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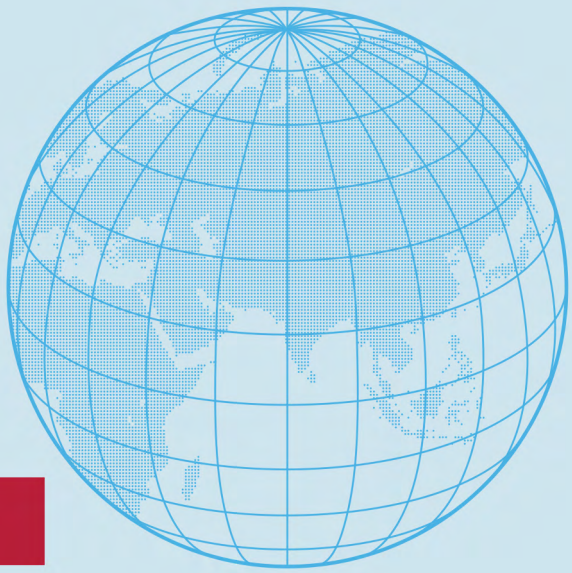
India's Railway Connectivity with South Asia

Riya Sinha



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Express Routes

India's Railway Connectivity with South Asia

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Abbreviations

ADB	Asian Development Bank
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BRI	Belt and Road Initiative
CBM	Confidence Building Measures
CEPA	Comprehensive Economic Partnership Agreement
CONCOR	Container Corporation of India
DFC	Dedicated Freight Corridor
DGCI&S	Directorate General of Commercial Intelligence and Statistics
EDI	Electronic Data Interchange
EXIM	Export Import
FLS	Final Location Survey
GDP	Gross Domestic Product
GOI	Government of India
HLTF	High Level Task Force
HMGN	His Majesty's Government of Nepal
ICD	Inland Container Depot
ICF	Integral Coach Factory
ICP	Integrated Check Posts
IRCON	Indian Railway Construction International Limited
KKS	Kankesanthurai
LCL	Less-than-container-load
LoC	Lines of Credit
MEA	Ministry of External Affairs
MoCI	Ministry of Commerce and Industry
MoPIT	Ministry of Physical Infrastructure and Transport
MoU	Memorandum of Understanding
NCTTCA	Northern Corridor Transit and Transport Coordination Authority
NER	Northeast Region
NJJR	Nepal-Janakpur-Jayanagar Railway
NTFAP	National Trade Facilitation Action Plan
PSU	Public Sector Undertaking
RITES	Rail India Technical and Economic Service
RMG	Ready-Made Garments
RSA	Rail Services Agreement
SAARC	South Asian Association for Regional Cooperation
SASEC	South Asia Sub-Regional Economic Cooperation
SLR	Sri Lankan Rupee
TAR	Trans-Asian Railway
UN	United Nations

Executive Summary

Despite strong political, economic, and geostrategic motivations for cross-border railway connectivity, India's progress in establishing a robust and thriving rail network with its neighbours has not progressed enough. This paper addresses a critical question in India's connectivity efforts: Despite the political, economic, and geostrategic incentives driving New Delhi's cross-border railway initiatives, why has India struggled to sustain momentum in this sector?

To explore this, the paper conducts a comprehensive review of India's cross-border railway connectivity over the past two decades, analysing the progress and the primary drivers behind it. It seeks to answer four key questions: What has been India's progress in developing cross-border railways in the last two decades? What are the economic, political, and geostrategic drivers of India's renewed interest in enhancing railway linkages? What challenges have contributed to the slow development and expansion of railway connectivity between India and its neighbouring countries? Finally, what are the enablers for improving India's cross-border railway connectivity?

While India has made some headway, inaugurating new lines with Bangladesh and Nepal, the growth of rail freight and passenger traffic remains limited. Road transport continues to dominate due to cost advantages, streamlined processes, and established infrastructure.

Several factors drive India's push for rail connectivity. Economically, it offers a chance to tap into the region's burgeoning growth and lower logistics costs, enhancing trade competitiveness. Politically, it aligns with India's "Neighbourhood First" and "Act East" policies, fostering regional cooperation. At the geostrategic level, railway connectivity provides New Delhi a counterbalance to China's growing influence through infrastructure projects in South Asia.

However, progress has been slow due to several challenges:

- **Institutional fragmentation:** Limited coordination between railway agencies and other government departments in India and neighbouring countries hinders project implementation.
- **Inadequate infrastructure:** Shortage of cargo-handling equipment, inadequate platforms, and a lack of dedicated goods stations create bottlenecks and delays.
- **Non-standardised operational procedures:** Engine changes at borders, differing customs practices, and CONCOR's monopoly over container movement add complexity and reduce efficiency.
- **Security concerns:** Insurgency, smuggling, and political tensions in border regions disrupt operations and necessitate costly security measures.
- **Limited private sector participation:** Reliance on government funding restricts innovation, investment, and operational efficiency.

To overcome these challenges and unleash the potential of cross-border rail connectivity, India should:

- **Strengthen institutional cooperation:** Establish dedicated units for cross-border rail projects within relevant ministries, fostering regular dialogue and coordination between Indian agencies and their counterparts in neighbouring countries.
- **Leverage development cooperation:** Strategically allocate Lines of Credit and grants to support infrastructure development, technology transfer, and capacity building of railway personnel in partner countries.
- **Improve cargo-handling infrastructure:** Invest in modern cargo handling equipment, dedicated goods stations, and elevated platforms at key rail yards and ICPs.
- **Standardise operational procedures:** Negotiate bilateral agreements for streamlined customs clearance, engine movement across borders, and simplify booking processes for exporters and traders.
- **Enable private sector participation:** Encourage private investment and operational management through PPPs to increase efficiency and reduce reliance on government funding.
- **Address security concerns:** Implement robust security frameworks, leverage technology for surveillance and cybersecurity, and engage in diplomacy and CBMs to mitigate risks in border areas.

By embracing these enablers, India can overcome the existing limitations and transform cross-border rail connectivity into a true engine of regional integration, economic growth, and strategic advantage.

1. Introduction

In recent years, India has undertaken a transformative journey to strengthen railway connectivity with its neighbouring countries in alignment with its strategic imperatives and regional aspirations. This commitment is grounded in the policies of "Neighbourhood First" and "Act East", as well as underpinned by demand from the neighbouring South Asian nations. As a result, just in the last decade, six out of seven railway lines with Bangladesh have been revived, new railway lines with Nepal have been completed, railway lines in India's Northeast Region (NER) are being constructed for the first time and extended to the border with Myanmar, and plans are underway for developing five railway lines with Bhutan.

Despite this development, roadways continue to dominate the modal share of cross-border freight and passenger movement. There has been noted hesitancy in the adoption of railways as the primary mode of transportation. To understand this imbalance, this paper explores four questions.

First, what has been India's progress in developing cross-border railways in the last two decades? Second, what are the key economic, political, and geostrategic drivers of India's renewed interest in enhancing railway linkages? Third, what are the challenges contributing to the slow development and expansion of railway connectivity between India and its neighbouring countries? Finally, what are the enablers for improving India's cross-border railway connectivity?

The development of cross-border railways is seen as a catalyst for economic growth in the South Asian region. It not only enables efficient movement of large volumes of goods and passengers but is also cost-efficient over longer distances—the per-km cost is much lower than roadways. For instance, the cost for per-tonne-per-km movement in India varies from Rs 1.36 by railway and Rs 2.6 by roadway (NITI Aayog, 2022). Furthermore, railways are also a 'greener' mode of transportation, and railway infrastructure construction is seen as less of an environmental burden because it produces fewer emissions and takes up less space than highways (Becherová & Hošková-Mayerová, 2017).

For India and its neighbouring countries, improving railway connectivity is not merely a logistical and environmental effort but is also a testament to the evolving geopolitical landscape, strategic ambitions, and developmental imperatives of the countries. It signifies a reinvigorated commitment to regional cooperation, trade facilitation, and economic development, including a focus on connecting at an inter-regional level with the countries of Southeast Asia. Many of the redeveloped railway lines in the region were part of the pre-independence Indian subcontinent that continued to connect the region even after partition until 1965. The new railway links with Nepal, Bhutan, and Myanmar are also part of India's strategic rethinking about integrating with its neighbourhood.

This phenomenon is not unique to India. Several other countries and regions globally are focusing on the development of cross-border railways with varying objectives. For instance, in Laos, the decision to allow China to finance and build railroads to create an "Iron River" connecting Southeast Asia, aims to spur domestic development (Lampton, Ho, & Kuik, 2019). Similarly, the Addis Ababa–Djibouti Railway Line, which connects landlocked Ethiopia to the Port of Djibouti, was also constructed by Chinese state-owned enterprises to enable a modal shift from road to railways in freight transportation to lower the share of logistics costs in GDP (Global Infrastructure Hub, 2021). The EU considers shifting to rail transport a crucial part of its plan to achieve climate neutrality by 2050, and greener cross-border transportation is seen as critical to realising the EU's green deal objectives (EU Agency for Railways, 2022). Other countries, such as the Tanzania-Zambia Railway Authority, view cross-border railways as a means to achieve political and economic objectives. As a result, the governments of Tanzania and Zambia own the railways in a 50–50 partnership and have agreed on common operating rules and regulations on both sides (The World Bank, 2020).

For India, railways have historically played a pivotal role in the nation's economic growth and have served as an indispensable artery for transporting goods and people across the vast subcontinent. However, over the years, there has been a marked shift towards road transport for freight movement. This shift has culminated in a low modal share of railways in the broader landscape of freight traffic movement within the country and with neighbouring South Asia. In India, the modal mix of goods transportation stands at 60% road, 31% rail, and 9% waterways, similar to

the figures in 2007–08 (NITI Aayog, 2022; National Transport Development Policy Committee Report [NTDPC], 2014). A similar trend is observed in Bangladesh, Bhutan, and Nepal, where the share of rail connectivity is low (Table 1).

Table 1: Average Modal Share of Domestic Freight Transportation in India, Bangladesh, Nepal, and Bhutan (Percentage)

Mode	Road	Rail	Waterways	Air#
India	60	31	9	-
Bangladesh	85	4	11	-
Nepal	78	13*	0	10
Bhutan	100	0	0	-
International	25–30	50–55	20–25	-

*Note: *Refers to Nepal's third-country trade through Indian Railways. #refers to the share of air in freight movement.*

Source: Calculated using data from NITI Aayog (India), Nepal Customs, Bhutan Customs, and Bangladesh Customs. International benchmark as reported by NITI Aayog.

Recognising the need to address this imbalance in road and rail movement, as well as gain geostrategic leverage in the neighbouring countries, the Government of India (GOI) has been increasing its investment in expanding rail connectivity with not only its immediate neighbours but also in its Northeast Region (NER), with the aim of connecting with the economies of Southeast Asia.

However, despite clear political, economic, and geostrategic drivers leading to progress in India's cross-border railway connectivity initiatives, why has New Delhi not been able to sustain the momentum in movement, especially in freight, through this mode?

To address this puzzle and the research questions, section 2 of the paper surveys India's railway initiatives over the past 20 years, examining both regional and bilateral mechanisms with the neighbouring countries. Section 3 identifies the political, economic, and geostrategic drivers behind India's renewed interest and initiatives towards cross-border railways. Section 4 explores why, despite these drivers, progress has remained slow. Finally, section 5 highlights the challenges and proposes solutions for enhancing India's connectivity with neighbouring countries through an efficient, cost-effective, and sustainable rail network. This network aims not only to increase the modal share of rail in the region's freight and passenger movement but also to solidify India's position as a key player in the evolving dynamics of regional connectivity.

2. India's Progress in Enhancing Cross-Border Railway Connectivity

In the last two decades, India's expansion of cross-border railway networks has been part of its development cooperation with neighbouring countries. Approximately 75% of India's development cooperation in the neighbourhood, through grants and Lines of Credit (LoCs), is dedicated to building infrastructure (Xavier & Sinha, 2020). This effort is primarily led by India's Ministry of External Affairs (MEA), in coordination with the Railway Board, and implemented by railway Public Sector Undertakings (PSUs), such as Rail India Technical and Economic Service (RITES) and Indian Railway Construction International Limited (IRCON).

To date, India has approached railway development in its neighbourhood at regional and bilateral levels.

2.1 Regional Railway Plans through SAARC, BIMSTEC, and SASEC

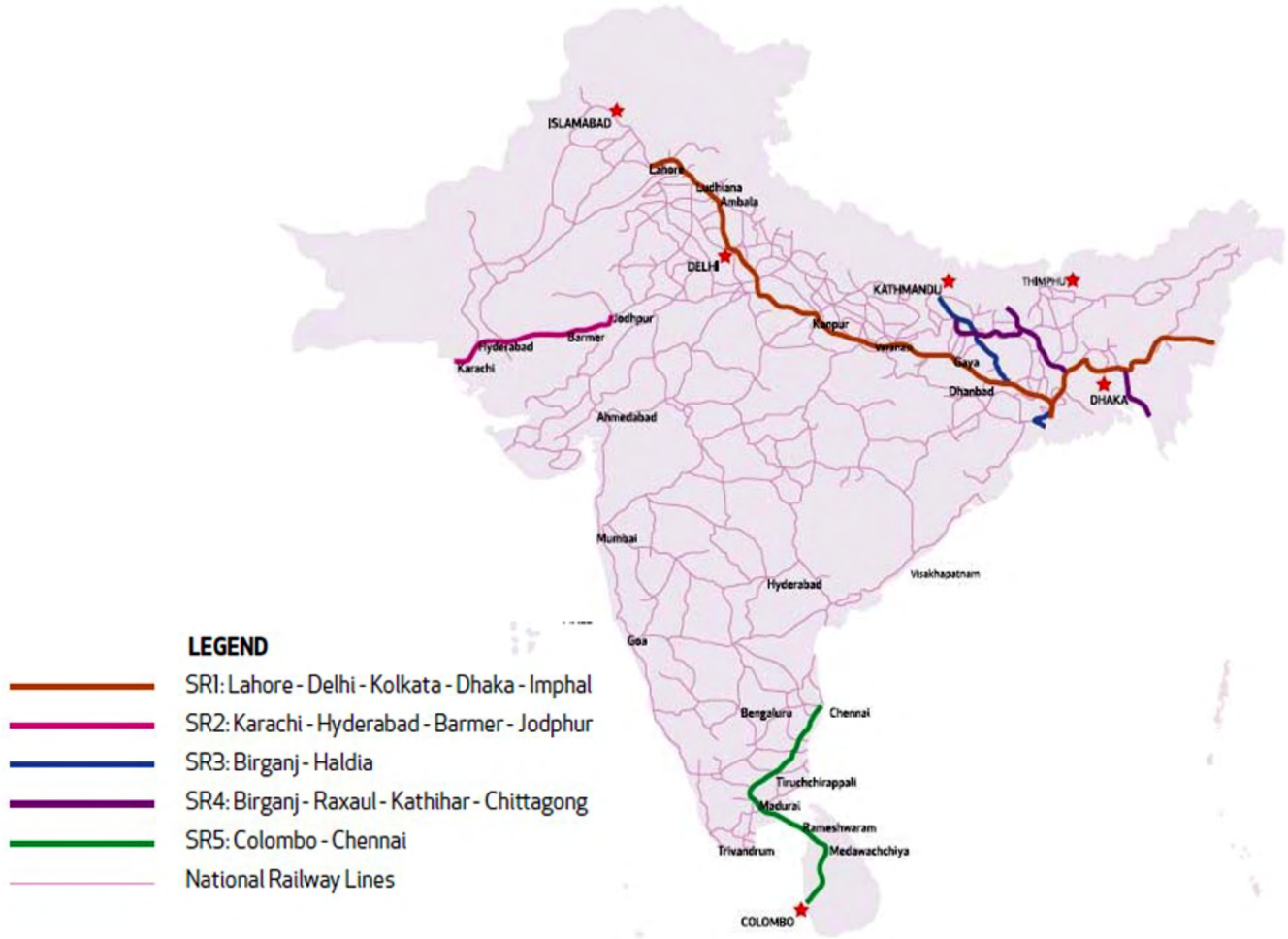
A regional approach to cross-border railway connectivity started in 2006 at the South Asian Association for Regional Cooperation (SAARC) through its Regional Multimodal Transport Study (SRMTS, 2006). This study identified railway corridors in the region to plan a modal shift towards railways for transport connectivity. This was also supported by India in the 2014 report of the government-appointed National Transport Development Policy Committee (NTDPC, 2014) as a measure to improve cross-border connectivity. The SRMTS (2006) identified five railway corridors in the region (Table 2) based on parameters such as existing freight and passenger routes, requirements of the landlocked countries, and infrastructure upgrade needs.

Table 2: SAARC Railway Corridors

Corridor	Route	Countries covered	Basis for selection
SRC1	Lahore–Delhi–Kolkata–Dhaka–Mahishasan–Imphal	Pakistan, India, Bangladesh	• Potential growth of intra-regional traffic. • Reduced distance and shorter transit time.
SRC2	Karachi–Hyderabad–Khokrapar–Munnabao–Barmer–Jodhpur	Pakistan, India	• Shorter route for intra-regional traffic. • Access to Karachi Port and potential third-country traffic.
SRC3	Birgunj–Raxaul–Haldia–Kolkata	Nepal, India	Access to the landlocked Nepal.
SRC4	Birgunj–Raxaul–Kathihar–Rohanpur–Chittagong, with links to Jogbani and Agartala	Nepal, India, Bangladesh	• Potential corridor for third-country and bilateral traffic. • Access to Chittagong Port for Indian and Nepalese traffic. • Shorter route for North Eastern States of India through Bangladesh.
SRC5	Colombo–Chennai	Sri Lanka, India	Restoration of old rail ferry link to provide passenger and goods access from the island of Sri Lanka to mainland South Asia.

Source: SRMTS, 2006.

Figure 1: SAARC Rail Corridors



Source: India Transport Report: Moving India to 2032.

Disclaimer: This map is for illustrative purposes and does not imply the expression of any opinion on the part of CSEP concerning the legal status of any country or territory or concerning the delimitation of frontiers or boundaries. The authors or CSEP do not vouch for the accuracy and the correctness of the map.

However, since 2019, SAARC has been rendered non-functional, with no meetings taking place due to the conflictual relations between India and Pakistan after the Pulwama terror attack. As a result, several connectivity initiatives have not moved forward.

India is also exploring railway connectivity with its neighbouring countries through the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). The BIMSTEC Masterplan for Transport Connectivity (BIMSTEC, 2022) also identifies several railway corridors in the region, albeit as part of a multi-modal transportation plan. However, the Masterplan acknowledges that the significance of railways for intra-regional transportation has been diminished. The BIMSTEC Masterplan underscores the importance of fostering railway links between ports, dry ports, borders, and their surrounding hinterlands.

Unlike the approach taken by SAARC, there is reduced emphasis on establishing a comprehensive regional railway network in BIMSTEC, primarily due to technical challenges such as different gauges and infrastructure availability.

At a sub-regional level, the Asian Development Bank's (ADB) South Asia Sub-Regional Economic Cooperation (SASEC) programme also has plans to implement a railway network linking to the neighbouring member countries, including India, Myanmar, and Nepal. Under the programme, financial assistance is provided by the ADB and other multilaterals (Bangladesh Railways, n.d.). There are two key SASEC Rail Corridors:

- **SASEC Rail Corridor 1: Nepal–Kolkata Trade Corridor:** Birgunj–Raxaul (Nepal)–Muzaffarpur–Patna–Gaya–Asansol–Kolkata–Haldia (912 km)
- **SASEC Rail Corridor 2: India–Bangladesh Rail Corridor:** Kolkata–Ranaghat–Gede–Tangail–Dhaka–Comilla–Chattogram–Cox's Bazar (675 km)

However, India has been keen to develop the railway lines based on its own technical specifications for broad-gauge tracks. India is, therefore, currently focusing on developing cross-border railway connectivity at a bilateral level.

2.2 Bilateral Railway Links between India and the Neighbouring Countries

Compared to the regional initiatives, New Delhi's bilateral railway connectivity has seen more developments. With Bangladesh, six out of seven historical lines have been made operational; the first passenger railway line has been operationalised with Nepal; and railway lines are being developed in the NER, with a plan to connect it with Myanmar (Table 3). With Pakistan, while two railway lines were operational until 2019, both have been suspended since 2019 after the deterioration of bilateral relations. This section examines the progress in developing railway linkages with each neighbouring country.

India–Bangladesh Railway Connectivity

Among all the neighbouring countries, India has the most railway linkages with Bangladesh. Six out of seven historical railway lines between both countries have been revived for both freight and passenger movement. This aligns with the growing trade and tourism figures between the two countries. Bangladesh is now one of India's top five trading partners globally and the largest in South Asia. In the last decade, bilateral trade has increased by 95% (2013–2024), and Bangladesh remains the largest source of tourism exports for India.[1] On the political side, both countries also concluded the Land Boundary Agreement (2015) as an important step towards trust-building, paving the way for more cross-border connectivity initiatives.

However, this wasn't always the case. Although the India–Bangladesh case represents the best-case scenario for cross-border railway connectivity in the region, it has taken five decades of negotiations to achieve this progress.

Until 1965, India and East Pakistan were well-connected through railways, roadways, and waterways. However, all three modes of transport connectivity were suspended at the time of the India–Pakistan conflict, including the seven railway lines operational between both sides (Bhasin, 2003, p. xii).

The development of railway connectivity between the two countries was re-emphasised after the liberation of Bangladesh in 1971, based on the need for better cross-border economic relations. This also led

[1] Calculated from data using Export Import Data Bank, Government of India.

to the signing of the first bilateral trade agreement on March 29, 1972, which sought to promote balanced two-way trade between both countries of Rs 250 million (approximately US$32 million in 1972) on each side.[2] The second trade agreement was signed in July 1973 with a similar objective but an enhanced two-way trade goal of Rs 305 million. The third trade agreement was signed in 1980. In all three agreements, both countries agreed to undertake the development of cross-border railways.

However, due to persisting bilateral issues at the time, including cross-border smuggling, the development of commercial relations was affected for many years, impacting the development of cross-border transportation linkages (Bhasin, 2003, pp. x–xii). Even the concept of border trade was suspended in the very first trade review talks in October 1972 due to bilateral differences over cross-border smuggling (Bhasin, 2003). This was completely abandoned in the July 1973 trade agreement. At the time, Bangladesh also did not allow India rail and road transit facilities to India's NER, even though the transit fees and upgrades to the rail and road system could have generated revenue for Dhaka's cash-strapped treasury and generated employment for millions (Bhasin, 2003). As a result, the supply chain networks created in the region mostly bypassed Bangladesh, and larger industrial players set up factories in locations along the routes through the Siliguri corridor to access the NER.[3]

Bangladesh's reasons were multi-fold. While the overarching issue was the lack of political trust in India in the post-1975 (post Mujib-ur Rahman) period, several reasons were used over the decades to justify not connecting with India, including the denial of transit rights, varied technical specifications, and the lack of progress on the Peace Accord of the Chittagong Hill Tracts (Bhasin, 2003, pp. xviii–xix).

Despite the political challenges, Bangladesh's dependence on India for imports, particularly raw materials for its industries, led to natural growth in trade over the decades. However, due to delays in finalising railway connectivity, much of this trade shifted to road transport.

After decades of non-functional railway lines, the then Union Railway Minister Mamata Banerjee announced in the Railway Budget Speech 2000–01 that within one year, India's railway links with Nepal and Bangladesh would be restored for goods traffic (Indian Railways, 2000). The Petrapole–Benapole railway line was made operational within a year, initially only for cargo movement (Indian Railways, 2001). Since then, several rounds of negotiations have taken place to restore the railway lines. The current operational railway lines are listed in Table 3. As the countries progress towards a Comprehensive Economic Partnership Agreement (CEPA), seamless and multi-modal connectivity linkages will be needed.

Table 3: India–Bangladesh Freight Rail Linkages (2024)

Country	Station in India	Station in Neighbouring Country	Distance (km)*	Current Status (2024)
Bangladesh	Petrapole	Benapole	1.8	Operational
	Gede	Darshana	3	Operational
	Haldibari	Chilahati	7.5	Operational
	Singabad	Rohanpur	10	Operational
	Radhikapur	Birol	11	Operational
	Agartala	Akhaura	12.24	Inaugurated
	Mahisasan	Shabazpur	11	Planned

*Note: *Refers only to the cross-border component. These railway lines are planned to further connect to the domestic railway networks.*

Source: Bangladesh Railways and Ministry of External Affairs, India.

[2] In the same year, on November 1, 1972, India and Bangladesh also signed the Protocol on Inland Water Transit and Trade in accordance with Article V of the Trade Agreement of 1972 for a term of five years.

[3] Findings from author's fieldwork in July 2023.

Apart from the freight services, there are three passenger rail links between India and Bangladesh (Table 4). The Bandhan Express uses the Petrapole–Benapole railway line, the Maitri Express uses the Gede–Darshana link, and the Mitali Express uses the Chilahati–Haldibari link. Currently, there are no passenger rail services between India's NER and Bangladesh.

In June 2024, Indian Railways also sanctioned Final Location Surveys (FLSs) for additional rail lines with neighbouring countries (Singh, 2024). With Bangladesh, FLSs have been approved for 861 km of new railway lines. These routes involve the construction of new railway lines, extension of existing freight links, and gauge conversion of existing lines in Bangladesh (Table 5).

India–Nepal Railway Connectivity

Nepal is a landlocked country, sharing its border with India and China to its south and north, respectively. Historically, railway development has been limited in Nepal, and only small-scale connectivity existed between India and Nepal, connecting commercial centres. As per the Treaty of Peace and Friendship (1950), both countries share an open border. There are three aspects of India's engagement with Nepal for railway development—bilateral, domestic, and providing Nepal access to Indian seaports for third-country trade.

Table 4: India–Bangladesh Passenger Rail Linkages (2024)

Country	Station in India	Station in Neighbouring Country	Distance (Km)	Train Name	Current Status (2024)	Travel Time (hh:mm)	Frequency/ week	Inaugural run
Bangladesh	Kolkata	Dhaka	393	Maitri Express	Operational	8:55	2	2008
	Kolkata	Khulna	172	Bandhan Express	Operational	5:20	2	2017
	New Jalpaiguri	Dhaka	499	Mitali Express	Operational	9:25	2	2021

Source: MEA and Indian Railways.

Table 5: New Railway Lines between India and Bangladesh Approved for FLS in 2024

Route	New Construction (km)	Gauge Conversion (km)
Balurghat–Hili–Parbatipur–Kaunia–Lalmanirhat–Mogalhat–Gitaldaha	14	18
Balurghat–Gitaldaha–Bamanhat–Sonahat–Golakganj–Dhubri	38	18
Mangurjan–Pirganj–Thakurgaon–Panchgarh–Haldibari	60	-
Dalkhola–Pirganj–Thakurgaon–Panchgarh–Haldibari	80	-
Radhikapur–Birol–Parbatipur–Kaunia–Gitaldaha	14	18
Belonia–Feni–Chottogram	38	93
Gede–Darsana–Ishwardi–Tongi–Bhairab Bazar–Akhaura–Agartala	-	100
Petrapole–Benapole–Nabharon–Jessore–Rupdia–Padmabila–Lohagara–Kashiani–Shibchar–Mawa–Nimtala–Gendaria–Dhaka–Tongi–Bhairab Bazar–Akhaur	-	120
Forbesganj–Lakshamipur	17	-
Thakurganj–Chattarhat	24	-
Kumedpur–Ambari Falakata	170	-

Source: Economic Times.

The cross-border railway linkages commenced in the 1930s with the establishment of the Nepal-Janakpur-Jayanagar Railway (NJJR) as a point-to-point railway line to export timber to British India.[4] However, this line was never properly maintained, and operations continued intermittently on this route until 2014 before it was closed for broad-gauge conversion. A second railway line within Nepal was established in 1997, known as Koshi Railways. It was constructed as part of the Koshi Bridge Project to move construction materials from Bathnaha (Bihar) to Birpur and Bhimnagar within Nepal (Rimal, 2021). This line was also later rendered non-functional.

The India-Nepal Treaty of Trade and Commerce (1950) identified five railheads to be established: Raxaul, Jogbani, Nepalgunj, Nautanwa, and Jayanagar. However, despite this, movement towards improving and finalising rail connectivity only re-emerged in the 1980s. During the visit of the Foreign Minister of Nepal to India between July 12 and 14, 1984, both India and Nepal held talks on establishing cross-border railway links. Later, during the visit of the then External Affairs Minister of India, Inder Kumar Gujral, to Nepal in August 1990, both sides agreed for a team of Indian experts to visit Kathmandu to prepare a project report on the proposed Raxaul–Kathmandu railway route. Both countries also agreed to investigate railway connectivity in other parts of the country (Bhasin, 2005, p. 821).

On February 15, 1991, Indian Prime Minister Chandra Shekhar confirmed the restoration of the historic Jayanagar–Janakpur–Bijalpura railway line. Discussions on India–Nepal railway connectivity continued throughout the 1990s, including in the meeting of the First Session of the Indo-Nepal High Level Task Force (HLTF) in New Delhi on April 16, 1994. The HLTF also considered new project proposals for the Jayanagar–Janakpur Railway line, the Janakpur Development Project, Kohalpur–Mahakali Road cost overruns, and the broad-gauge conversion of the Indo-Nepal Railway link from Raxaul to a point in Nepal (this would later become the Birgunj–Raxaul railway line) (Bhasin, 2005, p. 874). By 1995, India and Nepal also agreed to a joint survey for the East-West Electric Railway (Bhasin, 2005, pp. 892–893). By November 18, 1995, RITES had completed the survey for broad-gauging the Raxaul–Sirsiya railway track (Bhasin, 2005, p. 901).

Today, the Raxaul–Sirsiya line is important for Nepal's global trade, providing further connection to the Indian seaports of Kolkata, Haldia, and Visakhapatnam. It accounts for approximately 25% of Nepal's imports.[5] The second line, Jayanagar–Kurtha (Janakpur), was inaugurated in 2022 as the first passenger railway line between India and Nepal (ETInfra, 2023). Several others have been planned and are at various stages of development (Table 6).

Table 6: Railway Links between India and Nepal (2024)

Country	Station in India	Station in Neighbouring Country	Length (km)*	Current Status (2024)
Nepal	Raxaul	Sirsiya (Birgunj)	6	Operational
	Jogbani	Biratnagar	18.6	Complete
	Jayanagar	Bijalpura (and extension to Bardibas)	6.72	Operational till Bijalpura
	Nepalganj Road	Nepalganj	12	Planned
	Nautanwa	Bhairahawa	15	Planned
	New Jalpaiguri	Kakarbhita via Panitanki	46	Planned

*Note: *Refers to the cross-border component. These railway lines are planned to further connect to the domestic railway networks.*

Source: Bangladesh Railways and Ministry of External Affairs, India.

[4] Railways were first developed in Nepal in 1927 with the inauguration of the Nepal Government Railway and mostly operated as a narrow-gauge track.

[5] Calculated using data from Nepal Customs for 2022–23.

In addition to bilateral rail linkages with India, Kathmandu has also been demanding access to Bangladesh through Indian territory to facilitate movement by rail.

Another aspect of India's cross-border railway development with Nepal is the Government of Nepal's (GoN) vision to develop domestic railway lines. As a result, both countries signed a Memorandum of Understanding (MoU) in October 2021 to extend the Raxaul–Sirsiya railway link to Kathmandu (News on Air, 2023). India's Konkan Railway Corporation Limited prepared the Detailed Project Report for this railway line. As per the report, it will cost Rs 32,000 crore to build an electrified broad-gauge line from Raxaul to Kathmandu.

Other domestic railway lines in Nepal include the development of the East-West Railway, which the GoN recognises as a National Pride Project, as it connects the 21 districts of Terai (National Planning Commission of Nepal, n.d.). The survey for this line was completed in 2010; however, it has not yet been implemented due to concerns about its economic viability, as well as gauge development. A Nepali Railway Department official highlighted that while India wants to develop railways on broad gauge, Nepal wants railways on standard gauge, in line with the technical standards of the Trans-Asian Railway, of which Nepal is a member.[6]

This demand is not new. In his closing speech at a seminar in Kathmandu on January 11, 1997, the then Nepalese Minister of Foreign Affairs emphasised that "it might also be beneficial to consider SAARC cooperation to upgrade and standardise the portions of the roads and railways comprising the Asian Highway and Asian Railway, respectively. In addition, consideration might be given to SAARC countries acceding to the common international conventions on transit, transport, trade, and customs etc." (Bhasin, 2005, p. 1694).

As per the UN Convention on Transit Trade of Land-Locked Countries, 1965, India is obliged to provide access to its seaports for Nepal for the latter's global trade (UN, 1965). As a result, India has been providing Nepal access to its seaports of Kolkata, Haldia, and Visakhapatnam, connected by both rail and road. In the last decade, India has made several advancements in streamlining the movement of Nepal's third-country cargo through implementation of the Electronic Cargo Tracking System (ECTS) to reduce pilferage and by allowing private container train operators to carry containers bound for Nepal, ending the monopoly of the public-sector Container Corporation of India (CONCOR) (PIB, 2021). It also permitted wagons operated by the Nepal Railway Company to carry Nepal-bound freight over Indian railways. This provision was expected to lead to increased efficiency and cost competitiveness in the movement of Nepal's freight. However, this provision does not apply to bilateral trade.

India–Pakistan Railway Connectivity

The India–Pakistan railway connectivity holds significance for fostering bilateral relations and enhancing people-to-people contact between the two nations. Until recently, the primary active rail link between India and its neighbour was the Attari–Wagah rail connection, with the *Samjhauta Express* operating between Amritsar and Lahore (Table 7). The establishment of the *Samjhauta Express* resulted from the precedent set during the Simla Agreement on July 2, 1972, in which both India and Pakistan committed to taking "appropriate steps to promote travel facilities for the nationals of the other country" (MEA, 1972).

Table 7: Railway Lines between India and Pakistan (2024)

Country	Station in India	Station in Neighbouring Country	Length (km)*	Current Status (2024)
Pakistan	Amritsar	Lahore	50.2	Suspended
	Munnabao	Khokrophar	-	Suspended

Source: Ministry of External Affairs, India.

[6] Interview with an official at the Nepal Department of Railways.

Commonly referred to as the Attari Special Express, the train service officially commenced on July 22, 1976. Operating bi-weekly, the *Samjhauta Express* played a crucial role in facilitating cross-border travel, carrying not only passengers but also six to ten parcel wagons, symbolising economic and cultural exchange between the two nations. The *Samjhauta Express* was a manifestation of diplomatic efforts to undertake confidence-building measures and facilitate people's movement between India and Pakistan.

The Munnabao–Khokrophar link, also known as the Thar Link, was the second railway line connecting the two countries and served as a vital route until the 1965 war. This rail link was later resumed, with weekly services connecting Jodhpur and Karachi starting in 1994. It played a crucial role in connecting different regions and facilitating trade and transportation. However, with changing political dynamics between the two countries, use of this rail link diminished over time. While plans were made to resume this railway line for three years, between 2018 and 2021, the political fallout between India and Pakistan in 2019 led to the derailment of all plans (Prabhakar, 2018).

The India–Pakistan railway connectivity was intended not only for the movement of people and goods but also as a symbol of diplomatic initiatives aimed at fostering mutual understanding and cooperation after a series of setbacks. It is important to note that the railway link was periodically resumed despite instances of drug smuggling and terror threats, a testament to the political will of both countries (*The Tribune*, 2018; PTI, 2014). Despite political and historical challenges and operational disruptions, the resumption of rail links served as a tangible means of connection, creating opportunities for cultural exchange and economic collaboration. However, due to the continuing difficult political relations between both countries, trade and the movement of people have largely been suspended. However, traders indicate that India–Pakistan trade continues through third countries, such as Dubai, leading to a loss of bilateral trade opportunities.[7]

India-Sri Lanka Railway Connectivity

As with other railways in the region, the roots of India–Sri Lanka railway connectivity can also be traced back to the colonial era. The idea of linking the railway systems of British India and British Ceylon (present-day Sri Lanka) was conceived as a means to enhance trade and communication between the two regions. This vision, first conceived in the 19th century, gained momentum in the early 20th century (Munesinghe, 2022). The proposals for domestic railway development in both countries originated around the same time—the 1830s in India and the 1840s in British Ceylon. The Ceylon Railway Company was formed by the British in 1845 with the aim of building railway connectivity from the interior coffee plantations to Colombo (Munesinghe, 2022, p. 101).

At a bilateral level, the first rail-cum-ferry service began between the two countries in 1880, initially running from Madras (present-day Chennai) to Tuticorin by rail and then by ferry onwards to Colombo (270 km). This route was changed in 1914 with the inauguration of the Pamban Bridge, after which the train ran between Madras and Dhanushkodi, from where a steamer service (35 km) transported passengers and cargo to Talaimannar in northern Sri Lanka. Known as the 'Boat Mail' service, or the Indo-Ceylon Express, the line was started to connect both countries via multimodal linkages. This train had 12 compartments with a capacity of 300 passengers. The Indian part of the link used metre gauge, whereas the Ceylon part used broad gauge. From Talaimannar, passengers then took the Fort Night Mail of Northern Sri Lanka to reach Colombo (Kamalakaran, 2021). It was possible at that time to book a ticket in Colombo to any station in India.[8]

This link continued until 1965 in India before a cyclone destroyed the railway lines in Dhanushkodi. After this, the Boat Mail connected Rameswaram to Talaimannar via the ferry service. The ferry link and the railway lines connecting northern Sri Lanka were active until 1983, when civil war broke out (Prema Dhanaseeli, 2019).

Today, the only transport link between India and Sri Lanka is by air. However, there have been recent attempts to revive the rail-cum-ferry service between the two countries. In July 2023, the leaders of India and Sri Lanka announced plans to restart ferry services between both countries during the visit of President Ranil Wickremesinghe to India. On October 14, 2023, ferry services began between Nagapattinam

[7] Interviews with India–Pakistan traders based in Amritsar, India.
[8] Interview with a transportation expert in Sri Lanka.

in India and Kankesanthurai (KKS) near Jaffna in the Northern Province of Sri Lanka (MEA, 2023). The high-speed ferry, managed by the Shipping Corporation of India, has a passenger capacity of 150. Covering approximately 60 nautical miles (110 km) between Nagapattinam and KKS, the ferry voyage takes about 3.5 hours, depending on sea conditions. To initiate this service, the Government of India collaborated with the Tamil Nadu Maritime Board, offering support for the enhancement of facilities at Nagapattinam port. Likewise, the Government of Sri Lanka undertook development of essential infrastructure at KKS port to ensure the smooth operation of this maritime connection.

Beyond cross-border linkages, India has also been involved in facilitating the development of Sri Lanka's railways in both the southern and northern provinces since 2008 and 2009, respectively. Through Lines of Credit, India has been helping with upgrading old railway tracks and supplying rolling stock (HCI Colombo). Table 8 lists some of the completed projects with Indian support.

In January 2024, India also announced the donation of 20 locomotives to Sri Lanka Railways, to be delivered within one year (Bovenizer, 2024).

India–Bhutan

India shares a 699-kilometre (376-mile) border with Bhutan and is its largest trading partner, accounting for 98% of Bhutan's exports and 90% of its imports.[9] Currently, there is no direct railway link between India and Bhutan, but both countries are exploring the possibility of establishing connectivity through rail. IRCON has also opened an office in Bhutan to facilitate the construction of railway links between the two countries. The GOI and Bhutan have identified five potential rail links that could close the current gap and enhance transportation and trade between the two nations. These will be developed by the GOI, funded by grants (SASEC, 2022).

Table 8: Railway Projects in Sri Lanka Completed with Indian Support

S.no	Province	Project	Distance (km)	Cost (USD million)	Project components	Year of MoU between SLR and IRCON/ Year of completion
1	Southern	Galle–Matara Railway line	42	36.24	Laying of tracks	2008/2011
2	Southern	Galle–Kalutara Railway line	76	41.76	Laying of tracks	2008/2012
3	Southern	Supply of Rolling Stock, machinery, equipment, training of personnel, etc.	-	87.14	Rolling stock and set up of facility for maintenance	2008/2012
3		Omanthai–Pallai Railway line	90.50	185.35	Laying of tracks	2010/2013
4		Madhu–Talaimannar Railway line	63	149.74	Laying of tracks	2010/2013
5		Medawachchiya–Madhu Railway line	43	81.30	Laying of tracks	2010/2012
6		Pallai–KKS Railway line	56	149.34	Laying of tracks	2011/2014
7		Signalling & Telecommunication	-	86.50	On all track laying sites above	2011/2015
8		Supply of Rolling Stock, machinery, equipment, training of personnel, etc.		146.51	Rolling stock and set up of facility for maintenance	-

Source: High Commission of India, Colombo.

[9] Data sourced from Export Import Data Bank, Ministry of Commerce and Industry, India.

Table 9: Potential Railway Links between India and Bhutan

Country	Rail link	Distance (km)	Status
Bhutan	Kokhrajhar (I) to Gelephu (B)	57	Planned. FLS concluded.
	Pathsala (I) to Nanglam (B)	51.15	Planned
	Rangiya (I) to Samdrupjongkjar (B)	48	Planned
	Banarhat (I) to Samtse (B)	23	Planned
	Hasimara (I) to Phuentsholing (B)	17.52	Planned

Source: SASEC.

Apart from direct rail development, the Haldibari–Chilahati rail route between India and Bangladesh has also been designated as an additional trade route for Bhutan's trade with Bangladesh in November 2023 (ETInfra, 2023). Before this, both countries had designated Pandu, Jogighopa, and Agartala as rail transit customs stations. This potential railway connectivity has garnered attention at the diplomatic level. During his visit to India in December 2022, Bhutan's Foreign Minister, Tandi Dorji, stated that his government is actively engaged in discussions regarding railway connectivity with India and highlighted the significance of such a connection, emphasising that it would "integrate trade and commerce" between the two countries (Sibal, 2022).

India's railway link with Bhutan is expected to ease congestion at key land crossings, such as Phuentsholing. It would be particularly helpful for easing the movement of bulk cargo, such as boulders.

India-Myanmar Railway Connectivity via the NER

Historically, there has been no railway line connecting India with Myanmar (or colonial Burma before 1948). In 1852, following the Second Anglo-Burmese War, the British surveyed a potential railway route to connect India with Yunnan through Burma. A railway project between Assam and Burma was also planned in 1896 but was never constructed (Yhome, 2021).

Building rail connectivity with Myanmar is a crucial component of India's Act East Policy to promote trade and people-to-people connections and enhance regional connectivity. The India Transport Report (2014) proposed the construction of new railway lines to Myanmar, including one connecting Sittwe, Myanmar, with Tripura, Arunachal Pradesh.

Indian Railways has been planning a railway link between Mandalay, Myanmar, and Jiribam, Manipur. In 2008, RITES conducted a feasibility study for this rail route and initially rejected it, citing its lack of economic viability. However, in 2019, attempts were made to revive this route and extend it to Myanmar. This route is divided into two sections: Section I, the link in India from Jiribam–Imphal–Moreh (236 km), and Section II, the link in Myanmar from Tamu to Kalay (128 km) (PIB, 2016). The Jiribam–Imphal railway line is still under construction and is anticipated to be completed in 2024. In response to a question in the Lok Sabha, former Railway Minister Piyush Goyal stated that the project is expected to cost Rs 12,264 crore, 90% of which had already been spent by March 2020. The budget for 2020–21 included an additional expenditure of Rs 800 crore (PIB, 2020). This reflects renewed attention to and resource allocation for the project since its 2003–04 launch, despite multiple delays.

Describing the Imphal–Moreh railway line as a "strategic line", the Indian Railway Board also approved and commenced a site study of the route in 2022 (Dash, 2022). This railway line is also part of the Trans-Asian Railway Network. However, to fully utilise the potential of railway connectivity with Myanmar, India needs to plan its extension into Thailand (Sinha, 2023).

India has increased the development of railway lines throughout the Northeast, moving beyond an emphasis on cross-border connections. This is a major component of India's Act East Policy, which also emphasises the NER's development as a necessary precondition for connectivity with Southeast Asia. This includes the 51.38 km Bairabi–Sairang line in Mizoram and the 44 km Sivok–Rangpo line in Sikkim. A passenger train from Silchar, Assam, arrived at Vangaichungpao railway station in Manipur in January 2022. Later that month, a freight train arrived at Rani Gaidinlu station in Manipur (Laithangbam, 2022). Several rail development projects have been put into service in the region since 2014, progress-

ing at an average pace of 193.71 km per year—94% faster than the average commissioning rate during 2009–14. These projects include 270 km of new lines, 972 km of gauge conversion, and 114 km of doubling (Deol, 2021).

However, several infrastructure and regulatory barriers need to be addressed to establish seamless and efficient rail connectivity between India and Myanmar (discussed in Section 4).

3. India's Drivers for Improving Cross-Border Railway Connectivity

India's foray into cross-border railway development has been late. While efforts were made in the 20th and the beginning of the 21st century to improve freight and passenger movement through rail, several issues curtailed its actualisation—including India's pursuance of regional isolation, lack of political and economic incentives for the development of cross-border railways, and India's own limited capacity to meet both domestic and external needs for the delivery of locomotives until 1984 (Xavier, 2020; Xavier & Sinha, 2022; Mann, 2015, pp. 349–350). As a result, there was little progress in railway connectivity until the early 2000s.

Despite the early setbacks and delays, the last decade has witnessed some progress in India's railway connectivity initiatives with its neighbourhood, with the inauguration of several critical railway lines. This raises the question: what is driving India's renewed momentum towards developing cross-border railways?

First, economic considerations have propelled India to rethink its approach towards cross-border railway connectivity. Studies have projected South Asian and South-East Asian economies to grow at 6.9% and 4.4%, respectively, in the next decade, compared to projections of the developed economies at 1.9% (ADB, 2018). With better connectivity, countries in the region will benefit from this economic growth. Furthermore, trade between India and its neighbouring countries is growing. The trade figure has doubled from US$ 17.7 billion in 2012–13 to US$ 39.7 billion in 2021–22.[10] Over the last few years, Bangladesh has been in India's top 10 export destinations globally. India is the largest trade partner for Nepal and Bhutan. However, despite this growth, the region has not been able to meet its trade potential, which stands at US$ 67 billion from the current US$27 billion (World Bank, n.d.). The overall intra-regional integration in trade remains low at 5% (Kathuria, 2018) and the cost of trading remains high.

Among the key factors are a lack of adequate multi-modal transport infrastructure and non-tariff related challenges in the region. One of the most pressing challenges India and its neighbourhood face is the persistently high logistics costs that weigh heavily on the economy. For South Asian countries, logistics costs range between a staggering 14—25% of GDP—a figure that stands in stark contrast to countries such as the United States (8%), Europe (8%), Singapore (8%), and China (10%) (World Bank, 2023). This discrepancy places the region at a significant competitive disadvantage in the global market and underscores the urgency of revitalising its rail, road, and other modal infrastructure. As a result, there is not just a focus on developing railways, but on growing multi-modal connectivity.

Several studies suggest that improving multi-modal connectivity in the region will not only aid in economic recovery post the COVID crisis in the region, but better transportation options would also lead to an increase in demand for goods in the region (De, 2021; Fujita et al., 2001). Additionally, an ADB (2015) study also found that if transport costs between South Asia and the neighbouring South-East Asian countries are reduced by 15%, the net benefits for South Asia would be 5.7% of GDP or approximately US$ 240 billion. Therefore, given the economic benefits from the growing economies and better connectivity in the region, India is pushing for better cross-border transportation connectivity—including through railways—in the region.

Second, at a political level, India has been making significant outreach to the neighbouring countries as part of its 'Neighbourhood First' and 'Act East' policies. India has prioritised connectivity with the neighbouring countries while also slightly re-orienting its earlier security-centric approach to connectivity (Sinha & Xavier, 2024; Sinha, 2021). This has led to significant connectivity development in the last decade, including the construction of new railway lines and the revival of the old ones, as explained

[10] Calculated from data using the Export Import Data Bank, Ministry of Commerce and Industry, India. The calculations reflect the Indian financial year.

in the previous section. India has also built several Integrated Check Posts (ICPs) with the neighbouring countries and is developing nine more until 2030. Additionally, India also built the region's first petroleum pipelines with Nepal and Bangladesh, and several more are under development.

These connectivity initiatives have also been in response to demand by India's neighbouring states—especially the landlocked states of Nepal and Bhutan—to streamline cross-border infrastructure, trade, and logistics. Bhutan's Transport Integrated Strategic Vision 2040 lays emphasis on the economic potential for connecting to Indian railways (ADB, 2013). Nepal's long-term vision for the transport sector includes a plan to develop 2,200 km of railways—both cross-border and domestic—by 2044 (Nepal Investment Board, 2024). Bangladesh, in its Railway Masterplan (2016–2045), recognised that the large-scale investment in road development has been neither financially nor environmentally sustainable for the country. Therefore, there is an increasing emphasis on the expansion of both domestic and cross-border railway lines (Bangladesh Railway, n.d.).

Therefore, there is a demand for external players—including India—to contribute to the infrastructure development efforts. During the visit of the Prime Minister of Nepal to India in 2023, he appreciated New Delhi's "Neighbourhood First" policy while also emphasising strengthening multi-modal transportation infrastructure (MoFA, 2023). He also urged India to build on the increasing railway connectivity through training and capacity building of Nepal's railway personnel (MoFA, 2023). Similarly, during the recent visit of the Bhutanese Prime Minister to India, both countries finalised a Memorandum of Understanding (MoU) on railway links (MoFAET, 2024). With Bangladesh, India has already been working closely to not only build cross-border railway links, but also improve railway connectivity within Bangladesh. In the last two years, India has taken up several railway projects that China withdrew from in Bangladesh (*Daily Industry*, 2023).

Despite the progress, the political driver for connectivity between India and its neighbouring countries hinges on completion, delivery, operationalisation, and holistically addressing the challenges in cross-border projects. India will need to find ways to sustain its recent connectivity successes in the region.

Finally, geostrategic compulsions are driving India's push for railway connectivity in its neighbourhood. China's increasing railway investments in the region have caused geostrategic anxieties and pushed India to do more in the region. China is developing railway corridors in South-East Asia—from Myanmar to Indonesia and Vietnam—as part of its Pan-Asian Railway Network, conducting feasibility studies of the Kerung (Tibet)–Kathmandu railway in Nepal, developing railway lines in Bangladesh, and constructing railroads in Tibet close to the border with Bhutan. In 2006, China completed the Qinghai–Tibet railway line—the world's highest elevation railway line—and also announced the extension of the railway line to Nepal's border. In 2016, during Oli's visit to China, the two countries signed a treaty on trade and transit, including a plan to build a high-speed railway from Kathmandu to the Chinese border (Adhikari, 2018). China started the feasibility study for this US$3 billion rail project in December 2022 on a grant basis and is expected to complete it in 42 months (Shrestha, 2023). Kathmandu has recognised this as a game-changer project for Nepal, along with the Raxaul–Kathmandu line (Chitrakar, n.d.). In its neighbourhood in South-East Asia, China has plans to build a Kunming–Singapore "Pan-Asian Railway"—parts of which have already been completed. The semi-high-speed China–Laos railway became operational in 2021. Currently, work is underway to extend this link to Thailand (Akama, 2024).

Comparatively, India's plan to develop cross-border railways with the neighbouring countries lacks a regional or sub-regional connectivity plan. All of India's neighbours, except Bhutan, are part of China's Belt and Road Initiative. China has also been engaging in small development projects in the region, such as building houses, hospitals, and schools, where India had already established a niche in the region as part of its High Impact Community Development Projects (HICDPs) under its development cooperation (Shivamurthy, 2024). Such increasing engagements by China have alarmed India, which considers the immediate neighbourhood as an important strategic space. As a result, there is increasing pressure on India to deliver more in the neighbourhood.

Schindler et al. (2023) emphasise that the existing geopolitical competition regarding infrastructure development is more concerned with securing centrality in trade, production, and consumption networks than

territorial disputes. This explains the rationale behind the geopolitical competition in infrastructure finance and construction, as roads, ports, pipelines, energy grids, high-speed rail, and undersea cables strategically align locations and populations within Sino-centric networks or those associated with the regional actors. Thus, modern cross-border railway development globally is underpinned by a variety of factors that go beyond the conventional economic logic and are, at times, specific to each region and country.

However, it would be faulty to conclude that China is the only geostrategic driver of India's renewed approach towards connectivity in the region. India also has ambitions to become a more proactive regional player, focusing on connecting not just with the immediate neighbourhood but also other regions such as South-East Asia and Central Asia. India's strategic vision is encapsulated in its policy to "cooperate, plan, invest and build" for an interconnected Eurasia and Indo-Pacific (MEA, 2021). India also sees its connectivity with the neighbouring South Asia in the wider Indo-Pacific concept. At the 2018 Regional Connectivity Conference, India's Foreign Secretary highlighted that:

"Regional connectivity in South Asia is today very much of relevance to the wider Indo-Pacific and the world at large. This is because physical connectivity is only a part of the larger web of trade and economic interaction, digital connectivity, people-to-people links and knowledge connectivity that are the defining parameters of the Indo-Pacific region. India views the Indo-Pacific as a positive construct of development and connectivity, in which India can play a unique role by virtue of its geographical location and economic gravity" (MEA, 2018).

By investing in infrastructure and fostering economic ties, India aims to create a network that integrates various parts of the Indo-Pacific and connects South Asia with other regions. This logic also underscores the India–Middle East–Europe Economic Corridor (IMEC)—announced during India's G20 presidency—that connects India and its neighbourhood with the economies of Europe through multi-modal connectivity.

While the drivers for India's railway connectivity traverse economic and geostrategic logic, there are several region-specific challenges that still need to be addressed to ensure that railway operations can be sustained.

4. Limited Growth of Railway Linkages in South Asia

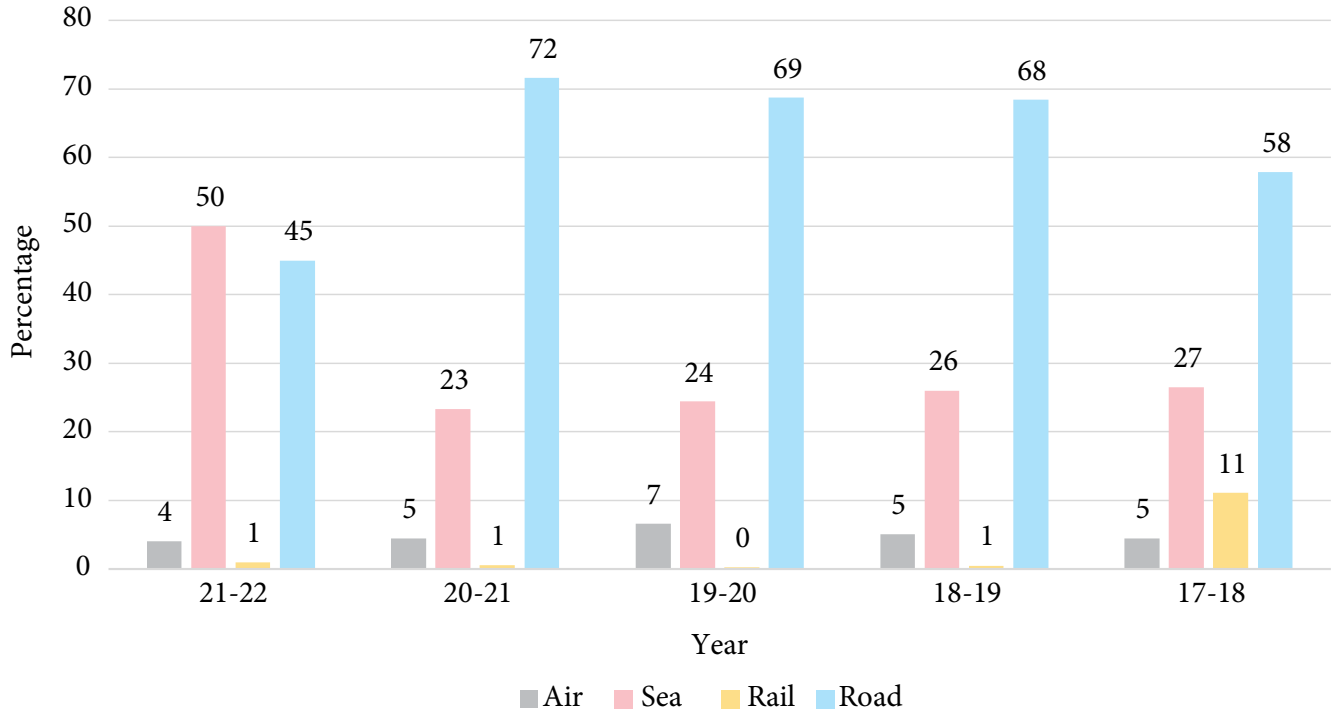
Despite the advancements in establishing cross-border railway linkages in the South Asian region, progress and growth have been slow. Over the years, many studies have also highlighted the potential of improved railway connectivity, yet progress in establishing and sustaining these linkages has been slow (ESCAP, 2004, 2011; ADB, 2023; SASEC, 2023). The low modal share of railways in South Asia is due to continued challenges faced in sustaining the inaugurated railway lines, the slow growth of freight volumes through railways, and the limited support infrastructure development for passenger and cargo handling.

First, there is limited frequency of rail movement between India and the neighbouring countries. In Bangladesh, for instance, the movement of container trains was made operational during the pandemic in 2020 (Noman, 2020). This was seen as a game-changer for India–Bangladesh, which could lead to improved efficiencies in cross-border freight movement—especially as trade between both countries grows by approximately 10% annually.[11] However, no container train has moved in the last year between both countries.[12] Furthermore, the overall movement of cargo by rail also remains low (Figures 2 a and b).

[11] Calculated by the author using data from Ministry of Commerce and Industry, India.
[12] Findings from fieldwork in June 2023.

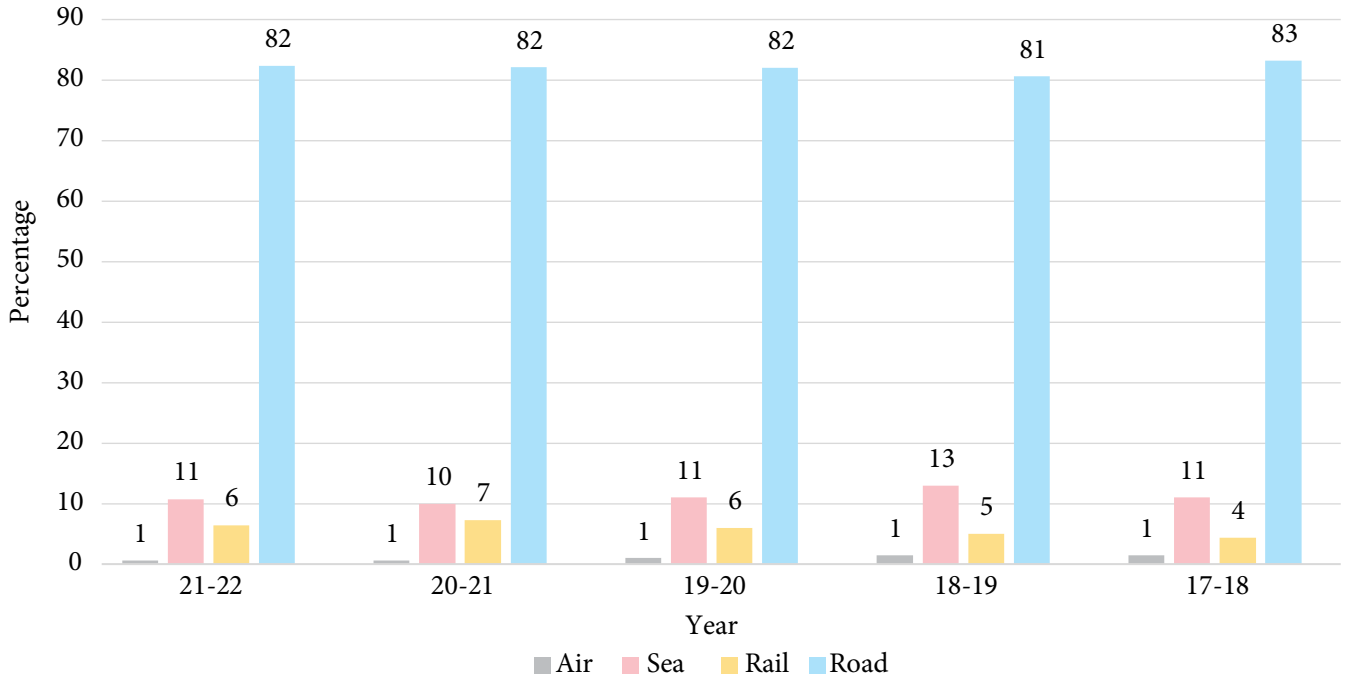
Figure 2: Share of Railway Movement in India-Bangladesh Trade

a) India's exports to Bangladesh (modal share, %)



Source: Calculated by the author based on data from DGCI&S.

b) India's imports from Bangladesh (modal share, %)



Source: Calculated by the author based on data from DGCI&S.

Despite the growth in the number of bilateral lines, in 2021–22, only 4% of India's total exports to Bangladesh were transported via rail, whereas 6% of goods were imported via rail (Figure 2). In terms of exports, there has been a decline in movement via rail in the last five years. The exported commodities include wheat, other cereals, rice other than basmati, oil meals, granite, and natural stone, whereas key imported commodities include cotton fabrics, ready-made garments (RMG) cotton, cotton raw, mispro-cessed items (DGCI&S, n.d.).

Additionally, the passenger railway link known as the Bandhan Express was inaugurated in 2017 and runs only twice per week, covering a distance of 172 km (*Dhaka Tribune*, 2017). This limited run is despite the fact that Bangladesh is the largest source of tourism exports for India (Sinha, 2020). Compared to this, there is a direct bus service from Tripura to Kolkata via Dhaka, as part of the 2015 agreement on the regulation of motor vehicle passenger traffic (Sinha & Xavier, 2024).

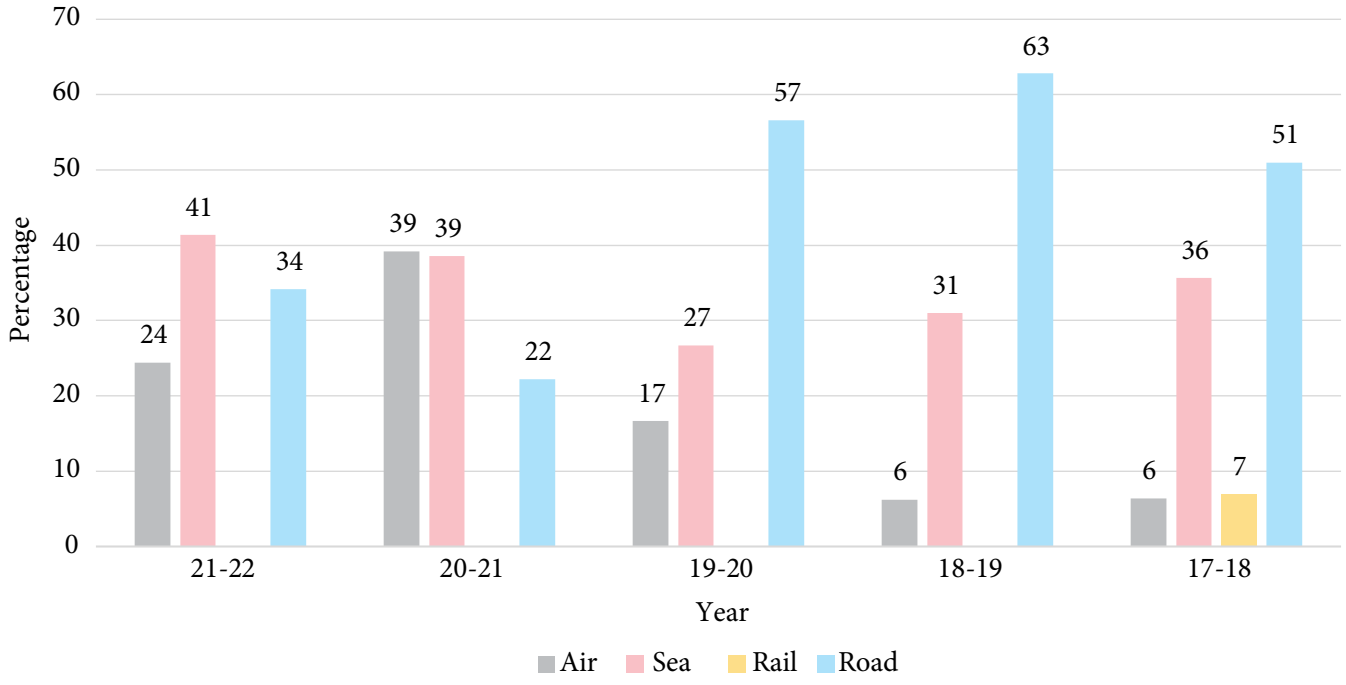
With Nepal, despite existing rail connectivity between both countries, the bilateral cargo movement—especially through the Raxaul–Birgunj route—is limited. 99% of export-import (EXIM) cargo traffic between India and Nepal is routed via road through the land ports on the border.[13] The railway route is used mainly for Nepal's transit of third-country goods.

With Pakistan, despite the inauguration of railway links, service has been irregular, dependent on the political relations between countries, as mentioned in the previous section. Railway movement only took place until 2018–19 (Figures 3a and b). This is because of the irregularity of service; railway was not seen as a viable mode of transportation. Compared to this, the modal share of India's trade with Pakistan increased from 11% to 33% between 2011 and 2013, after the inauguration of the ICP at Attari (Sinha, 2021).

Second, despite the inauguration of new railway lines between India and Bangladesh, there has been limited focus on improving this connectivity by streamlining operating and regulatory infrastructure. The lack of infrastructure at key loading stations—such as Ranaghat in West Bengal and Benapole in Bangladesh—further exacerbates the issue. In contrast, more ICPs with upgraded handling infrastructure are being developed. This approach is also reflected in the low share of railways in cross-border trade, ranging between 4–6% of the total trade in the last few years (Figure 3).

Figure 3: Modal Share of India's Trade with Pakistan

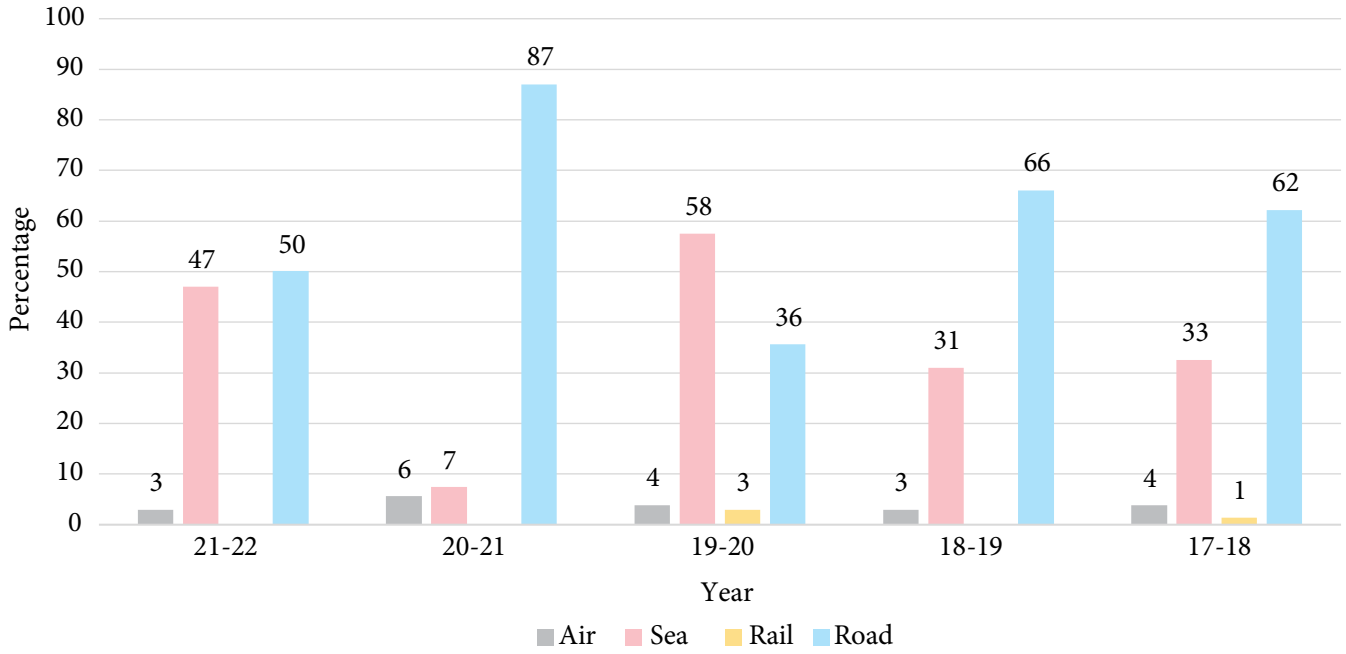
a) India's Exports of Pakistan (modal share, %)



Source: Calculated by the author based on data from DGCI&S.

[13] Calculated by author using data from DGCIS&S.

b) India's Imports Pakistan (modal share, %)



Source: Calculated by the author based on data from DGCI&S.

Similarly, with Nepal, a third railway line connecting Jogbani (India)–Biratnagar (Nepal) has been complete for over four years yet has not been made operational due to plans for an extension of lines and a delay in receiving locomotives from the Integrated Coach Facility, Chennai.[14] The Jayanagar–Bijalpura railway line came into operation after three decades of discussion (since 1991). The Raxaul–Kathmandu railway link has been under discussion since 1991 and a survey was completed by India only in 2023. This line is yet to be constructed and made operational.

With Myanmar, the first potential railway link was announced in 2004 and a feasibility study was carried out in 2008 for the Manipur (India)–Mandalay (Myanmar) route. While initially rejected due to economic unviability, discussions on cross-border railway connectivity were restarted 11 years later in 2019 (Sinha, 2023). The planned Moreh (India)–Tamu (Myanmar) link has been a part of the Economic and Social Commission for Asia and the Pacific's (ESCAP) Trans-Asian Railway (TAR) Network since 2006. Instability in the border areas further exacerbates the situation.

Third, the limited focus on developing cross-border railway linkages has made them particularly vulnerable during times of political crisis or instability. For instance, during the recent crisis in Bangladesh, Indian Railways indefinitely suspended its railway connectivity with the country (Mishra, 2024). India is also planning to develop four railway lines through the Siliguri corridor.[15] This move aims to mitigate the impact of any potential border closures with Bangladesh and safeguard India's strategically important territory.[16]

The relative lack of immediate economic impact from such suspensions makes railways the first to be halted when tensions arise. This is also evident in the case of Pakistan, where railway services have been periodically disrupted due to security concerns and political relations, as highlighted in the previous section. The irregularity of services, coupled with inadequate infrastructure, makes railway connections easier to suspend compared to other modes of cross-border transportation.

Furthermore, in Sri Lanka, despite India's investment in upgrading railway infrastructure, there are concerns that India's approach is sometimes perceived as "overbearing."[17] This highlights the importance of managing the political dynamics behind infrastructure development. This approach has left cross-border railways highly susceptible to shifts in political rela-

[14] Findings from fieldwork.
[15] Interview with a member of the Railway Board in February 2024.
[16] Interview with a member of the Railway Board in February 2024.
[17] Interview with a transportation expert in Sri Lanka.

tions, making it difficult to realise the economic benefits that such connectivity could potentially bring.

Given India's emphasis on railway development in the last two decades, progress and the share of freight and passenger movement through railways were expected to be higher than current volumes. With no growth in the share of freight movement between India, Bangladesh, and Nepal, there is concern about the sustainability of cross-border railways. Therefore, it is necessary to take a holistic approach in addressing both policy-level and ground-level challenges to ensure growth in cross-border railways. The next section highlights the specific challenges in improving cross-border rail linkages and the key enablers to facilitate the growth of this mode.

5. Rethinking the Development of Cross-Border Railways—Key Challenges and Enablers

The construction of cross-border railways is a complex process requiring coordination at multiple levels, standardisation in infrastructure upgrades, and the enabling of multi-stakeholder participation. To effectively address these challenges and enhance cross-border railway connectivity, this section identifies six key challenges and enablers. These enablers are crucial for addressing the gaps and ensuring efficient, seamless, and secure cross-border railway operations, fostering regional integration, and boosting economic growth.

a) Strengthening Domestic and Cross-Border Institutional Cooperation

In the South Asian region, all railways are government-owned, reflecting a commonality in the approach to rail transportation across India, Nepal, Sri Lanka, Pakistan, and Bangladesh. For instance, Indian Railways—one of the largest and oldest railway networks in the world—operates as a government department. Despite a degree of autonomy from typical departmental practices, its operations remain under the umbrella of the Ministry of Railways, with functioning overseen by a Railway Board. The different regions of India are managed through 17 zonal railways (Indian Railways, n.d.). However, in terms of the development of cross-border railways—especially through development cooperation—the Railway Board plays a limited role, and conversations are mainly led by India's Ministry of External Affairs (MEA). This is due to the fact that the Railway Board is more focused on the development of domestic railways rather than cross-border railways. Additionally, this also results in limited conversations between Indian railway agencies and those of its neighbouring countries.[18]

In Sri Lanka, the railways operate under the Ministry of Transport and Highways, managed by the General Manager Railways, and supported by three Additional General Managers. The organisational structure includes 10 sub-departments and three units, with each sub-department managed by its respective head who reports directly to the General Manager (Sri Lankan Railway, n.d.). The government significantly influences and funds railway infrastructure, reflecting a common regional trend. However, this centralised oversight presents challenges in inter-departmental cooperation. Moreover, the limited governmental focus on establishing cross-border railway connections has resulted in minimal interaction between Sri Lankan railway departments and their international counterparts, with the foreign ministry being the primary channel for development cooperation.

In Nepal, the Department of Infrastructure Construction and Transport of the Ministry of Physical Infrastructure and Transport (MOPIT) is responsible for making railway policy. Institutional manpower is very small due to the lack of extensive railway services within the country. Recently, the Government of India (GOI) also established a Railway Board; however, there is a lack of clarity in the delegation of responsibilities with the Department of Railways. Nepal Railway Company Limited—a state-owned company under the Department of Railways—operates passenger train services in Nepal. Due to the lack of institutional capacity, manpower, and the overall lack of prioritisation of railways, resource allocation to railways is also low. For instance, in 1927, Nepal had 53 km of railway lines, and in 2023, this number has increased to a mere 58 km (NPC, n.d.).

To encourage cross-border institutional cooperation for railway development, not only do domestic railway institutions need to be strengthened, but facilitated interactions between the railway agencies of the countries in the region are needed. This could be led by national foreign ministries or enabled through

[18] Interview with a member of the Railway Board.

multi-lateral agencies. This will also facilitate the direct sharing of concerns and challenges between the railway agencies, which could potentially lead to better training and capacity-building programmes. None of the South Asian countries have embraced private ownership of railways. India has introduced a nuanced model where several fully government-owned railway corporations—such as Konkan Railway and Dedicated Freight Corridor Corporation of India, Ltd.—coexist with railway entities that involve private sector investors, including Container Corporation of India (CONCOR) and Pipadav Railway. In Sri Lanka, limited private services exist for tourism, including the Viceroy Special. While South Asian countries have a commonality in government ownership, the variations in organisational structures and the level of government influence highlight the diverse approaches taken to navigate the intricate challenges of modernising and sustaining rail transportation systems (World Bank, 2022). Cross-border railway development may be a vision for India and its neighbouring countries, but differing levels of prioritisation of railway projects and addressing the challenges reflect the priorities given by different governments.

Therefore, to strengthen cross-border railway development, India will need to step up and increase engagement at different levels with neighbouring countries. This would range from building infrastructure to supporting the streamlining of institutional setups and capacity building of railway manpower in the countries. It would also require New Delhi to enable more coordination between the MEA, Railway Board, Ministry of Home Affairs, and Ministry of Defence for the coordinated development of cross-border railways. Among the neighbouring countries, Kathmandu will need to allocate more resources to ensure the implementation of its railway plans. This also includes increasing engagements with other bilateral and multi-lateral donors, such as those undertaken by Bangladesh (ADB, 2017).

b) Leveraging India's Development Cooperation for Cross-Border Railway

A large share of India's development cooperation is directed towards its neighbourhood. Approximately 70% of this is directed towards infrastructure building and some towards capacity-building exercises for officials in neighbouring countries (Xavier & Sinha, 2020). India uses mechanisms such as Lines of Credit (LoCs), grants, and concessional loans to engage with its partner countries through various agencies, including the MEA, Ministry of Finance, and EXIM Bank of India. The LoCs are implemented through the latter.

In the immediate neighbourhood, between 2001 and 2023, LoCs worth US$ 7.9 billion were extended to Bangladesh, US$2.6 billion to Sri Lanka, US$1.7 billion to Nepal, US$1.3 billion to Maldives, and US$745.6 million worth of LoCs were extended to Myanmar.[19] Currently, from India's ongoing LoCs in Asia, 17% is directed towards the development of railways in the neighbouring countries, including Bangladesh and Sri Lanka. This includes the purchase of rolling stock, railway machinery and maintenance equipment, and railway line upgrades.[20]

With Bangladesh, India's assistance towards its railway development has been ongoing since 1972, in an attempt to revive its industry and contribute to domestic development. For the fiscal year 1972–73, India set aside a sum of Rs 2,000 million as assistance to Bangladesh (Bhasin, 2003, p. x). Indian assistance was used to repair railway lines, bridges, and airports and return them to service as quickly as possible. Concessional loans were provided for the rehabilitation of Bangladesh's railways and other infrastructure projects. Two LoCs totalling Rs 260 million were also extended. Special bank credits were also made available to Bangladeshi financial institutions for importing specific capital goods, including railway wagons and railway equipment (Bhasin, 2003). Today, Bangladesh is the largest recipient of India's LoCs, with four LoCs worth Rs 7.9 billion extended for infrastructure development across various sectors.

In 2020–21, RITES provided consultancy services to Bangladesh Railway for constructing a dual-gauge railway line from Bogura to Shahid M. Mansur Ali station in Sirajganj, Bangladesh. On July 27, 2020, Indian Railways also flagged off 10 broad-gauge diesel locomotives to Bangladesh from Gede Railway Station in Eastern Railway (Railway Board, 2021a). In 2023, Indian Railways provided 20 broad-gauge locomotives to Bangladesh as grant assistance (*Mint*, 2023). However, a former Indian Ambassador to Bangladesh noted that Dhaka is also purchasing locomo-

[19] Data sourced from MEA Performance Dashboard. https://meadashboard.gov.in/indicators/133
[20] Calculated using data from EXIM bank of India.

tives and coaches from the United States, Indonesia, and Malaysia, highlighting the importance of standardising rolling stock for India.[21]

With Sri Lanka, IRCON started its operation in 2009 for the development of Sri Lankan railways. Projects of over US$1 billion in the Railway sector have been completed under five Indian LoCs to date (Farooqi, 2023). IRCON is currently involved in a US$91.27 million project to upgrade and rehabilitate the railway line from Maho to Omanthai, covering 128 km. Track rehabilitation from Anuradhapura to Omanthai is complete, and work on the Anuradhapura–Maho section is scheduled to begin in January 2024 (HCI Colombo, 2023). Colombo is also purchasing rail coaches from India under the LoCs. In 2021–22, the Integral Coach Factory in Chennai manufactured 109 coaches for Sri Lankan Railways. India also exported diesel-electric locomotives, diesel-electric multiple unit (DEMU) spares, and provided export services consultancy to Sri Lanka (Railway Board, 2021). More recently, in September 2023, India offered 10 locomotives to Sri Lanka, valued at SLR 700 million, through financial assistance to address locomotive shortages in the country.

With Nepal, India has been providing locomotives and diesel engines to Nepal. At the 1995 meeting of the Indo-Nepal High Level Task Force in New Delhi, India agreed to provide two engines and six coaches for the Jayanagar–Janakpur railway as part of its aid package. In 1996, His Majesty's Government of Nepal (HMGN) requested, in writing, that the Indian Embassy in Kathmandu supply "two diesel engines and twelve coaches for the narrow-gauge line at Janakpur railway" (Bhasin, 2005, pp. 2902–2903). The GOI also offered to provide the services of three locomotive drivers to operate the equipment for six months and the service of a supervisor-instructor to train a Nepal Railway driver for six months.

India's LoCs to Nepal recently exceeded US$1.65 billion across four credit lines—US$100 million, US$250 million, US$550 million, and US$750 million (IANS, 2023). These funds are primarily for road projects, hydropower projects, housing, and construction. MEA grants primarily fund India's support for Nepal's railways.

In Bhutan, as talks are ongoing on the development of five railway lines, Indian PSU IRCON has extended its operations to the country to prepare detailed project reports (Railway Board, 2022).

India's strategic advantage in its neighbourhood lies in its capacity to undertake and execute infrastructure projects through robust development cooperation mechanisms, backed by financial tools such as grants and LoCs, which offer a mutually beneficial pathway for enhancing cross-border railway connectivity. This capability is particularly relevant for cross-border railway connectivity, where substantial infrastructure development and financial investment are required. Neighbouring countries, which often have limited financial resources, can benefit significantly from India's support in building and upgrading railway infrastructure. For example, India has upgraded its domestic tunnelling technology expertise to construct railway lines in Jammu and Kashmir and the NER.[22] This expertise could be extended to countries such as Nepal and Bhutan to make their hilly terrain more suitable for railway lines.

Kathmandu has, so far, depended on New Delhi for grants to fund railway development and rolling stock imports. Although China is developing the Kerung (Tibet)–Kathmandu railway line, it has been unwilling to provide grant funding, even though the feasibility study was recently completed using grant funding (Giri, 2022). Experts in Nepal believe that China's proposed railway line would not be economically feasible for Nepal and that Nepal will continue to rely on Indian routes, while seeking favourable conditions from India.[23] However, competition between India and China and the lack of other competitive funding sources for railway development in Nepal could delay implementation of plans in the country.

India needs to be more proactive in its development cooperation support, which should extend beyond financial assistance to include transferring expertise, technology, and best practices in railway management and operations, particularly through strategic allocation of grants and LoCs, comprehensive development agreements, and training programmes for railway staff and drivers, covering technical qualifications and language skills.

[21] Interview with a former Indian High Commissioner to Bangladesh.
[22] Interview with a member of the Railway Board.
[23] Findings from a closed-door roundtable discussion hosted by CSEP on Nepal in June 2023.

c) Improving the Railway Cargo-Handling Infrastructure

Addressing the acute shortage of cargo-handling equipment at key rail yards is essential for efficient cross-border railway connectivity. At the Petrapole and Ranaghat railway yards in India and the Gede and Darshana yards in Bangladesh, cargo-handling equipment is inadequate. For example, during a field visit in July 2023, it was observed that no container trains had travelled between India and Bangladesh for the previous six months, primarily because of inadequate handling and movement (track) infrastructure. This situation highlights the urgent need for infrastructure upgrades to ensure efficient and cost-effective rail transport.

Inadequate platform infrastructure is another significant bottleneck. At Ranaghat, for example, customs officials must physically climb onto wagons to inspect cargo because of a lack of adequate platform infrastructure for goods trains. Constructing elevated platforms with appropriate access points would increase the efficiency of cargo inspection and handling, streamline customs procedures, reduce inspection times, and reduce the risk of accidents.

The practice of using the same labour to unload both trucks and rakes at ICPs creates inefficiencies, as unloading rakes is not prioritised. This practice causes delays and discourages the use of rail transport. Establishing dedicated stations and platforms for goods movement at key locations such as Benapole could significantly reduce these delays. Prioritising the unloading of rakes, using dedicated labour, and streamlined procedures, would improve the efficiency of goods handling.

Establishing dedicated goods stations with state-of-the-art facilities for loading, unloading, and storing goods, as well as modern customs and security infrastructure to ensure smooth and secure transit, at strategic points along the India–Bangladesh border would centralise and expedite the movement and handling of freight.

Infrastructure upgrades require coordinated efforts between the Indian government and the governments of neighbouring countries. Bilateral agreements focused on infrastructure development, streamlined customs procedures, and synchronised railway schedules are essential. Policy support, including subsidies or incentives for exporters using railways, could encourage a shift from road to rail transport.

India could also explore incentivising cross-border railway connectivity by linking it with upgrades undertaken as part of the Dedicated Freight Corridor (DFC) project. In particular, India's Eastern DFC, approximately 80 km from Ranaghat in West Bengal (for India–Bangladesh trains), could significantly improve cross-border railway connectivity. It is also located on the route used for Nepal's third-country goods movement by rail from Kolkata and Haldia ports. Any connection with the DFC would further improve rail transport.[24]

Finally, implementing digital systems for cargo tracking and management could improve the efficiency of cross-border railway connectivity. Automated customs clearance systems, electronic data interchange (EDI) for documentation, and real-time cargo tracking would reduce delays and increase transparency in the supply chain.

d) Standardising Cross-Border Operational Movement Standards and Protocols

Improving cross-border railway standards and protocols is essential to enhance trade efficiency between India and neighbouring countries. Areas needing reform include current practices, such as changing engines at the India–Bangladesh border, using different customs and railway practices, and CONCOR's control over cargo movements.

One reason for the underutilisation of railway connectivity is that exporters prefer road transport. Exporters consider road transport cheaper and more convenient because of better infrastructure and streamlined procedures, such as the availability of more slots for truck parking at ICPs, especially Petrapole.

Improving railway infrastructure involves creating a dedicated railway operational protocol for engine changes at the India–Bangladesh border. Currently, Indian railway engines cannot enter Benapole and must stop at the border, where Bangladeshi engines take over. This process, which takes one to two hours, delays wagons unnecessarily. A bilateral agreement allowing engines from either country to cross the border would reduce transit times and improve the

[24] Interview with a scholar from Princeton University with expertise in India and China's railways.

overall efficiency of cross-border rail transport. Currently, all Inland Container Depots (ICDs) are used exclusively for seaports and land ports, with no rail ICDs to facilitate cargo movement. Furthermore, CONCOR's monopoly prevents private ICDs with railway sidings from sending goods to Bangladesh or Nepal. Allowing private ICDs to participate in cross-border rail transport would increase competition, lower costs, and improve service quality. Expanding the use of rail ICDs for cargo movement to and from Bangladesh could also reduce congestion at overburdened ports such as Ranaghat.

Currently, only exporters, not Customs House Agents (CHAs), can book cargo, which creates difficulties for exporters who rely on CHAs for documentation and cargo consolidation. Introducing a less-than-container-load (LCL) provision for wagons would allow multiple exporters to share space in a single wagon, making rail transport more accessible for smaller shipments. Simplifying booking procedures and allowing CHAs to book cargo would facilitate smoother operations and increase the utilisation of rail transport. A significant bottleneck is the shortage of rakes for cross-border transport, as domestic cargo is prioritised. This shortage particularly affects perishable goods, making rail transport unviable for these commodities.[25] Increasing the allocation of rakes to cross-border transport and ensuring their timely availability would help mitigate delays. Eastern Railways should adopt a balanced approach to rake allocation, considering both domestic and cross-border needs to facilitate seamless trade.

Addressing these issues requires coordinated efforts between India and its neighbours. Reducing redundant processes, increasing the use of ICDs, simplifying booking and customs procedures, and increasing the availability of rakes could substantially improve cross-border railway connectivity. These reforms would not only streamline operations but also make rail transport a more viable and efficient option for exporters, fostering greater economic integration and regional trade growth.

e) Enabling Private Sector Participation

Developing cross-border railways presents significant opportunities for enhancing regional connectivity and economic integration. However, as discussed in Section 5a, development is currently reliant on government funds, with limited private sector involvement.

Several studies have examined the importance of private sector involvement in cross-border railway connectivity (Verougstraete, 2018; Dutzik & Snider, 2011). Private sector participation in railway development—through public-private partnerships (PPPs), direct investment, and operational management contracts—can address some construction and operational challenges by introducing competition, innovation, and additional funding sources. This approach can reduce reliance on grant funding and mitigate delays caused by geopolitical factors. The high-speed railway line between Singapore and Kuala Lumpur, for example, is being funded through a combination of private resources and government funds, totalling US$11 billion. In Europe, PPPs have been used for rail projects (UNESCAP, 2018).

Private sector involvement can also enhance operations. For example, to improve Nepal's third-country trade through Indian seaports, India and Nepal revised the Rail Services Agreement in 2021 to allow private container operators to carry cargo to Nepal. This resulted in Hind Terminals becoming the first private sector operator to transport containers from India's Haldia port to Birgunj ICD in Nepal (SASEC, 2021). However, this provision has not been extended to Bangladesh, despite the start of container movements in 2020. Global shipping and logistics company Maersk has also expressed interest in moving containers to Nepal by rail. Maersk currently operates 13 private container trains in India, which has reduced transit times by 33% compared to road transport (Maersk, 2022). Greater private sector involvement would improve the efficiency of cross-border rail transport.

India needs to standardise provisions for private sector involvement across all its cross-border railway connections to reduce delays and improve the feasibility of cross-border railway projects. Leveraging private sector expertise and funding would enable Nepal to reduce its reliance on geopolitical powers and create a more resilient and efficient railway network, which would, in turn, foster stronger regional connectivity and economic growth.

[25] Findings from fieldwork in Ranaghat and Petrapole.

f) Navigating the Security Challenges in India's Borderlands for Cross-Border Railway Connectivity

Complex security challenges in India's borderlands create significant hurdles that need careful consideration to fully realise the potential of cross-border railway initiatives. India faces unique security challenges on each of its borders with Pakistan, Bangladesh, Nepal, Bhutan, and Myanmar. These tensions require stringent security measures for all infrastructure projects, including railways, to prevent sabotage, espionage, or attacks on other critical infrastructure such as ICPs.

Ensuring the safety of railway projects in the NER, which has a history of insurgency and militancy, requires not only physical security measures but also close coordination with state governments and civil society. Recent unrest in Manipur, which has affected construction of the Imphal–Moreh–Tamu railway line, demonstrates the vulnerability of projects in border regions (Stubbs, 2023).

Porous borders, especially with Bangladesh and Myanmar, facilitate illegal activities such as smuggling, human trafficking, and the drug trade. Effective border management, increased surveillance, and coordinated action with the border security agencies of neighbouring countries are crucial to mitigate these risks.

Railway lines, because of their extensive reach and critical importance, are vulnerable to security risks. This is evident in the case of India and Pakistan, which has experienced repeated instances of drug smuggling, as noted in the previous section. Ensuring the security of railway lines involves not only physical barriers and surveillance but also intelligence operations to pre-empt and prevent threats. Therefore, in addition to coordinating connectivity efforts, sharing intelligence with neighbouring countries could enhance operational effectiveness.

Connectivity in sensitive areas requires modern technologies such as satellite imaging and advanced sensors to monitor and secure vast stretches of railway lines. Integrating these technologies with traditional security measures would create a robust security framework. Cybersecurity is also critical, as railway networks increasingly rely on digital systems for operations and management. Protecting these systems from cyberattacks is essential for ensuring uninterrupted connectivity.

Finally, diplomacy plays a crucial role in addressing security challenges. CBMs and regular dialogue with neighbouring countries can help create an environment conducive to cross-border projects. Joint patrolling and shared security protocols, for example, can foster trust and cooperation.

Addressing the security challenges for cross-border railway connectivity in India's borderlands requires a multi-faceted approach involving responses to geopolitical tensions, insurgency, illegal trade, infrastructure sabotage, and leveraging technology, as well as diplomatic efforts and the involvement of local communities. A holistic and coordinated strategy can transform these challenges into opportunities for regional integration, economic development, and peaceful coexistence. By securing its borderlands and promoting cross-border connectivity, India can help build a more connected neighbourhood.

6. Conclusion

India's active engagement in strengthening cross-border railway connectivity with its neighbouring countries aligns with its "Neighbourhood First" and "Act East" policies. Through the revival, construction, and planning of various railway lines with Bangladesh, Nepal, Bhutan, Myanmar, and Sri Lanka, India aims to enhance regional cooperation, trade, and economic development while also improving connectivity between South Asia and South-East Asia. Yet, India's progress in cross-border railway connectivity has not kept up the momentum in the region.

The benefits of enhanced railway connectivity in a region still grappling with integration challenges are significant. These include the more efficient movement of goods and passengers, lower transportation costs, and a more environmentally friendly mode of transit. India's renewed focus on railway infrastructure reflects a stronger commitment to regional cooperation and economic development in South Asia. Historically, India's reluctance—along with that of its neighbours—combined with capacity limitations, led to an over-reliance on road transportation.

Today, India's emphasis on developing railway connections with neighbouring countries is driven by both political and economic factors, as well as by the need to respond to China's expanding railway infrastructure in the region. By establishing robust cross-border railway infrastructure, India also seeks

to position itself as the key infrastructure developer in the region. However, several challenges have hindered the growth of cross-border railway development, including lack of prioritisation, inadequate infrastructure, and the vulnerability of operations to political crises. These obstacles are compounded by ground-level issues such as the absence of standardised operating procedures, limited private-sector involvement, fragmented institutional cooperation, and the complexities of managing security concerns in India's border regions—all of which have made enhancing railway connectivity particularly difficult.

This paper identifies six enablers to improve India's cross-border railway connectivity. Although India has been a relatively late entrant into the development of cross-border rail, its efforts—spurred by economic growth and geostrategic considerations—are crucial for solidifying its global position as an infrastructure developer. To achieve its foreign policy and connectivity objectives in the neighbourhood, India must address existing challenges and explore cooperative policy options, including partnerships with like-minded regional players.

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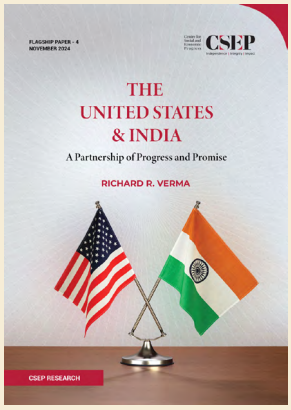
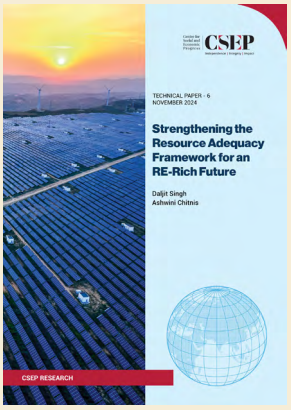
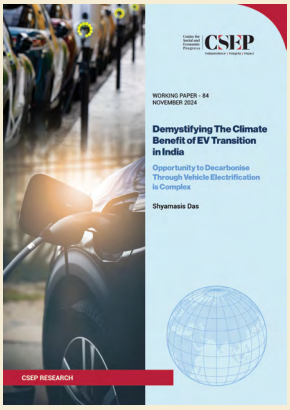
About the author

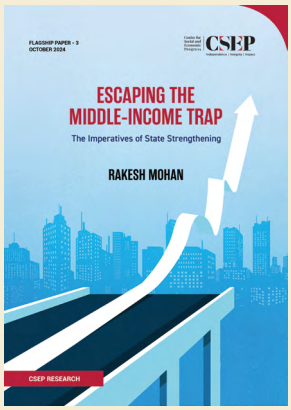
Riya Sinha is an Associate Fellow in Foreign Policy and Security Studies at CSEP. She coordinates the Sambandh Regional Connectivity Initiative, focused on conducting data-driven research to map India's links with its neighbouring countries. She also manages the Sambandh Policy Dialogue, a track 1.5 format, off-the-record forum for experts to exchange perspectives on geo-economic relations between India, South and Southeast Asia, and the larger Indo- Pacific regions. Focused on enhancing regional economic connectivity, her research interest covers trade, logistics, infrastructure, and border management in the Bay of Bengal region. In 2022, Riya was a Visiting Fellow at the Stimson Centre in Washington DC and at the Asian Forum on Global Governance.

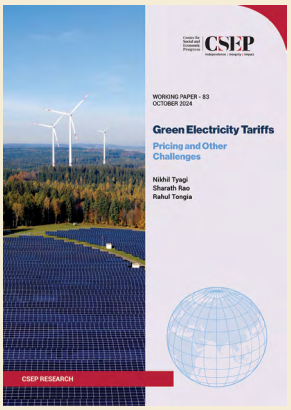
Other publications

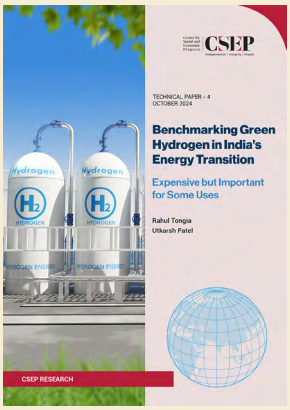


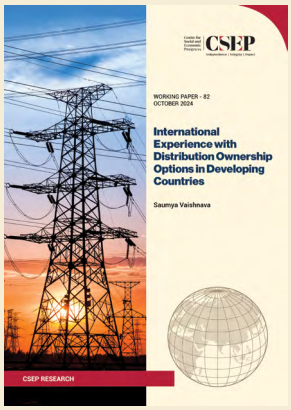


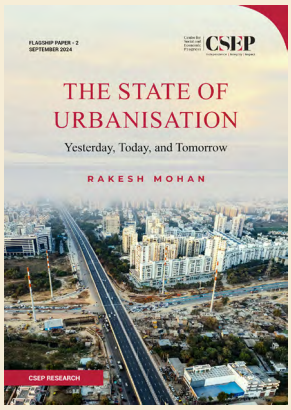


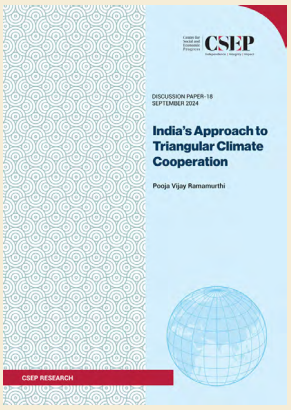


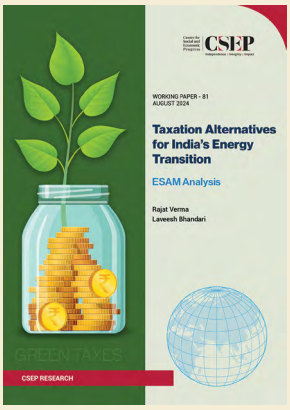


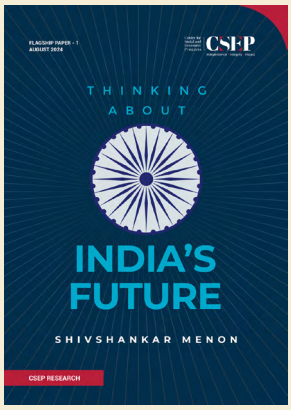


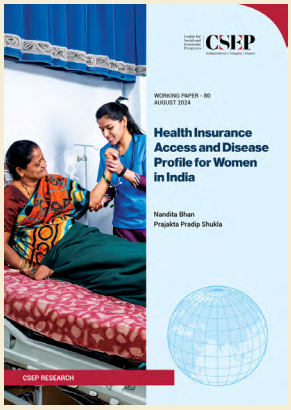


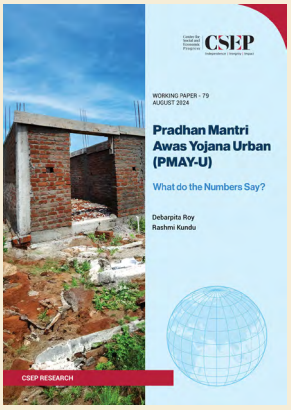


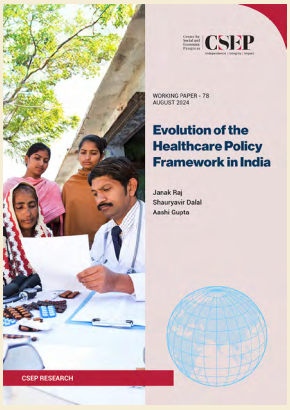


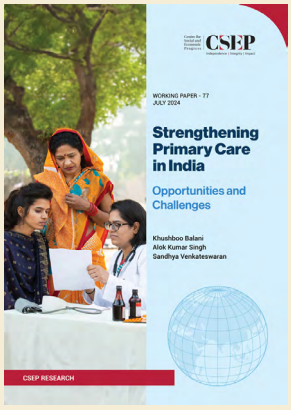












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