strategy can enable a regional program to support its vision, steer the program, and ensure attention is paid to monitoring, accountability, and results. Such a strategy would improve alignment with the ADB RCI Strategy and other guidance. A comprehensive and coherent SASEC overall strategy would enable a fuller discussion of opportunities, challenges, risks, and trade-offs. The strategy could identify and integrate key long-term priorities and goals, which could then be used to develop an innovative, diversified portfolio. There is no monitoring of results or outcomes at present, although monitoring of project implementation will be strengthened in accordance with decisions made by the most recent SASEC SOM. Unlike the GMS and CAREC, the SASEC program does not have an effective system to collect subregional transport and trade data. This has constrained the program's ability to monitor regional outcomes at the program level, such as the improvements in the SASEC corridor network and increased traffic and trade at border crossing points.

92. The lack of a strategy has led to an incomplete alignment of the SASEC operational plan with ADB policies and guidance. The SASEC program is aligned with the ADB RCI objectives of connectivity and competitiveness, but it has not had an approach to addressing regional public goods,

although recent FMMs have suggested that thinking on this point may be evolving. Water management, disaster risk management, and communicable disease control are all absent from the Operational Plan, 2016–2025. The SASEC Program has paid insufficient attention to the potential role of the private sector. Nor has the SASEC Program assigned any priority to gender and social inclusion, even though ADB's Strategy 2030 set a target that at least 75% of ADB's committed operations should promote gender quality by 2030. In contrast, gender mainstreaming is a cross-cutting theme of both the GMS and CAREC strategies.

D. Effective SASEC Secretariat with a Need to Play a Stronger Role in Addressing Emerging Challenges

93. ADB has provided effective secretariat support to the SASEC Program. The secretariat has been the key connecting tissue across the membership in developing project pipelines and supporting the work of working groups. It has facilitated policy and planning dialogue, consulted the membership on knowledge and capacity building needs, prepared or commissioned studies, and followed up on progress being made in projects and knowledge products. It has organized and facilitated conferences and meetings physically and virtually. Feedback from key government counterparts indicates that SASEC working groups have played an important role in bringing member countries together to set priorities to maximize common benefits and sharing knowledge and best practice.

94. It was the unanimous view of the SASEC membership that the secretariat had played an instrumental in SASEC operations. ADB as the secretariat is held in high regard by countries for its record as an effective facilitator and an honest broker in the SASEC Program and for the value of its diplomatic and technical role in some sensitive contexts, such as bilateral negotiations. Key government counterparts complimented the secretariat and emphasized the importance of ADB's neutral, impartial role in the SASEC Program. They suggested that, without ADB as the secretariat, it would have been difficult to ensure the effective functioning of the SASEC Program. However, countries suggested that in carrying out its honest broker role, the secretariat could be more assertive in setting a strategic agenda to address systemic and sensitive barriers and issues that constrain achieving equitable regional integration.

95. The secretariat could have been more proactive in helping SASEC members with innovative solutions to address challenging but increasingly critical priorities such as quality and results of interventions, the role of the private sector, and regional public goods. ADB could have supported SASEC to develop a comprehensive long-term strategy through appropriate knowledge and technical support that would have strengthened the program.

96. There is scope for better leveraging the synergies that could result from greater cooperation with other development partners, think tanks, and research institutions. There is no structured mechanism of cooperation between the SASEC Program and other stakeholders. Senior officials from four other development partners were invited to a recent NOM, but such collaboration needs to be made regular, and extended to more development partners.⁶⁴ Most of the discussions at SASEC meetings have been between the SASEC secretariat and country representatives, with limited engagement of other development partners, think tanks, and research institutions. Greater integration of these stakeholders would provide a more coherent and more informed discussion of the region's needs, identify potential funding and knowledge support at an earlier stage, and facilitate greater synergy on interventions to deliver improved regional results. Areas of cooperation could include consensus building and dialogue with member countries; analytical and diagnostic work to help countries understand the benefits of, and identify technical solutions to, problems in regional cooperation; and financing. Collaborative initiatives

⁶⁴ The invited development partners were Asian Infrastructure Investment Bank, New Development Bank, Japan International Cooperation Agency, and World Bank. During the mission interviews, other development partners expressed strong interest in developing cooperation with ADB and the SASEC Program. As shown in the recently issued annual Action Plan for SASEC Initiatives, other development partners provide substantial support for the regional projects in the subregion.

with development partners would help make high-level dialogues more effective, especially when supported by joint analytical and diagnostic work.

E. More Attention Needed to Address the Specific Challenges and Priorities of Smaller Nations

97. Given the disparity in size, geopolitical significance, and capacity between members of the SASEC Program, the secretariat has sought to ensure that smaller member countries can effectively participate in discussions or decision-making processes in SASEC forums. It has tried to advance multilateral interests, for example in energy trading and in trade facilitation, as well as the movement of vehicles across borders. The SASEC secretariat has played a useful role in balancing the interests of all members of the SASEC Program in the development of the program. Smaller countries particularly appreciate the honest broker role that ADB has played as the secretariat.

98. However, many smaller countries still face special constraints. They have a limited number of people who can attend all SASEC meetings, while on the other hand the topics of some meetings are not very tailored to their situations. They would like to see greater volumes of financing mobilized through the SASEC Program, including from ADB and other development partners. They appreciate and need ADB's support in their dialogue and negotiations on bilateral regional cooperation programs. They would appreciate more thorough consultations with them within the SASEC framework.

99. Smaller countries would like more emphasis on topics that are relevant to their circumstances at SASEC meetings. For example, many smaller countries face common challenges in institutional and technical capacity in renewable energy and energy efficiency. Their grids usually lack storage hydropower capacity as well as time and geo-spatial diversity needed for maintaining grid stability. Renewable energy and especially energy efficiency are negatively affected by thin and unsophisticated financial markets in these countries. Many of them are either landlocked and mountainous or island countries and are therefore more dependent on aviation for internal and external connections.

100. Stakeholders from smaller countries indicated that it would be useful if they could engage with local governments and business communities in neighboring countries. The SASEC Program has done little to strengthen smaller countries' engagement with the private sector or local governments, although such engagement could provide ideas and initiatives to the SASEC Program from the ground up. It could consider establishing a pilot platform for governments in Bangladesh, Bhutan, Nepal, and Myanmar to engage with local governments in northeast and east India. A similar pilot could explore the potential for a model bringing together the island countries of the SASEC Program with states in peninsular India.

CHAPTER 5

Conclusions and Recommendations

A. Conclusions

101. ADB's SASEC support, based on a project-driven approach, has been partially successful in advancing regional integration in the SASEC subregion. Key support has included financing for the SASEC transport corridor network, trade facilitation reforms, and energy investments. ADB has helped improve regional connectivity, particularly in enhancing the road network. Border crossing times have been reduced, and bilateral electricity trading between India and neighboring countries has been strengthened.

102. Despite these improvements, the high cost of moving goods continues to limit competitiveness, particularly of the smaller SASEC economies. Transport connectivity needs to be broadened to include multimodal forms of transportation. Overall diversification in trade flows remains limited. Non-tariff barriers (NTBs) continue to impede trade. Regional value chains and interlinked economic corridors remain underdeveloped. The SASEC program has strengthened electricity grid connectivity, but a multilateral energy trade market has not yet been developed.

103. Regional public goods (RPGs) were not explicitly included in any SASEC strategic documents, and few RPG activities have been initiated, despite tremendous need and opportunity in the subregion. ADB's support for infrastructure and energy efficiency could be a good entry point for addressing climate mitigation and air pollution. Developing and sustaining transboundary water ways and support for addressing environmental degradation and biodiversity loss and for promoting climate adaptation are also needed.

104. Member countries commend SASEC's institutional set-up and ADB's role as the secretariat and its responsive nature to country needs. SASEC has an appropriate approach to convene countries and initiate work on regional issues. However, SASEC has lacked an overall, coherent strategy, basing its project-driven approach on an operational plan for project investments. Attention to broader strategic and structural issues to improve the enabling environment for private sector development, competitiveness, and trade is needed, as is a much more active approach to addressing RPGs. The project-by-project approach has limited ADB's overall contribution to regional objectives. The secretariat has not leveraged potential synergies from greater cooperation with other development partners, think tanks, and research institutions. ADB and SASEC need to build on the credibility they have established with member countries to help them meet the evolving and complex challenges to achieve regional benefits.

B. Recommendations

105. The evaluation makes the following recommendations to ADB:

106. **Recommendation 1. Support the SASEC Program in developing an overall long-term strategy to achieve its vision and improve its alignment with ADB RCI strategies.** With a new version of the SASEC Vision now being formulated and the current Operational Plan, 2016–2025 close to completion, this would be an opportune time for ADB to support the development of a strategy, to link the vision with the investment pipeline. A strategy, based on a comprehensive analysis of opportunities and challenges, would enable the program to identify and focus on areas that will help achieve the new vision. In supporting its delivery, a strategy could also provide guidance on the broader and more integrated

support needed for working across sectors, strengthening capacity, increasing policy dialogue, and fostering partnerships. Such a strategy would improve alignment with ADB strategic goals and RCI guidance, particularly in regional public goods. In addition to climate change and disaster risk mitigation and preparedness, the strategy could include other thematic priorities such as communicable disease control, the environment, and gender. It should provide direction for improving the overall enabling environment for the private sector to support development of value chains. The strategy should include a results framework and a monitoring plan with appropriate outcome indicators, baselines, and targets. The strategy and results framework could also guide the sequencing and prioritization of actions for addressing both longer-term challenges and more immediate opportunities. As an initial step, it could strengthen the identification of areas of need where there is greater consensus between member countries for collective action.

107. **Recommendation 2. Support the broadened agenda for regional integration and regional public goods through strengthened knowledge work, policy advice, and sector diagnostics.** ADB needs to strengthen its targeted TA to generate knowledge for regional integration and RPGs. It should promote knowledge sharing and consensus among SASEC member countries and between the SASEC Program and other ADB units. Addressing persistent challenges such as developing regional value chains and economic corridors, enhancing regional energy integration, and creating a more integrated and multimodal transport system requires underpinning by diagnostics and planning. Support for diagnostic work is needed to help develop directional reports as well as detailed operational plans and technical guidelines for regional public goods, in particular to address climate change and environmental degradation. TA will need to be more closely associated with and complemented by investment operations as well as potential policy-based lending that supports regulatory reforms.

108. **Recommendation 3. Strengthen the regional lens and justification in the conception and design of SASEC projects.** A regional focus should be at the heart of all SASEC operations. This will enhance the contribution to regional outcomes of single-country projects, the primary instrument in support of SASEC. ADB should reform its project preparation and classification systems to ensure that RCI objectives are appropriately reflected in project design and a project's regional benefits are significant. It needs to adopt a more programmatic approach to providing support that is coordinated across countries to address key challenges not easily solved by stand-alone single-country projects. Support for the development of economic corridors and regional value chains should be more focused on interlinkages, synergies, and the harmonization of relevant regulations, standards, and practices across countries. Transport projects could be better integrated with support for trade facilitation and economic corridors. Transport operations also need to shift from being dominated by road improvements to include other modes, in particular aviation and maritime transport, which are important for connectivity of the smaller member countries. There is a need to strengthen a regional market-based electricity trading structure to maximize the regional benefits of energy trade. In trade facilitation, support could be expanded beyond customs modernization to addressing other key non-tariff barriers to trade. When feasible, ADB should pursue multi-country projects for their demonstration effect as they bring higher visibility and potential impact.

109. **Recommendation 4. Strengthen support for the SASEC governance structure and ADB's role as the SASEC secretariat.** As RPGs and private sector development increasingly become a critical part of the agenda, ADB should strengthen support for creating supporting working and technical groups to help build consensus and institutionalize these emerging priorities into the SASEC Program. Similar groups are needed to take up the unique challenges of smaller countries to ensure that the gains from SASEC's work are realized by all member countries. The strengthened SASEC agenda will also require the secretariat to exercise a stronger role in strategic thinking and in imparting direction to future SASEC activities, while also tapping into ADB cross-sector expertise. ADB resource allocations will need to be consistent with the increased role of the secretariat.

110. **Recommendation 5. Promote a platform for coordination and engagement with other development partners, think tanks and research institutions.** Partner participation in strategy and work planning discussions, including through involvement in working groups, should be considered as appropriate. The convening power of partners collectively on complex RPGs and other regional issues such as management of transboundary water basin resources, communicable disease surveillance, and regional market-based energy trading could yield dividends. Improved coordination with other development partners will also enable better tailoring of knowledge, TA, and financing, taking account of the comparative advantages of different partners. Engaging think tanks and research institutions in strategic discussions would enable ADB to leverage their knowledge and perspectives

Appendixes

APPENDIX 1: ADB SOUTH ASIA SUBREGIONAL ECONOMIC COOPERATION PROGRAM PORTFOLIO, 2001–2023¹

**Table A1.1: ADB Support by SASEC Country, 2011–2023
(number and volume)**

Country	Investment Projects		Technical Assistance		Total		Share of Total (%), based on	
	No.	Amount (\$ million)	No.	Amount (\$ million)	No.	Amount (\$ million)	No.	Amount
Bangladesh	20	5,523.88	19	22.84	39	5,546.71	23	44
India	17	3,517.33	13	17.63	30	3,534.96	18	28
Nepal	21	2,473.38	19	22.92	40	2,496.30	24	20
Sri Lanka	1	642.73	5	5.23	6	647.96	4	5
Bhutan	8	323.87	11	14.10	19	337.97	11	3
Regional	0	-	29	68.98	29	68.98	17	1
Maldives	2	20.00	4	5.80	6	25.80	4	0
Total	69	12,501.19	100	157.49	169	12,658.68	100	100

ADB = Asian Development Bank, No. = number, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The total number of investment projects does not sum to 67 since one regional project was implemented in three countries.
2. The technical assistance (TA) portfolio includes five regional TA projects that were approved before 2011 but have supplementary financing that was approved during 2011–2023.
3. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

Table A1.2: Status of ADB-Supported SASEC Projects, 2001–2023

Item	2011–2023				2001–2023			
	Investment Projects		TA		Investment Projects		TA	
	No.	%	No.	%	No.	%	No.	%
Active	45	67	39	39	46	53	39	26
Mature (passed at least 50% of the implementation period)	29	64	26	67	30	65	26	67
Completed	22	33	61	61	40	47	113	74
Self-assessed	12		31		28		63	
Validated	8		12		24		12	
Not evaluated	10		30		12		50	
Total	67	100	100	100	86	100	152	100

ADB = Asian Development Bank, No. = number, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. Information on project status is as of 19 March 2024.
2. There are cases of multiple reporting of a completion report since (i) some projects were jointly assessed, and (ii) the additional financing is counted separately from its original project.
3. The classification of maturity in active projects is a rough estimate of whether a project has passed 50% of its expected implementation period based on the approval year and latest revised closing date.
4. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates.

¹ The portfolio data in this appendix cover the evaluation period as well as the preceding 10-year period in order to show the historical trend of the portfolio.

Table A1.3: ADB Support in SASEC Countries, 2001–2023

Item	Investment Projects			Technical Assistance		
	2001–2010	2011–2023	Total	2001–2010	2011–2023	Total
Number of projects	19	67	86	57	100	152
ADB financing (\$ million)	2,038.22	10,597.41	12,635.63	41.87	96.86	138.72
Cofinancing (\$ million)	97.96	1,903.78	2,001.74	11.99	60.63	72.62
Total financing (\$ million)	2,136.18	12,501.19	14,637.37	53.85	157.49	211.34

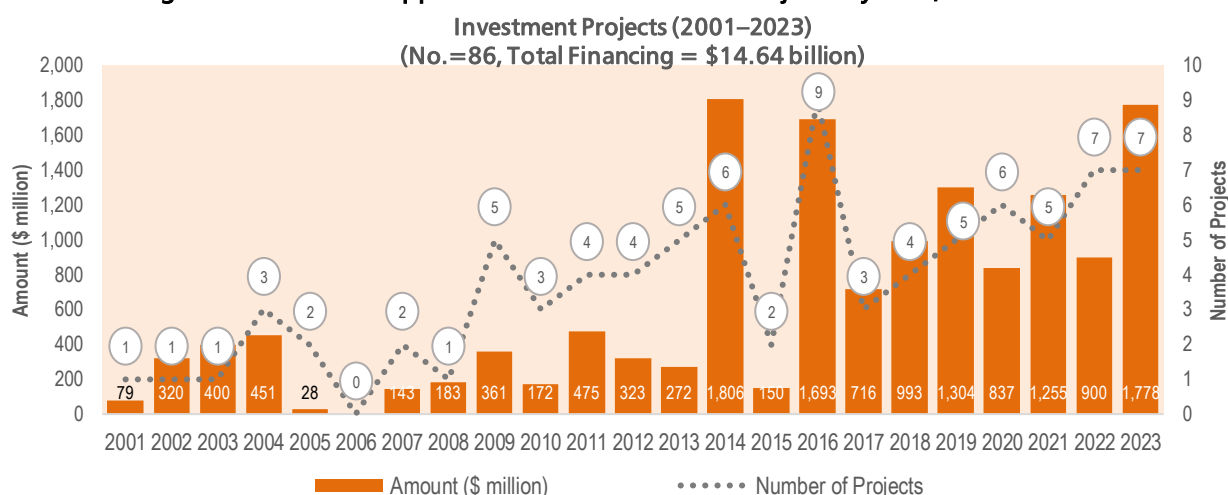
ADB = Asian Development Bank, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. Additional financing operations in investment projects are counted separately from the original project while supplementary financing in TA projects is not counted separately.
2. The number of TA projects does not sum to the total. The count in the period 2011–2023 includes five regional TA projects originally approved before 2011 but with supplementary financing during 2011–2023.
3. Totals may not sum precisely because of rounding.

Source: ADB Controller's Department database, ADB eOps, and SASEC portfolio database. SASEC. [SASEC Projects](#) (accessed).

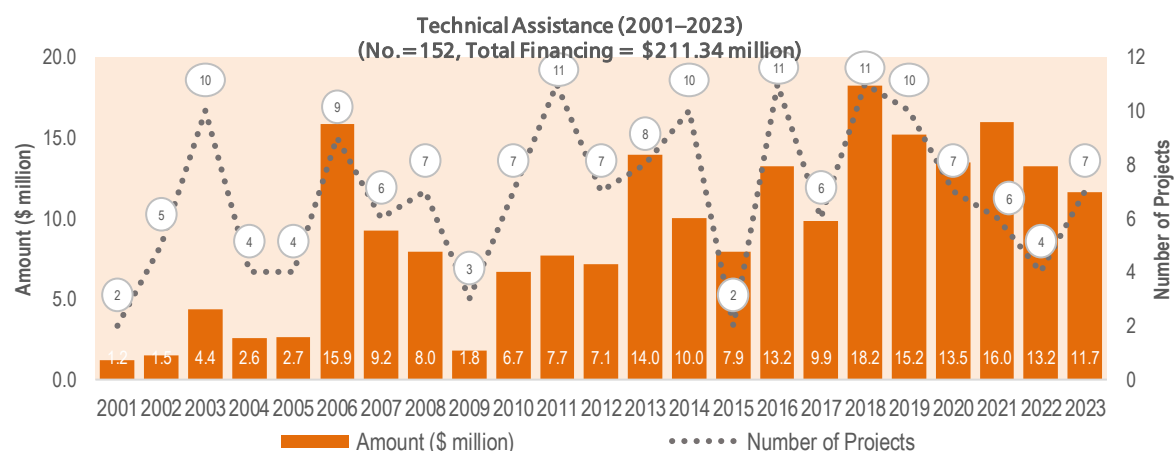
Figure A1.1: ADB's Support for SASEC Investment Projects by Year, 2001–2023



ADB = Asian Development Bank, SASEC = South Asia Subregional Economic Cooperation.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

Figure A1.2: ADB's Support for SASEC Technical Assistance by Year, 2001–2023



ADB = Asian Development Bank, SASEC = South Asia Subregional Economic Cooperation.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.4: ADB SASEC Investment Projects by Sector, 2001–2010
(number and volume)**

Sector	Investment Projects		Share of Total (%), based on	
	Number	Amount (\$ million)	Number	Amount
Economic corridor	0	0	0	0
Energy	3	352.24	16	16
Health	0	0	0	0
ICT	2	3.57	11	1
Tourism	0	0	0	0
Trade facilitation	0	0	0	0
Transport	14	1,770.37	74	83
Total	19	2,136.18	100	100

ADB = Asian Development Bank, ICT = information and communication technology, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The amount includes ADB financing and cofinancing. Additional financing operations are counted separately from original projects.
2. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.5: ADB SASEC Investment Projects by Sector, 2011–2023
(number and volume)**

Sector	Investment Projects		Share of Total (%), based on	
	Number	Amount (\$ million)	Number	Amount
Economic corridor	7	1,652.50	10	13
Energy	13	1,834.27	19	15
Health	3	359.47	4	3
ICT	0	0	0	0
Tourism	2	65.21	3	1
Trade facilitation	7	355.67	10	3
Transport	35	8,234.07	52	66
Total	67	12,501.19	100	100

ADB = Asian Development Bank, ICT = information and communication technology, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The amount includes ADB financing and cofinancing. Additional financing operations are counted separately from original projects.
2. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.6: ADB SASEC Technical Assistance by Sector, 2001–2010
(number and volume)**

Sector	Technical Assistance		Share of Total (%), based on	
	Number	Amount (\$ million)	Number	Amount
Economic corridor	0	0	0	0
Energy	8	6.11	14	11
Health	0	0	0	0
ICT	3	5.35	5	10
Tourism	2	1.40	4	3
Trade facilitation	16	17.76	28	33
Transport	28	23.23	49	43
Total	57	3.85	100	100

ADB = Asian Development Bank, ICT = information and communication technology, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The amount includes ADB financing and cofinancing. Supplementary financing operations are not counted separately from original projects.
2. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.7: ADB SASEC Technical Assistance by Sector, 2011–2023
(number and volume)**

Sector	Technical Assistance		Share of Total (%), based on	
	Number	Amount (\$ million)	Number	Amount
Economic corridor	5	7.60	5	5
Energy	23	31.31	23	20
Health	1	2.00	1	1
ICT	0	0	0	0
Industry and trade	2	3.35	2	2
Tourism	1	1.00	1	1
Trade facilitation	29	60.25	29	38
Transport	39	51.98	39	33
Total	100	157.49	100	100

ADB = Asian Development Bank, ICT = information and communication technology, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The amount includes ADB financing and cofinancing.
2. Supplementary financing operations are not counted separately from original projects.
3. The TA portfolio includes five regional TA projects that were approved before 2011 but which had supplementary financing that was approved during 2011–2023.
4. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.8: ADB SASEC TA Projects by Nature of Activity, 2001–2010.
(number and volume)**

Nature of TA Activity	Technical Assistance		Share of Total (%), based on	
	Number	Amount (\$ million)	Number	Amount
Capacity development TA	5	12.71	9	24
Policy advisory TA	6	7.39	11	14
Project preparation TA	21	14.47	37	27
Research and development TA	4	6.25	7	12
Others (study, training)	21	13.04	37	24
Total	57	53.85	100	100

ADB = Asian Development Bank, SASEC = South Asia Subregional Economic Cooperation, TA = technical assistance.

Notes:

1. The amount includes ADB financing and cofinancing.
2. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.9: ADB SASEC TA Projects by Nature of Activity, 2011–2023
(number and volume)**

Nature of TA Activity	Technical Assistance		Share of Total (%), based on	
	Number	Amount (\$ million)	Number	Amount
Capacity development TA	63	112.22	63	71
Policy advisory TA	9	9.50	9	6
Project preparation TA	21	23.00	21	15
Research and development TA	6	12.55	6	8
Others (study, training)	1	0.22	1	0
Total	100	157.49	100	100

ADB = Asian Development Bank, SASEC = South Asia Subregional Economic Cooperation, TA = technical assistance.

Notes:

1. The amount includes ADB financing and cofinancing. Supplementary financing operations are not counted separately from original projects.
2. The TA portfolio includes five regional TA projects that were approved before 2011 but have supplementary financing was approved during 2011–2023.
3. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on SASEC portfolio database.

Table A1.10: ADB's Support by SASEC Country, 2001–2010
(number and volume)

Country	Investment Projects		Technical Assistance		Total		Share of Total (%), based on	
	No.	Amount (\$ million)	No.	Amount (\$ million)	No.	Amount (\$ million)	No.	Amount
India	6	1,346.96	7	5.00	13	1,351.96	16	62
Bangladesh	6	298.47	6	5.29	12	303.77	15	14
Bhutan	4	253.50	7	5.54	11	259.04	14	12
Nepal	6	236.25	7	3.65	13	239.90	16	11
Regional	1	1.00	29	33.37	30	34.37	38	2
Sri Lanka	0	0	1	1.00	1	1.00	1	0
Maldives	0	0	0	0	0	0	0	0
Total	23	2,136.18	57	53.85	80	2,190.04	100	100

ADB = Asian Development Bank, No. = number, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The total number of investment projects does not sum to 19 since two regional projects were implemented in three countries.
2. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

Table A1.11: ADB's Investment Project Support by Sector and by SASEC Country, 2001–2010
(number and volume)

Sector/ and Country	Investment Projects		Share of Total (%), based on	
	No.	Amount (\$ million)	No.	Amount
Economic Corridor	0	0	0	0
Energy	3	352.24	13	16
Bangladesh	1	100.00	33	28
Bhutan	1	182.74	33	52
Nepal	1	69.50	33	20
Health	0	0	0	0
ICT	4	13.57	17	1
Bangladesh	1	2.87	25	21
Bhutan	1	4.70	25	35
Nepal	1	5.00	25	37
Regional	1	1.00	25	7
Tourism	0	0	0	0
Trade Facilitation	0	0	0	0
Transport	16	1,770.37	70	83
Bangladesh	4	195.60	25	11
Bhutan	2	66.06	13	4
India	6	526.96	38	30
Nepal	4	161.75	25	9
Total	23	2,136.18	100	100

ADB = Asian Development Bank, ICT = information and communication technology, No. = number, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The total number of investment projects does not sum to 19 since two regional projects were implemented in three countries.
2. The amount includes ADB financing and cofinancing. Additional financing operations are counted separately from original projects.
3. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.12: ADB's Investment Project Support by Sector
and by SASEC Country, 2011–2023**
(number and volume)

Sector and Country	Investment Projects		Share of Total (%) based on	
	No.	Amount (\$ million)	No.	Amount
Economic Corridor	7	1,652.50	10	13
India	6	1,500.12	86	91
Nepal	1	152.38	14	9
Energy	13	1,834.27	19	15
Bangladesh	3	632.75	23	34
Bhutan	2	218.32	15	12
Nepal	8	983.20	62	54
Health	3	359.47	4	3
Bangladesh	1	336.47	33	94
Bhutan	1	13.00	33	4
Maldives	1	10.00	33	3
ICT	0	0	0	0
Tourism	2	65.21	3	1
India	2	65.21	100	100
Trade Facilitation	9	355.67	13	3
Bangladesh	2	164.00	22	46
Bhutan	1	11.67	11	3
India	1	2.00	11	1
Maldives	1	10.00	11	3
Nepal	4	168.00	44	47
Transport	35	8,234.07	51	66
Bangladesh	14	4,390.66	40	53
Bhutan	4	80.88	11	1
India	8	1,950.00	23	24
Nepal	8	1,169.80	23	14
Sri Lanka	1	642.73	3	8
Total	69	12,501.19	100	100

ADB = Asian Development Bank, ICT = information and communication technology, No. = number, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The total count of investment projects does not sum to 67 since one regional project was implemented in three countries.
2. The amount includes ADB financing and cofinancing. Additional financing operations are counted separately from original projects.
3. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.13: ADB's Technical Assistance Support by Sector
and by SASEC Country, 2001–2010**
(number and volume)

Sector and Country	Technical Assistance		Share of Total (%) based on	
	No.	Amount (\$ million)	No.	Amount
Economic Corridor	0	0	0	0
Energy	8	6.11	14	11
Bangladesh	1	0.23	13	4
Bhutan	2	3.09	25	51
Nepal	3	1.05	38	17
Regional	2	1.75	25	29
Health	0	0	0	0
ICT	3	5.35	5	10
Regional	3	5.35	100	100
Tourism	2	1.40	4	3
Regional	2	1.40	100	100
Trade Facilitation	16	17.76	28	33
Bangladesh	1	0.50	6	3
Nepal	1	0.40	6	2
Regional	14	16.86	88	95
Transport	28	23.23	49	43
Bangladesh	4	4.57	14	20
Bhutan	5	2.45	18	11
India	7	5.00	25	22
Nepal	3	2.20	11	9
Regional	8	8.01	29	34
Sri Lanka	1	1.00	4	4
Total	57	53.85	100	100

ADB = Asian Development Bank, ICT = information and communication technology, No. = number, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The amount includes ADB financing and cofinancing. Additional financing operations are counted separately from original projects.
2. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

**Table A1.14: ADB's Technical Assistance Support by Sector
and by SASEC Country, 2011–2023.**
(number and volume)

Sector and Country	Technical Assistance		Share of Total (%) based on	
	No.	Amount (\$ million)	No.	Amount
Economic Corridor	5	7.60	5	5
Bangladesh	1	2.50	20	33
India	3	3.60	60	47
Nepal	1	1.50	20	20
Energy	23	31.31	23	20
Bangladesh	3	0.85	13	3
Bhutan	3	3.50	13	11
Maldives	1	2.00	4	6
Nepal	5	6.58	22	21
Regional	10	18.16	43	58
Sri Lanka	1	0.23	4	1
Health	1	2.00	1	1
Regional	1	2.00	100	100
ICT	0	0	0	0
Industry and Trade	2	3.35	2	2
Maldives	1	2.60	50	78
Sri Lanka	1	0.75	50	22
Tourism	1	1.00	1	1
India	1	1.00	100	100
Trade Facilitation	29	60.25	29	38
Bangladesh	4	4.23	14	7
Bhutan	4	5.00	14	8
India	1	0.23	3	0
Maldives	2	1.20	7	2
Nepal	5	7.85	17	13
Regional	13	41.75	45	69
Transport	39	51.98	39	33
Bangladesh	11	15.26	28	29
Bhutan	4	5.60	10	11
India	8	12.80	21	25
Nepal	8	7.00	21	13
Regional	5	7.07	13	14
Sri Lanka	3	4.25	8	8
Total	100	157.49	100	100

ADB = Asian Development Bank, ICT = information and communication technology, No. = number, SASEC = South Asia Subregional Economic Cooperation.

Notes:

1. The amount includes ADB financing and cofinancing. Additional financing operations are counted separately from original projects. Supplementary financing operations are not counted separately from original projects.
2. The portfolio includes five regional TA projects that were approved before 2011 but have supplementary financing that was approved during 2011–2023.
3. Totals may not sum precisely because of rounding.

Source: ADB (Independent Evaluation Department) estimates based on the SASEC portfolio database.

APPENDIX 2: THEORY OF CHANGE FOR THE EVALUATION

1. **The theory of change maps how ADB's support for the SASEC Program contributed to achieving the three RCI strategic objectives of connectivity, competitiveness, and RPGs in the SASEC subregion** (Figure A2). It was developed following a review of Asian Development Bank (ADB) regional cooperation and integration (RCI) strategies and their results frameworks, which guide ADB's support for the South Asia Subregional Economic Cooperation (SASEC) Program and other regional programs. The development of the theory of change was also based on consultations with the SASEC Secretariat and on an assessment of SASEC strategies and the ADB South Asia Regional Cooperation Operational Business Plans over the past decade. The SASEC Program has not yet developed a formal and complete results framework for its long-term strategic planning. However, the key elements of the SASEC results framework can be inferred from the SASEC Operational Plan, 2016–2025; the SASEC Vision; updates to these documents; and the Regional Cooperation Operational Business Plans, which detailed SASEC's planned inputs and activities, intended objectives, and expected impacts.

2. As shown in Figure A2, the evaluation mainly focused on the boxes with solid lines and arrows. These describe ADB's inputs and activities and the main causal chains from ADB interventions to the expected outputs and outcomes. The boxes with broken lines are generally outside the scope of the evaluation. They show inputs that the government, other regional organizations, other development partners, and the private sector provide. They describe a high level of impact that results from the efforts of many other actors, not just ADB.¹ The evaluation did not assess this level of results because of attribution difficulties. The lower boxes marked in orange lay out key ADB and SASEC strategies, SASEC instruments, and SASEC governance and administrative structures, which constitute the main institutional arrangements for the delivery of the program.

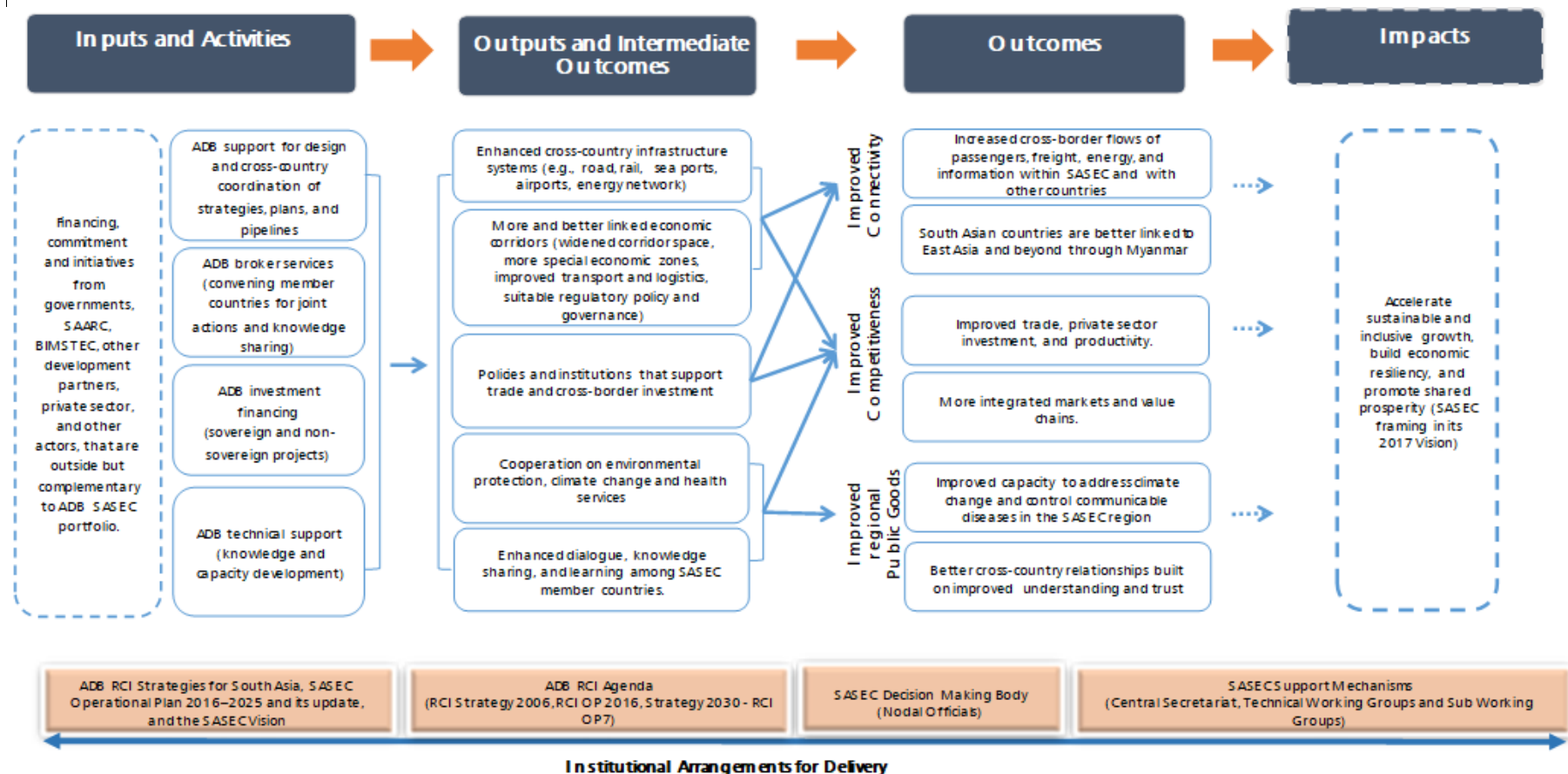
3. **ADB inputs and activities comprise sovereign loans, grants, technical assistance, secretariat support for strategy and plan development, and broker services to facilitate policy dialogue and knowledge sharing.** These contribute to achieving the expected SASEC outputs and intermediate outcomes, including enhanced cross-country physical infrastructure and improved economic corridors, strengthened policies and institutions for trade and investment, and strengthened cooperation on environmental protection, climate change, and health services. Additionally, ADB broker services and technical assistance help to bring about improved dialogue, knowledge sharing, and learning on policies and best practices among SASEC member countries.

4. **The outputs and intermediate outcomes lead to final outcomes that are grouped under the ADB's three RCI strategic objectives of connectivity, competitiveness, and RPGs.** As illustrated in Figure A2, several pathways can transform outputs and intermediate outcomes into final outcomes. Under connectivity, the envisaged outcomes include improved cross-border linkages and increased flows of goods, information, and people. These are mainly achieved through improvements to cross-border multimodal transport networks, development of economic corridor systems, and trade facilitation to promote policies that encourage trade, investment, and financial market integration. Under competitiveness, the outcomes encompass improved trade, private sector investment, and productivity, and more integrated markets and supply chains. These are achieved through many of the measures that contribute to connectivity, as well as by enhancing electricity trade to improve energy supply and reliability and collaboration on environmental issues, climate change, and health. In regional public goods, greater cooperation would enable SASEC countries to address shared environmental and climate risks and health concerns, leading to improved climate change mitigation and adaptation and more effective control measures during pandemics. Additionally, dialogue, knowledge sharing, and learning among SASEC member countries is likely to lead to better cross-country relationships built on mutual understanding and trust.

5. **ADB is one of many actors contributing to the achievement of the SASEC outcomes.** Governments play the leading role in devising policies and making investments, building on the policy dialogues and strategy discussions at the platforms of SASEC as well as at the South Asian Association for Regional Cooperation and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, and drawing in development partner financial investments and technical support. The private sector and other actors in civil society are making increasingly important contributions to attaining the broad RCI outcomes.

¹ ADB contributes to these impacts, but its distinct contribution is less visible than at the outcome level due to attribution difficulties.

Figure A2: Theory of Change for the Evaluation of ADB's Contribution to SASEC

**Exogenous factors assumed likely to have affected outcomes:**

- Global and regional macroeconomic stability.
- Regional peace, security, and political stability.
- Institutional and policy capacities at the national level.
- The duration and impact of the COVID-19 pandemic.

ADB = Asian Development Bank, BIMSTEC = Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, RCI = regional cooperation and integration, SAARC = the South Asian Association for Regional Cooperation, SASEC = South Asia Subregional Economic Cooperation.

Notes: Arrows emphasize the main causal relationships. Boxes with solid lines were the focus of the evaluation.

Source: Asian Development Bank (Independent Evaluation Department)

APPENDIX 3: USING CONTRIBUTION TRACING TO ASSESS ADB CONTRIBUTION TO ENERGY CONNECTIVITY BETWEEN INDIA AND BANGLADESH

1. Using contribution tracing, also referred to as process tracing with Bayesian updating, the evaluation conducted a case study to validate Asian Development Bank's (ADB) contribution to energy connectivity between India and Bangladesh through two ADB-financed projects: the Bangladesh–India Electrical Grid Interconnection Project and the Second Electrical Grid Interconnection Project. The first project with a capacity of 500 megawatts (MW) and loan financing of \$112 million was approved in August 2010. Given the success of the original project and the desire of both countries to increase the volume of electricity trade, the second project, also with a capacity of 500 MW and this time loan financing of \$120 million, was approved in September 2015.¹

2. Contribution tracing assesses an intervention's contribution to its intended outcome and impact. It involves constructing contribution causal pathways through a systematic examination of all available confirming and disconfirming evidence, including possible alternative causes outside the intervention. The validity of contribution claims is tested by analyzing evidence and estimating the level of confidence in the claims using Bayesian updating. The 2023 Independent Evaluation Department Evaluation of ADB Support for the Central Asia Regional Economic Cooperation Program provided a detailed description of contribution tracing methodology.² This appendix provides a summary of the contribution claim and its supporting evidence, as well as an estimation of the level of confidence in the claim. The confidence level is estimated at 98.4%, suggesting a high confidence in the validity of the claim.

3. **Contribution claim.** ADB through South Asia Subregional Economic Cooperation (SASEC) has made a valuable contribution to significantly improved energy connectivity between India and Bangladesh.

**Table A3: Bangladesh-India Electrical Grid Interconnection Projects
Contribution-Tracing Assessment of Evidence**

Evidence		Values of Sensitivity, Type I Error, and Posterior Confidence in the Claim ^a
Platform	Evidence 1.1. SASEC provided a platform that led to bilateral dialogue and cooperation between the two countries. While the Bangladesh–India interconnection was not a specific agenda item for analysis and discussion at the SASEC-sponsored EWG meetings, the EWG provided an opportunity for informal but important discussions on the side of the meetings between senior energy technical personnel from India and Bangladesh. These informal meetings were the precursor of the joint steering committee, joint working group, and joint technical team which were created by the memorandum of understanding between India and Bangladesh. These groups were established to review and enhance bilateral cooperation in the power sector. The cooperative governance structure put in place by both governments has been a key enabler of the success of the projects.	S 0.50 T1E 0.80 Post 38%
Technical support	Evidence 2.1. SASEC's positive engagement accelerated the identification and formulation of the specific Bangladesh–India electrical	S 0.99 T1E 0.10 Post 91%

¹ ADB. 2016. *Completion Report: Bangladesh-India Electrical Grid Interconnection Project in Bangladesh*; and IED. 2017. *Validation Report: Bangladesh-India Electrical Grid Interconnection Project in Bangladesh*.

² IED. 2023. *Thematic Evaluation Study: Evaluation of ADB Support for the Central Asia Regional Economic Cooperation Program, 2011–2021*. Appendix 6. ADB.

Evidence		Values of Sensitivity, Type I Error, and Posterior Confidence in the Claim ^a
	grid interconnection investment opportunity through its early Knowledge and Support TA. ADB through SASEC provided financing for the \$225,000 Bangladesh–India Electrical Grid Interconnection Project TA approved in June 2010. This project advised the Bangladesh Power Development Board on cross-border power purchase contracts and built the capacity of Bangladesh Power Development Board staff in power procurement from India, leading to the development of interconnection, operation and power purchase agreements between Bangladesh and India. Specifically, the TA successfully provided the following outputs: (i) development of interconnection, operation and power purchase agreements between Bangladesh and India, (ii) selection of a supplier of up to 250 MW of power on competitive basis from India, (iii) capacity development for the planning, development, operation, maintenance and regulation of interconnections and power trading, and (iv) an ADB loan project in accordance with the ADB Safeguard Policy Statement.	
Financing support	Evidence 3.1. By rapidly offering financing for the investment, ADB enabled the project to move quickly from concept to approval. It is likely that the projects would have eventually materialized even without the engagement of ADB and SASEC, since Bangladesh’s growing electricity crisis and rising power purchase costs, coupled with a high-level political desire for cooperation in the energy sphere, were powerful motivating forces. However, without ADB financing, it is unlikely that financing from other sources could have been mobilized as rapidly.	S 0.90 T1E 0.10 Post 90%
Pioneering demonstration	Evidence 4.1. Countries believe that ADB through SASEC played an important and pioneering role in shepherding the emergence of an appropriate project design and in rapidly transforming a high-level political agreement into functioning infrastructure. Through the two Bangladesh–India electrical grid interconnection projects, ADB pioneered energy connectivity and trade in the subregion. The initial 500 kV high-voltage, direct current line, which was put into service in October 2013, was the first international transmission line in South Asia. The projects gave a powerful demonstration of the practical feasibility of the power trade. ADB was the first and remains the only development partner to provide this type of support.	S 0.90 T1E 0.80 Post 53%
Replication	Evidence 5.1. The momentum for expanded regional electricity trade was maintained through SASEC’s role as the organizer, sponsor, and technical advisor of the South Asia Transmission Master Plan, which identified potential cross-border interconnections and associated benefits. This strengthened the justification for the second Bangladesh–India interconnection project. The master plan was formulated in discussions with the participating countries under a \$500,000 regional capacity development TA project, SASEC Cross-Border Power Trade Development, approved in February 2014 with the aim of improving the planning and coordination capacity of SASEC countries to foster cross-border power trading. The plan was completed in 2016 and has been regularly updated under succeeding ADB SASEC regional energy TA projects. The recommended priority connection infrastructure investments thus became topics for review and discussion at SASEC-sponsored regional energy forums.	S 0.75 T1E 0.90 Post 45%
	Evidence 5.2. The successful operation of the ADB-supported Bangladesh–India electrical grid interconnection established the institutions and capacity for greater energy cooperation between India and Bangladesh. ADB’s support for the first 1,000 MW interconnection	S 0.90 T1E 0.75 Post 55%

Evidence		Values of Sensitivity, Type I Error, and Posterior Confidence in the Claim ^a
	<p>was a significant contribution to connectivity in its own right. The capacity is fully utilized except during periods of low national power demand (annual load factors average 80%–90%) Since these two pioneering investments, two further Bangladesh interconnections with India have been implemented: a 160 MW import from Tripura (implemented in 2016 under India–Bangladesh bilateral cooperation) feeding an isolated and underserved area near the Cumilla border, and a new privately financed 1,496 MW import scheme from the Adani Godda coal power plant (power flows began in 2023 under a bilateral agreement), bringing total imports to 2,656 MW. Before the ADB SASEC high-voltage, direct current interconnection projects there were no electricity trading relationships between India and Bangladesh. The ADB SASEC projects and associated TA motivated India and Bangladesh to establish the joint steering committee, joint working group, and joint technical team that have defined the pricing, contracting and technical operating parameters for electricity exchange between the two countries. This body of expertise and practice was an essential prior condition for the design and implementation of the follow-on projects.</p>	

ADB = Asian Development Bank, EWG = Energy Working Group, kV = kilovolt, MW = megawatt, SASEC = South Asia Subregional Economic Cooperation, TA = technical assistance, Post = posterior confidence, S = sensitivity, T1E = type I error.

^a From a prior of 0.5.

Source: ADB (Internal Evaluation Department).

APPENDIX 4: DECOMPOSITION ANALYSIS OF BILATERAL TRADE FOR TOTAL TRADING COSTS

A. Introduction

1. This appendix analyses trading costs in South Asia Subregional Economic Cooperation (SASEC) by focusing on the bilateral trade of two countries, India and Bangladesh, with the other SASEC countries.¹ These two countries account for almost 97% of SASEC's gross domestic product (GDP), excluding Myanmar, of which India's share is 85%.² Bangladesh's share is 12%. Sri Lanka (1.9%), Nepal (1%), Bhutan (0.06%), and Maldives (0.16%) account for the rest. Countries in the SASEC region have broadly enjoyed strong growth over the past two decades, along with increased trade volumes. However, the share of intra-subregional trade to total trade of the SASEC member countries has remained unchanged at about 5%, a much lower level than for other subregional groupings. The gravity model of international trade, which links trade volumes to incomes of trading countries and costs of trading, provides a convenient way to disentangle the extent to which growth in trade volumes in the region is accounted for by changes in incomes and therefore provides an assessment of changes in costs of trading.

B. Methodology

2. The analysis here is based on the gravity model of trade that, in its simplest form, explains bilateral trade between any two pairs of countries in terms of their relative GDP sizes and the costs of trade between them. A broader version also incorporates a third factor in terms of costs of trading with other countries (multilateral trade barriers). Specifically, the framework draws upon the multi-country general equilibrium model of international trade by Anderson and van Wincoop³ and its application by Novy.⁴ When a good is shipped from country i to country j , bilateral transportation costs and other variable trade barriers drive the cost of each unit shipped. Thus, if p_i is the net supply price of a good originating in country i , the price of the good for consumers in country j is $p_j = p_i t_{ij}$, where $t_{ij} > 1$ is the gross bilateral trade cost factor (one plus the tariff equivalent). The micro-founded gravity equation derived by Anderson and van Wincoop is:

$$X_{ij} = \frac{y_i y_j}{Y^w} \left(\frac{t_{ij}}{\pi_i p_j} \right)^{1-\sigma}$$

where X_{ij} is the nominal export from country i to country j , y_i and y_j are respective nominal incomes of the two countries, Y^w is the world income and $\sigma > 1$ is the elasticity of substitution across consumption preferences. π_i and p_j are the respective price indices in the two countries. Using the symmetric expression for exports from country j to country i in the equation above and multiplying the two exports (from i to j and j to i) gives the bi-directional gravity equation as:

$$X_{ij} X_{ji} = \left(\frac{y_i y_j}{Y^w} \right)^2 \left(\frac{t_{ij}}{\pi_i p_j} \frac{t_{ji}}{\pi_j p_i} \right)^{1-\sigma}$$

¹ Myanmar is excluded from the analysis since it joined SASEC only in the later part of the evaluation period, in 2017. Trade to and from Myanmar has been disrupted by the COVID-19 pandemic and by political developments.

² World Bank. [GDP Indicator](#).

³ J. Anderson and E. van Wincoop. 2003. Gravity with Gravitas: A Solution to the Border Puzzle. *American Economic Review*. 93. pp. 170-192.

⁴ D. Novy. 2013. Gravity Redux: Measuring international trade costs with panel data. *Economic Inquiry*. 51. 1. pp. 101-121.

3. Defining t_{ii} as cost of trading within the country i , Novy derives a measure of total trading costs of bilateral trade relative to domestic trade costs as:

$$\tau_{ij} = \left(\frac{t_{ij}t_{ji}}{t_{ii}t_{jj}} \right)^{1/2} - 1 = \left(\frac{X_{ii}X_{jj}}{X_{ij}X_{ji}} \right)^{\frac{1}{2(\sigma-1)}} - 1$$

where τ_{ij} measures bilateral trade costs ($t_{ij}t_{ji}$) relative to the domestic trade costs ($t_{ii}t_{jj}$) and captures what makes international trade more costly over and above domestic trade. If bilateral trade flows ($X_{ij}X_{ji}$) increase relative to domestic trade flows ($X_{ii}X_{jj}$), it must be because it is becoming easier for the countries to trade with each other relative to domestically, implying a reduction in τ_{ij} . This measure captures bilateral trade costs indirectly by inferring them from observable trade flows.

4. Novy further shows that the percentage change in bilateral trade flows, $\Delta \ln (X_{ij}X_{ji})$, can be decomposed into three terms as follows:

$\Delta \ln (X_{ij}X_{ji}) = A + B - C$ where:

$A = 2 \Delta \ln \left(\frac{y_i y_j}{y^w} \right)$ is the contribution of income growth to the growth in bilateral trade;

$B = \Delta \ln (X_{ij}X_{ji}) - \Delta \ln (X_{ii}X_{jj})$ is the contribution of relative decline in bilateral trade costs to the growth in bilateral trade; and,

$C = \Delta \ln \left(\frac{y_i/y^w}{(X_{ii}/y_i)} \right) + \Delta \ln \left(\frac{y_j/y^w}{(X_{jj}/y_j)} \right)$ is the (negative) contribution of decline in relative multilateral resistance to the growth in bilateral trade.

5. Thus, if relative trade barriers are constant over time ($B=C=0$), then growth in trade would be driven by income growth. But if bilateral trading costs fall, then the contribution of B becomes positive. Finally, if multilateral trade barriers fall (and C increases), trade with other countries becomes easier and increases, diverting away from bilateral trade between i and j .

6. Note that there is no estimation involved here, only a decomposition of bilateral trade growth. The calculated values of A , B and C above are divided by $\Delta \ln (X_{ij}X_{ji})$, which provides the percentage share of each component (i.e., changes in income growth, bilateral trade costs, and multilateral resistance respectively) in the total change in bilateral trade volumes (i.e., 100%). Specifically, denoting $\Delta \ln (X_{ij}X_{ji})$ by Z , we have:

$$100\% = A/Z + B/Z - C/Z$$

7. As before, if B and C do not change (are zero), all change in trade is accounted for by change in the incomes of the two countries. A share exceeding 100% for A would indicate some increase in trade costs (or a negative second term) and/or some diversion away from bilateral trade (third term). Bilateral trade between the two countries would have been expected to increase more than it did but did not due to the other two factors: bilateral trade costs and multilateral resistance effects.

8. The analysis below uses data from the International Monetary Fund's Direction of Trade Statistics and the World Bank's World Development Indicators. Exports are denominated in nominal \$ terms and exclude services. The GDP figures exclude services and include only agriculture, mining, and manufacturing. Total intranational (or domestic) trade is calculated as the difference between the country's income and all exports.

C. Results

9. The gravity framework was used to undertake a decomposition of the changes in bilateral trade volumes to estimate bilateral trade costs. The results are presented in Table A4.1 for India, the largest economy in SASEC. The exercise was done for two periods, 2002–2012 and 2012–2022. A comparison of these two periods would indicate changes in the relative role of bilateral trade costs in SASEC region for India with rest of the SASEC countries after 2012, when SASEC trade facilitation loans and related technical assistance projects were implemented. Results for Bangladesh are also presented for the same two periods.

10. The growth in bilateral trade is decomposed into the three components noted earlier: (i) the contribution of income growth, (ii) the contribution of decline in relative bilateral trade costs, and (iii) the contribution of the decline in relative multilateral trade barriers. Bilateral trade costs are relative to domestic trade (i.e., the amount by which bilateral trade costs exceed costs of domestic trade) and are a broad measure of the tariff equivalent cost inclusive of all factors increasing the costs of trading (e.g., tariffs, non-tariff measures, cultural factors, and physical distance).

11. If trade costs fall, the contribution to growth in trade becomes positive, while an increase in trade costs leads to a negative contribution. Similarly, if relative multilateral trade barriers fall, the contribution to trade growth becomes negative, which is almost a trade diversion effect (if trade barriers with other countries fall, trade with those countries increases while bilateral trade between the country pair decreases).

12. The first three rows show the decomposition of bilateral trade growth between India and three large trading partners: United States, the People's Republic of China (PRC), and United Kingdom. For the India–United States pair, bilateral trade grew by 257% during 2002–2012, of which nearly half (49.8%) is explained by GDP growth of the two countries. The decline in bilateral trade costs in this period accounts for 59.3% of the trade growth, which was offset by a 9% reduction due to a decline in trading costs with other countries. Similarly, declining bilateral trade costs contributed 46.9% of the growth in trade between India and the PRC and 46.1% of the growth in trade between India and the United Kingdom.

13. The period 2002–2012 showed generally declining trade costs in the SASEC region, at least in terms of bilateral trade between the largest economy, India, and the other SASEC countries. For bilateral trade between India and Bangladesh, the two largest SASEC economies, a decline in trade costs contributed 57.8% to the growth in trade (407%). The contribution of declining trade costs was even higher for growth in India–Bhutan trade at 70.8%, and less, but still significant, for growth in India's bilateral trade with Maldives (35.9%) and Nepal (15.2%). The contribution of bilateral trade costs to growth of India–Sri Lanka trade was negative, indicating increased costs for trading with Sri Lanka during this period. The relatively high values for the multilateral resistance (trade diversion) component for the SASEC countries could reflect the growing role of the PRC as trade partner in the SASEC region.

14. Table A4.2 shows the decomposition of growth in bilateral trade between India and the same countries for the next decade, 2012–2022.⁵ A few interesting features stand out in the comparison between the two time periods. First, the growth in trade was much less in 2012–2022 than in the previous decade. This may reflect slower growth in India and in partner countries. Second, India's bilateral trade with the PRC grew by 94%, despite increased frictions between the two countries. Much of this growth is explained by increased incomes of the two countries, while the higher frictions are reflected in negative share of trading costs, indicating an increase in the trade costs between India and the PRC. The increased

⁵ The decomposition analysis was also done for the period 2012–2019, before the start of the COVID-19 pandemic, with similar results (e.g. the decline in share of lower trading costs after 2012, and the small share of trading costs decline in explaining growth in India-Bangladesh trade after 2012 compared to other bilateral pairs). The findings are thus reported for the longer period of 2012–2022.

values of the third term (multilateral resistance or trade diversion) for SASEC countries may also reflect the continued importance of the PRC as trading partner in the region.

**Table A4.1: Decomposition of India's Bilateral Trade Growth
Between 2002–2012 with Selected Countries**

Countries	Contribution of:				Total = A+B-C
	Growth in Trade (%)	(A) Growth in Income	(B) Decline in Bilateral Trade Costs (+)	(C) Decline in Relative Multilateral Resistance (-)	
US	257	49.8	59.3	9.0	100
PRC	666	82.9	46.9	29.8	100
UK	125	66.6	46.1	12.7	100
Bangladesh	235	61.2	57.8	19.0	100
Bhutan	707	55.3	70.8	26.1	100
Nepal	294	110.5	15.2	25.8	100
Sri Lanka	225	137.2	(15.7)	21.5	100
Maldives ^a	214	78.2	35.9	14.1	100

IED = Independent Evaluation Department, PRC = People's Republic of China, UK = United Kingdom, US = United States.

^a Range for Maldives starts from 2003.

Source: IED estimates based on International Monetary Fund. [Direction of Trade Statistics](#) (accessed 12 April 2024) and World Bank. [World Development Indicators](#) (accessed 13 April 2024).

**Table A4.2: Decomposition of India's Bilateral Trade Growth
Between 2012–2022 with Selected Countries**

Countries	Contribution of:				Total = A+B-C
	Growth in Trade (%)	(A) Growth in Income	(B) Decline in Bilateral Trade Costs (+)	(C) Decline in Relative Multilateral Resistance (-)	
US	97	95.4	21.8	17.0	100
PRC	94	190.9	(37.6)	53.2	100
UK	31	95.6	8.7	4.2	100
Bangladesh	131	141.1	3.8	44.9	100
Bhutan	126	64.7	50.6	15.2	100
Nepal	115	112.8	18.3	31.1	100
Sri Lanka	53	65.9	68.3	34.2	100
Maldives	303	101.7	25.2	26.9	100

IED = Independent Evaluation Department. PRC = People's Republic of China, UK = United Kingdom, US = United States.

Source: IED estimates based on International Monetary Fund. [Direction of Trade Statistics](#) (accessed 12 April 2024) and World Bank. [World Development Indicators](#) (accessed 13 April 2024).

15. The share of bilateral trading costs in trade growth was positive for all SASEC countries during 2012–2022, indicating a reduction in cumulative bilateral costs in each case. A modest exception is India–Bangladesh trade, where the contribution of a decline in costs to growth in trade was less than 4%. On the whole, costs of bilateral trade between India, the largest economy in SASEC, and the other SASEC countries (excluding sanctions-affected Myanmar) declined during 2012–2022.

16. It is worth pointing out that, despite that the decline in trading costs, the costs may still be high. The low share of intra-SASEC trade in total trade by SASEC countries indicates that trading costs are still high, preventing further gains from trade in the region from being realized. Another indicator of high costs is the low levels of land-based transit trade between Bhutan, Bangladesh, and Nepal. Bilateral trade between Bangladesh and Bhutan declined 56.7% between 2012 and 2023, while trade between Bangladesh and Nepal remained virtually static, growing by 5.7% during the decade.

17. Tables A4.3 and A4.4 show results for a similar decomposition of bilateral trade growth for Bangladesh during the same two periods: 2002–2012 and 2012–2022. Like India, Bangladesh shows high rates of growth in trade with major partners and with SASEC countries, although it should be noted that its trade volumes with Bhutan and Nepal started from a low base, resulting in high percentage growth for both. GDP growth accounts for at least half the growth in trade with other SASEC countries in this period, which is comparable with the contribution of the decrease in overall trading costs, except for trade with Sri Lanka where GDP growth accounted for almost 75% of the increase in trade volume.

**Table A4.3: Decomposition of Bangladesh's Bilateral Trade Growth
Between 2002–2012 with Selected Countries**

Countries	Contribution of:				Total = A+B-C
	Growth in Trade (%)	(A) Growth in Income	(B) Decline in Bilateral Trade Costs (+)	(C) Decline in Relative Multilateral Resistance (-)	
US	137	45.9	49.7	(4.4)	100
PRC	667	65.0	57.2	22.2	100
UK	228	38.6	58.1	(3.4)	100
India	373	61.2	57.8	19.0	100
Bhutan	1205	51.2	73.4	24.7	100
Nepal	701	57.0	52.4	9.4	100
Sri Lanka	541	74.6	31.9	6.5	100
Maldives ^a					

IED = Independent Evaluation Department, PRC = People's Republic of China, UK = United Kingdom, US = United States.

^aNo data available.

Source: IED estimates based on International Monetary Fund. [Direction of Trade Statistics](#) (accessed 12 April 2024) and World Bank. [World Development Indicators](#) (accessed 13 April 2024).

18. In parallel with India again, during the period 2012–2022 growth in Bangladesh's trade slowed with all its major trading partners, including the PRC, and SASEC countries. Also, like India's trade with the PRC during this period, Bangladesh's trade showed a negative share of decreasing trade costs, suggesting trade costs increased during this period.

19. The decomposition of the three components in the rise of India–Bangladesh trade is symmetrical in Tables A4.3 and A4.4 to the decomposition in Tables A4.1 and A4.2, as would be expected. The higher

contribution of lower trading costs in the bilateral trade between Bangladesh and Sri Lanka reflects the active engagement of SASEC with port development in Bangladesh, including customs modernization and strengthening focused on the major port in Chattogram.

**Table A4.4: Decomposition of Bangladesh's Bilateral Trade Growth
Between 2012–2022 with Selected Countries**

Countries	Contribution of:				Total = A+B-C
	Growth in Trade (%)	(A) Growth in Income	(B) Decline in Bilateral Trade Costs (+)	(C) Decline in Relative Multilateral Resistance (-)	
US	198	114.3	18.7	34.7	98.3
PRC	230	174.7	(16.8)	57.9	100.0
UK	55	89.7	35.3	25.0	100.0
India	184	141.1	3.8	44.9	100.0
Bhutan	(57)	(228.7)	255.1	(77.3)	103.7
Nepal	6	(303.0)	302.6	(100.4)	100.0
Sri Lanka	258	86.5	51.0	37.5	100.0
Maldives ^a					

IED = Independent Evaluation Department, PRC = People's Republic of China, UK = United Kingdom, US = United States.

^a No data available.

Source: IED estimates based on International Monetary Fund. [Direction of Trade Statistics](#) (accessed 12 April 2024) and World Bank. [World Development Indicators](#) (accessed 13 April 2024).

20. The table highlights the poor performance of transit trade in SASEC in the previous decade, reflected in the figures for Bangladesh's trade with Bhutan, which declined, and with Nepal, which remained almost unchanged between 2012 and 2022. The negative or close to zero growth in trade volume after 2012, on already low base values of trade between Bangladesh and landlocked Nepal and Bhutan, reflects challenges to transit trade in the SASEC region. The large negative share for income growth and multilateral resistance shares for Bhutan and Nepal in Table A4.4 are attributable to the negative or close to zero growth in trade for these pairs of trading partners (resulting in very small or negative value of denominator in calculating the ratios for the decomposition in the table).

21. To summarize, the decomposition of trade costs for the two largest economies in SASEC, India and Bangladesh, showed robust growth in the region before 2012, driven by both income growth and reductions in trade costs. The second period, after 2012, saw a decline in trade growth for both countries, with almost no growth or negative growth in transit trade for Bangladesh with Nepal and Bhutan. Trading costs between the two largest SASEC economies did not make a significant contribution to increased trade (less than 4%), but there is no evidence of worsening trade costs (with a negative impact on trade) for any countries (with the exception for transit trade that has been noted). For India, in particular, the decline in trade costs contributed 18%–68% of the increase in trade with SASEC countries excluding Bangladesh. For intra-SASEC trade therefore, the 2012–2022 period may be characterized as reflecting an improvement in comprehensive trade costs in the region (unlike the trade of both India and Bangladesh with the PRC, where trade costs appear to have increased). Since the decomposition exercise does not provide estimates of the level of trading costs, it is possible that the decline in trade costs may co-exist with high costs of trading in the region. This likelihood is also suggested by the fact that the share of intra-regional trade to total trade did not increase, suggesting considerable room for improving trade facilitation in SASEC in future.

APPENDIX 5: CONCEPTUAL FRAMEWORK OF REGIONAL PUBLIC GOODS

1. Since 2008, the global economy has been hit by four massive shocks: the global financial crisis of 2008–2009, the coronavirus disease pandemic, the Russian invasion of Ukraine (and other regional armed conflicts), and rising temperatures because of climate change. In all these cases, global and regional disasters occurred because of an inadequate provision of global or regional public goods. Just as national governments supply national public goods, it is the role of regional and international organizations to support efforts to supply regional and global public goods, to prevent these kinds of events from occurring.

A. What are Public Goods?

2. Paul Samuelson has been credited with having introduced the theory of public goods to modern economics.¹ He defined a “collective consumption good” as a good that “all enjoy in common in the sense that each individual’s consumption of such a good leads to no subtractions from any other individual’s consumption of that good.” In the literature on public finance, this characteristic of a public good is referred to as nonrivalry. A good is rivalrous if one individual’s consumption of it diminishes others’ ability to consume it. Food is rivalrous; listening to music is not.

Table A5.1: Matrix of Characteristics of Public Goods

Excludable or Non-excludable	Rivalrous or non-rivalrous	
	Rivalrous	Non-rivalrous
Excludable	Private goods such as food, clothing, mobile phone	Club goods such as gym membership or going to the movies
Non-excludable	Commons resource goods such as natural or manufactured resources, fish stocks, forest for timber, water for irrigation	Public goods such as fire protection (local public good), national defense (national public good), elimination of a communicable disease (regional public good), climate mitigation measures (global public good)

Source: E. Ostrom. 2003. How Types of Goods and Property Rights Jointly Affect Collective Action. *Journal of Theoretical Politics*. 15(3), 239–270.

3. Table A5.1 shows that public goods are goods that are available to all (non-excludable) and can be enjoyed repeatedly by anyone without diminishing the benefits they deliver to others (nonrivalrous).² Their scope can be local, national, regional, or global. Public fireworks are a local public good, as anyone within eyeshot can enjoy the show. National defense is a national public good, because everyone in a country benefits from the protection it provides. Global public goods (GPGs), such as climate mitigation protocols, benefit everyone in the world (even if they may also impose costs on some).

4. Some goods (such as fish stocks) are rivalrous but non-excludable; such goods are called “common pool resources” (Table A5.2).³ Some goods (such as watching a movie in a theater or

¹ P. Samuelson. 1954. The Pure Theory of Public Expenditure. *Review of Economics and Statistics*. 11. pp. 387–389; J. Stiglitz. 1995. International Public Goods and Globalization: A Conceptual Framework. *International Public Goods*. pp. 1–18; T. Sandler. 1997. Global and Regional Public Goods: A Prognosis for Collective Action. *Fiscal Studies*. 18 (3). pp. 237–251; I. Kaul et al. 1999. Global Public Goods: International Cooperation in the 21st Century. *Oxford University Press*.

² Musgrave introduced the criterion of non-excludability. A good is excludable if and only if it is possible to prevent individuals from consuming it. Land, for example, is excludable; moonlight is not. R.A. Musgrave. 1959. *The Theory of Public Finance*. McGraw Hill, New York.

³ “The commons” refer to cultural and natural resources that are accessible to all members of a society, including natural materials such as air, water, and a habitable Earth. Ostrom suggests defining the commons as natural or manufactured resources from which it is difficult to exclude or limit users once the resource is provided and for which one person’s consumption of resource units makes those units unavailable to others. E. Ostrom. 1994. Neither market nor state: Governance of common-pool resources in the twenty-first century. *International Food Policy Research Institute*. Washington, DC; E. Ostrom. 2003. How Types of Goods and Property Rights Jointly Affect Collective Action. *Journal of Theoretical Politics*. 15(3). pp. 239–270.

consuming services provided by social, political, or religious associations that require membership) are nonrivalrous but excludable; such goods are called “club goods”.⁴

Table A5.2: Types of Public Goods

Geographical Scope	Pure Public Goods	Club Goods	Joint Products
National (within national borders)	National parks, street lighting, police protection	Cable television; streaming services	Education
Regional (cross-border)	Watershed management; reduction in air pollution; flood protection within a river basin; elimination of communicable diseases, such as malaria, in a region; regional security and peacekeeping	Free trade agreements	Peacekeeping
Global (worldwide)	Prevention of global warming, pandemics, wars, and cross-border conflicts	Universal postal union	Foreign aid

Source: T. Sandler. 2006. Regional Public Goods and International Organizations. *Review of International Organizations*. 1 (1). pp. 5–25.

5. Public goods may be national, international, regional, or global. International public goods are shared by several countries. GPGs, such as protection of the ozone layer, are available to everyone in the world. They can be defined as “issues that are broadly conceived as important to the international community, that for the most part cannot or will not be adequately addressed by individual countries acting alone and that are defined through a broad international consensus or a legitimate process of decision-making.”⁵

6. Regional public goods (RPGs) are public goods whose benefits cross national boundaries but are limited largely to the countries directly involved in the good’s provision and consumption. Addressing pandemics, adaptation to climate change, flood protection, and transboundary air pollution are among the most prevalent regional public goods.

B. Definitions of Regional Public Goods by Multilateral Development Banks

7. As development challenges have become more transnational, they require regional and global responses. The need to address these challenges underscores the increasingly crucial role played by multilateral development banks (MDBs)—including the African Development Bank, ADB, Asian Infrastructure Investment Bank, Caribbean Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank, New Development Bank, and the World Bank—and regional organizations—including the Association of Southeast Asian Nations, Caribbean Community, European Union (EU), South Asian Association for Regional Cooperation, Common Market of South America, and the Southern African Development Community—all of which provide some type of financing, policy advice, and capacity-building and technical assistance and encourage cooperation and knowledge sharing associated with RPGs.

8. MDBs, including ADB, define RPGs as public goods that are both non-excludable and non-rivalrous. That is, no consumer can be excluded from consumption of a public good, either through price mechanisms or physical controls (non-excludable). The consumption of a public good by one entity does not diminish its availability for use by others. When the domain of a public good relates to

⁴ J. Buchanan. 1965. Theory of Clubs. *Economica*. February. 1–14; T. Sandler and J.T. Tschirhart. 1997. Club Theory: Thirty Years Later. *Public Choice*. 93. pp. 335–355.

⁵ International Task Force on Global Public Goods. 2006. [Meeting Global Challenges: International Cooperation in the National Interest](#).

consumers in a defined region comprising several countries, those goods are termed RPGs.⁶ Benefits of RPGs extend beyond a single country's territory to a well-defined region, and those benefits are shared by a group of countries in the same region in a non-rivalrous and non-excludable manner.

9. In some areas, such as climate change and control of communicable diseases, GPGs and RPGs are closely linked. In most cases, however, they have different drivers and jurisdictions. For GPGs, the main driving force is globalization; for RPGs, the main driving force is regionalism, which stems from increased regional cross-border flows of goods, services, investments, and people.

10. There is considerable potential for MDBs to expand their engagement, in a collaborative manner, at the regional level. Regional involvement is likely to take the form of a relevant strategy and operational approach for many countries in addressing pandemics, tuberculosis, HIV/AIDS, and malaria; the management of shared water resources; infrastructure for trade; adaptation to climate change; transboundary air pollution and the transition toward clean energy; and the protection of common exhaustible resources.

11. Nevertheless, providing RPGs is often more difficult than providing GPGs, for several reasons:

- (i) Some regions lack a dominant country that could take the lead.
- (ii) In other regions, the presence of a dominant country may hinder cooperation, because of political economy factors.
- (iii) Countries and actors within regions may be prone to rivalry and local disagreements that reduce the scope for collaboration.
- (iv) Donors have traditionally relied on global and national institutions, rather than regional institutions, to provide public goods.

C. Measuring Contributions to Global and Regional Public Goods

12. The technology of aggregation indicates how countries' contributions toward a GPG or RPG determine the overall level of the public good available for consumption or use. Aggregator technologies are critical for understanding GPGs and RPGs. Because they are integrally connected to the underlying coordination and game structure that characterizes GPGs and RPGs, they greatly affect the provision of a public good as well as the nature of policies to address potential under-provision.

13. A variety of approaches are used. Under a "summation approach"—which in the case of climate change is used to measure the aggregate level greenhouse gas emissions, for example—a country's provision is a perfect substitute for the contributions of other countries, which encourages free-riding and under-provision, which is one of the reasons it is so difficult to address climate change in the absence of a regulatory authority.⁷

14. In a "weighted-sum aggregator," each country's provision is assigned an empirically determined weight; all countries' provisions are then summed to determine the total level of the public good available for use or consumption by a recipient country. These weights may depend on spatial or locational factors, such as prevailing winds for airborne pollutants. Weighted-sum aggregators have been used to reduce acid rain and ambient pollutants. Such aggregations may also be appropriate to

⁶ K. Moinuddin. 2012. The Provision of Regional Public Goods in South Asia. In S.H. Rahman et al., eds. *Regional Integration and Economic Development in South Asia*. EE Pubs. However, this definition is somewhat problematic since it is difficult to precisely define a "region" as the political jurisdiction may significantly differ from the area that is of direct relevance to each public good (given the potential for spillover effects and appropriate aggregation technology). For the same reasons, it is often difficult to distinguish a priori between GPGs and regional public goods. A. Estevadeordal and L. Goodman. 2017. *21st-Century Cooperation, Regional Public Goods, and Sustainable Development*. Taylor and Francis. pp. 3–13.

⁷ J. Hirshleifer. 1983. From Weakest-Link to Best-Shot: The Voluntary Provision of Public Goods. *Public Choice*. 41. pp. 371–386; and R. Cornes and T. Sandler. 1984. Easy Riders, Joint Production, and Public Goods. *Economic Journal*. 94 (375). 580–98. indicate that individual contributions to a public good may have to be transformed by some function to reveal the amount available for consumption. In his seminal article, Hirshleifer refers to the aggregator technology as a "social composition function."

the spread of a communicable outbreak because preventive measures may be location sensitive. The location of regional or international infrastructure, such as a network of canals and waterways, differentially affects countries' ease of passage. In a weighted-sum aggregation, the degree of substitutability varies; negotiation and strategic posturing of the countries involved can affect it.

15. In a "weakest-link aggregator," the smallest country's contribution determines the aggregate level of the public good. In controlling a communicable disease outbreak, for example, the prevention effort is only as good as the weakest effort.

16. A less extreme form of the weakest link is a "weaker link aggregator." In this approach, the smallest contribution has the greatest influence on the public good's aggregate level, followed by the second-smallest contribution and so on.⁸ An example is actions that prevent the spread of financial instability or the diffusion of a pest, where efforts beyond the smallest have an influence on the level of the public good. According to Sandler, and Buccholz and Sander, weakest-link public goods result in matching contributions, because provision beyond the smallest contribution has no effect. But for weaker-link public goods, there is less need for matching behavior to provide assurance.⁹

17. The "threshold aggregator" requires that overall provision of a public good meets or surpasses some predefined level before benefits are generated. For example, establishment of an early-warning system for earthquake-related tsunamis requires a threshold grid of sensors to provide reasonable protection. Threshold public goods (at the regional or the global level) are usually associated with a coordination strategy approach in which a leader with authority plays a role in attaining the required effort level.¹⁰

18. A "best-shot" GPG or RPG depends entirely on the largest contribution by one country; additional efforts by other countries would be redundant (an example is the shooting down of a comet or the discovery of a cure to a disease). For best-shot GPGs and RPGs, participating countries must coordinate their actions by facilitating efforts by the best-qualified and equipped country.

19. In the "better-shot aggregator," the largest contribution by a country has the greatest influence on the GPGs' or RPGs' overall level of provision, followed by the second-largest contribution, and so on. Examples include uncovering a treatment regime for an illness, where second-best regimes may be better tolerated by some patients, and efforts to limit drug trafficking.

20. Among the various aggregator technologies listed above, summation (mitigating climate change, preserving biodiversity), weighted summation (controlling or preventing spread of communicable diseases), best-shot (making a scientific breakthrough), eliminating dangers posed by a rogue country, diverting a comet heading toward Earth), and weakest-link (maintaining functionality or integrity of global network/system) are of direct relevance to the most important challenges currently facing emerging market and developing economies.

21. Finally, it is important to emphasize that any decision on investments for the provision of GPGs or RPGs should be based on a careful cost-benefit analysis. Comparing the relatively small estimated costs of mitigation or avoidance of potential harms that could arise from inadequate provision of GPGs or RPGs for mitigating climate change, preserving biodiversity, avoiding pandemics and preventing financial instability to the estimated large potential benefits of adequate provision of the relevant GPGs

⁸ R. Cornes. 1993. Dyke Maintenance and Other Stories: Some Neglected Types of Public Goods. *Quarterly Journal of Economics*. 108 (1). p. 25.

⁹ T. Sandler. 2006. Regional Public Goods and International Organizations. *Review of International Organizations*. 1 (1). pp. 5–25; W. Buchholz and T. Sandler. 2021. Global Public Goods: A Survey. *Journal of Economic Literature*. 59 (2). pp. 488–545.

¹⁰ T. Sandler. 1998. Global and Regional Public Goods: A Prognosis for Collective Action. *Fiscal Studies*. 19 (3). pp. 221–247; W. Buchholz and T. Sandler. 2021. Global Public Goods: A Survey. *Journal of Economic Literature*. 59 (2). pp. 488–545.

makes it clear that the expected returns to investments in the provision of each GPG are positive and large.¹¹

D. Recent Literature on Global and Regional Public Goods

22. Estevadeordal and Goodman, Evans and Davies, Kaul, and Buchholz and Sandler review the literature on global and regional public goods up to 2019.¹² For literature published since then, a search for relevant literature was conducted on Google Scholar using the search string “public good” and (global or international or regional). About 230 books and articles resulted from this search for 2019–February 2024. Of these, about 100 items were found to be particularly relevant to GPGs and RPGs. Most of the items published in 2020–2024 were in the health sector and related to the coronavirus disease pandemic. The rest were related mainly to the environment, climate change, education, and infrastructure.¹³

23. Recent literature assigns GPGs and RPGs to one or more categories. The most frequently referenced categories are the following:

- (i) knowledge, including the provision of information, the publication of analyses of that information, scientific research and development, and policy dialogue;
- (ii) health, including the prevention or eradication of diseases and slowing of the spread of epidemics;
- (iii) education, including training and policy dialogue;
- (iv) environment and climate mitigation and adaptation, including measures to prevent, reduce, and clean up pollution;
- (v) peace and security and fragility, including shared responsibility for providing security in areas of common concern;
- (vi) governance and institutions (of direct relevance to each of the categories listed here), including the establishment and implementation of shared standards, best practices, and policy regimes, including regimes to address cross-border problems, and the creation of networks of regulatory agencies; and
- (vii) infrastructure, including cross-border transport, energy, and information and communications technology, including cross-border e-commerce.¹⁴

24. Buchholz and Sandler investigate the increasing importance of GPGs and RPGs in the context of globalization and increased interdependencies, which they believe are driven by growing cross-border externalities and public good spillovers.¹⁵ They identify new technologies, globalization, and increases in population in developing countries as the main drivers of the rise of GPGs (and RPGs in many instances), particularly public goods dealing with climate change, international regulatory practices, eradication of communicable diseases, the pursuit of world peace, scientific breakthroughs, and the prevention of financial crises.

¹¹ Oxford Economics. 2023. [Good Practices in the Provision of Global Public Goods](#); and UNDP. 2024. Human Development Report 2023–2024: Breaking the gridlock: Reimagining cooperation in a polarized world. New York.

¹² A. Estevadeordal and L. Goodman. 2017. 21st-Century Cooperation, Regional Public Goods, and Sustainable Development. London and New York: Taylor and Francis. pp. 3–13; J. Evans and R. Davis. 2015. Too Global to Fail: The World Bank at the Intersection of National and Global Public Policy in 2025. Washington, DC; I. Kaul. 2017. Providing Global Public Goods: What Role for the Multilateral Development Banks? ODI; W. Buchholz and T. Sandler. 2021. Global Public Goods: A Survey. *Journal of Economic Literature*. 59 (2). pp. 488–545.

¹³ Only about two dozen items using the Google Scholar search could be considered highly relevant to the topic of this review. Therefore, several recently published papers and books in this area were added to the list and were reviewed.

¹⁴ Infrastructure is not a pure public good, although it provides services that have important elements of a public good. It can be provided by the public sector, the private sector, or jointly by both. Many infrastructure goods and services—including the construction and operation of cross-border infrastructure to deliver services and joint investment in infrastructure to realize economies of scale—share “club” characteristics.

¹⁵ W. Buchholz and T. Sandler. 2021. Global Public Goods: A Survey. *Journal of Economic Literature*. 59 (2). pp. 488–545.

25. Their survey covers many important areas, including the theoretical foundations of GPGs and RPGs, coalition formation and behavior, and strategic interactions between a GPG (and some RPG) contributor coalition and other countries. It also covers strategic considerations and alternative institutional arrangements for providing GPGs and their defining properties, the roles of new actors, and collective action concerns.

26. Buchholz and Sandler discuss the four properties of GPGs—benefit nonrivalry, benefit non-excludability, aggregator technology, and spillover range—showing how they affect the supply of GPGs and the need for and form in which they are provided. Their three case studies illustrate how theoretical insights inform policy and empirical tests. They also show that RPGs raise the issue of subsidiarity and involve different actors from GPGs.¹⁶

27. Several researchers have linked the growing importance of GPGs to the rapid rise in cross-border flows, computer networks, and high-speed internet, the generation and transfer of knowledge, and economic and population growth.¹⁷ Unsustainable economic growth and rapid increases in population, including in several populous low-income countries, exert pressure on the planet's resources that requires policy responses. High-speed communication also facilitates the global dissemination of ideas, threats, knowledge, misinformation, panics, and best practices, which may benefit or harm the global community.

28. RPGs such as environmental protection, health care, education, and research yield significant positive externalities for neighboring countries.¹⁸ Krapohl¹⁹ cites several examples:

- (i) Keeping rivers clean benefits not only one's own country but downstream countries as well.
- (ii) National health systems that function well can help prevent pandemics from spreading to neighboring countries.
- (iii) Domestic educational institutions benefit neighboring countries if students from those countries are able to attend them or if skilled labor migrates regionally.
- (iv) Domestic research efforts have positive externalities if the innovations (such as seeds that are well adapted to a regional climate) spread throughout the region.

29. To prevent free-riding and insufficient supply of such goods, regional countries need to cooperate and supply them collectively.

30. ADB's support for regional cooperation and integration within the CAREC subregion has focused on supporting it from the bottom up, according to Krapohl (footnote 19). In contrast, the EU has

¹⁶ For transnational and regional public goods, the notion of fiscal equivalence (within a country) invokes the "subsidiarity principle," which holds that social, economic, and political issues should be dealt with at the most immediate or local level (W. Buchholz and T. Sandler. 2021. *Global Public Goods: A Survey*. *Journal of Economic Literature*. 59 (2). pp. 488–545; I. Kaul et al. 1999. *Global Public Goods: International Cooperation in the 21st Century*. Oxford: Oxford University Press; T. Sandler. 1997. *Global and Regional Public Goods: A Prognosis for Collective Action*. *Fiscal Studies*. 18 (3). pp. 237–51). Multilateral organizations with a global mandate should therefore allocate resources to GPGs, and regional institutions should address regional public goods. Sandler argues that some deviation from strict adherence to subsidiarity may be necessary under certain conditions, particularly if economies of scale or scope warrant expanding the political jurisdiction to take advantage of efficiency factors and cost savings (T. Sandler. 1997. *Global and Regional Public Goods: A Prognosis for Collective Action*. *Fiscal Studies*. 18 (3). pp. 237–51; T. Sandler 2010. *Overcoming Global and Regional Collective Action Impediments*. *Global Policy*. 1 (1). pp. 40–50).

¹⁷ Ferroni and A. Mody. 2002. *International Public Goods: Incentives, Measurement, and Financing*. Washington, DC: World Bank; T. Sandler. 1998. *Global and Regional Public Goods: A Prognosis for Collective Action*. *Fiscal Studies*. 19 (3). pp. 221–247; T. Sandler. 2004. *Regional Public Goods and International Organizations*. In *Regional Public Goods: From Theory to Practice*. Washington, DC: International Development Bank.

¹⁸ S. Barrett. 2020. *Dikes versus Windmills: Climate Treaties and Adaptation*. *Climate Change Economics*. 11(4); A. Estevadeordal and L. Goodman. 2017. *21st-Century Cooperation, Regional Public Goods, and Sustainable Development*. Taylor and Francis. pp. 3–13; T. Sandler. 2003. *Collective Action and Transnational Terrorism*. *The World Economy*. 26 (6). pp. 779–802; T. Sandler. 2006. *Regional Public Goods and Regional Cooperation*. In *International Task Force on Global Public Goods, Meeting Global Challenges: International Cooperation in the National Interest*. International Task Force on Global Public Goods. pp. 143–78.

¹⁹ S. Krapohl. 2022. *Literature Review: Regional Cooperation and Integration in the CAREC Region*. University of Amsterdam.

promoted regional integration outside Europe through international institutions such as the Association of Southeast Asian Nations, the Common Market of South America, and the Southern African Development Community. The EU relies heavily on interaction with its regional counterpart organizations, supporting them with its expertise and financial assistance; it also negotiates interregional trade agreements. Although such an approach is not possible in the CAREC subregion, where no formal regional organization exists, Krapohl argues that RCI has “huge potential” to contribute to socioeconomic development within the region.