ASEAN-India Development and Cooperation Report 2026

Navigating Global Uncertainties and Strengthening Partnership



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Message

Ambassador Rudrendra Tandon
Secretary (East)
Ministry of External Affairs, Government of India

I must congratulate Research and Information System for Developing Countries (RIS) and its scholars at the ASEAN-India Centre (AIC) for coming out with the third edition of the "*ASEAN-India Development and Cooperation Report 2026*"

All countries in Asia face challenging times. The rule based international order set up in 1945 is undergoing a fundamental restructuring. Major power tensions on a variety of security and economic issues are now more acute than ever before. New technologies have the potential of disrupting our economic systems and perhaps even our societies. The centre of gravity of international politics and economics has definitively moved towards Asia.

ASEAN through its remarkable journey that began in 1967 has emerged as a credible locomotive for peace, stability and prosperity in its part of Asia. As an Indian Ocean nation that abuts the ASEAN region, India sees its Comprehensive Strategic Partnership with ASEAN as a partnership that can strengthen resilience in both India and the ASEAN region and also contribute to peace, security and prosperity for the whole of Asia.

As we know, policy makers on both sides are continuously in search for practical and implementable policy ideas to build this partnership in a way that achieves these objectives. This detailed report that covers a very wide range of issues from security to sustainability does just that and contains a rich source of information and ideas for the future of our partnership.

I would like to congratulate Prof. Sachin Kumar Sharma, Director General, RIS and the scholars from the ASEAN-India Centre for this high quality report and the brilliant effort that has gone into its making.

Rudrendra Tandon



Foreword

Prof. Sachin Kumar Sharma
Director General, RIS

Geopolitical tensions, trade fragmentation, technological disruptions and climate-related challenges are reshaping the global economic and strategic landscape. For India and ASEAN, these uncertainties underscore the need for closer regional cooperation and a deeper Comprehensive Strategic Partnership to advance stability, resilience and shared prosperity.

Against this backdrop, the *ASEAN-India Development and Cooperation Report 2026*: *Navigating Global Uncertainties and Strengthening Partnership*, the third edition in the series, brings together scholars and policy experts from India and ASEAN to assess the partnership's opportunities and challenges and identify practical pathways for cooperation.

Its analysis spans four interconnected dimensions: strategic priorities and the Comprehensive Strategic Partnership; economic relations and regional production networks; the blue economy and connectivity; and digital transformation, sustainable development and regional resilience. It calls for integrated, forward-looking and implementation-oriented partnerships.

On economic integration, expanding bilateral trade contrasts with limited regional value-chain linkages and persistent regulatory barriers. The ongoing review of the ASEAN-India Trade in Goods Agreement (AITIGA) offers an opportunity to address these challenges. Stronger services cooperation, better connectivity and more effective development partnerships are equally important.

Beyond trade, maritime connectivity, sustainable ocean-based activities and joint technological capabilities offer economic and strategic benefits. Cooperation in digital public infrastructure, artificial intelligence, renewable energy and climate resilience can help address shared development challenges and foster inclusive, sustainable growth.

To realise these opportunities, the Report offers actionable policy recommendations. Recognising that progress across sectors is mutually reinforcing, it advocates coordinated institutional strengthening, regulatory cooperation, capacity building and practical initiatives that deliver measurable results.

At RIS, we remain committed to evidence-based research and informed policy dialogue on regional economic integration and international development cooperation. I am confident that this Report will inform policymakers, researchers and other stakeholders as India and ASEAN prepare for the 23rd ASEAN-India Summit.

I thank the editors, contributing authors and the team at the ASEAN-India Centre (AIC), RIS, for bringing out this publication. I also acknowledge the continued support of the Ministry of External Affairs (MEA), Government of India, for research and policy engagement on ASEAN-India relations.

I hope this Report will encourage dialogue and new ideas to strengthen a resilient and mutually beneficial ASEAN-India Comprehensive Strategic Partnership.



Sachin Kumar Sharma

Preface

The *ASEAN-India Development and Cooperation Report 2026*, titled "*Navigating Global Uncertainties and Strengthening Partnership*", is published at a time of profound geopolitical and economic change in the Indo-Pacific. The reconfiguration of global supply chains, rapid digital transformation, climate challenges, and evolving security dynamics have reinforced the importance of cooperative frameworks that promote resilience, inclusivity, and sustainable development. In this context, the ASEAN-India Comprehensive Strategic Partnership (CSP) has emerged as an important pillar of regional engagement, linking two of the world's most dynamic growth centres through expanding economic, technological, and developmental cooperation.

Over the past three decades, ASEAN and India have steadily deepened their engagement. What began as a sectoral dialogue partnership has evolved into a multidimensional relationship encompassing trade and investment, connectivity, maritime cooperation, digital transformation, energy security, education, public health, and sustainable development. The elevation of ASEAN-India relations to a Comprehensive Strategic Partnership reflects both the maturity of this relationship and a shared recognition that the complex challenges facing the region require coordinated responses.

Against this backdrop, the present Report provides an interdisciplinary assessment of ASEAN-India relations. It examines key dimensions of cooperation, including trade and investment, connectivity, digital transformation, maritime collaboration, innovation, education, energy security, public health, and climate resilience. In doing so, it evaluates progress achieved, identifies persistent constraints, and highlights emerging opportunities and policy priorities that are likely to shape the future trajectory of the partnership.

The chapters in this volume draw upon diverse perspectives and methodological approaches to explore issues relating to regional economic integration, infrastructure development, digital governance, maritime cooperation, energy transition, climate resilience, and emerging technologies. By situating contemporary developments within their broader historical, institutional, and strategic contexts, the Report seeks to contribute to a deeper understanding of both the opportunities and challenges associated with ASEAN-India cooperation.

As editors, we regard this Report not merely as a record of recent developments, but as a contribution to informed scholarship and evidence-based policy discourse on an increasingly significant regional partnership. The analyses presented herein seek to support policymakers, scholars, and practitioners through empirical insights, critical perspectives, and policy-relevant recommendations.

This volume builds upon the foundations established by the previous editions of the *ASEAN-India Development and Cooperation Report*, published by the ASEAN-India Centre (AIC) at RIS in 2014 and 2021. As the third

edition of the series, the 2026 Report extends this intellectual and policy dialogue by addressing emerging realities and identifying pathways towards deeper regional integration and shared prosperity.

As ASEAN and India look to the future, their partnership remains grounded in mutual trust, shared interests, and a common commitment to peace, stability, and prosperity. The *ASEAN-India Development and Cooperation Report 2026* reflects the enduring strength of this relationship and seeks to contribute to its continued advancement. We express our sincere gratitude to the contributors, reviewers, research associates, and institutional partners whose expertise and support have made this volume possible.

We hope that this Report will serve as a valuable resource for scholars, policymakers, practitioners, and students seeking to better understand the evolving dynamics of ASEAN-India cooperation. More broadly, we trust that it will contribute to ongoing discussions on regional integration, development cooperation, and the pursuit of a stable, inclusive, and prosperous Indo-Pacific order.

Prabir De

Pankaj Vashisht

Sayantan Ghosal

Acknowledgements

The *ASEAN-India Development and Cooperation Report 2026*, titled "*Navigating Global Uncertainties and Strengthening Partnership*", was prepared by the ASEAN-India Centre (AIC) at RIS under the leadership of Dr. Prabir De, Professor, RIS and Dr. Pankaj Vashisht, Associate Professor, RIS and Coordinator, AIC. The Report was coordinated by Dr. Pankaj Vashisht and Dr. Sayantan Ghosal, Consultant, RIS.

All chapters in this Report have been written specifically for this publication, with a particular focus on the ASEAN-India Comprehensive Strategic Partnership (CSP). The Report benefited from inputs and feedback from colleagues at RIS and experts from partner organisations, including the Indian Institute of Foreign Trade (IIFT), the Indian Council for Research on International Economic Relations (ICRIER), the Delhi School of Economics (DSE), and Jawaharlal Nehru University (JNU), among others. AIC at RIS gratefully acknowledges the valuable research inputs and comments provided by contributors and reviewers.

The Report also benefited from the discussions and feedback at the preparatory workshop organised by the AIC at RIS in New Delhi on 13 March 2026.

We gratefully acknowledge the support and overall guidance of Professor Sachin Kumar Sharma, Director General, RIS, and the support provided by the Ministry of External Affairs (MEA). In particular, we thank Ambassador Rudendra Tandon, Secretary (East), Ministry of External Affairs, Government of India, for his encouragement and cooperation.

We also acknowledge the research assistance provided by Mr. Kartik Kishore, Consultant, RIS; Dr. Adrija Ganguly, Consultant, RIS; Ms. Krishna Bhattacharya, Consultant, RIS; Ms. Vanshika Goyal, Research Assistant, RIS; Dr. P Srinivasa Rao, Former Fellow, RIS; and the entire AIC team.

This publication benefited immensely from the support of the RIS Administration. Mr. Sanjay Singh coordinated the production of the Report, and Ms. Karanpreet Kaur undertook its copy-editing. Mr. Pradeep Kumar, Mr. Sachin Singhal, and Mr. Sanjeev Kumar Karna handled the typesetting and publication of the Report.

The views expressed in the Report are those of the contributors and do not represent the views of the Government of India, RIS, AIC, CMEC, or DAKSHIN. The usual disclaimers apply.

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List of Abbreviations

AA	:	Account Aggregator
AADMER	:	ASEAN Agreement on Disaster Management and Emergency Response
AAEC	:	ASEAN Agreement on Electronic Commerce
ABDM	:	Ayushman Bharat Digital Mission
ABEF	:	ASEAN Blue Economy Framework
ABHA	:	Ayushman Bharat Health Account
ACCC	:	ASEAN Connectivity Coordinating Committee
ACCSQ	:	ASEAN Consultative Committee on Standards and Quality
ACIA	:	ASEAN Comprehensive Investment Agreement
ACMECS	:	Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy
ACSP	:	ASEAN Connectivity Strategic Final 5 Plan
ADB	:	Asian Development Bank
ADM 2030	:	ASEAN Digital Masterplan 2030
ADMM	:	ASEAN Defence Ministers' Meeting
ADMM-Plus	:	ASEAN Defence Ministers' Meeting-Plus
AEC	:	ASEAN Economic Community
AEO	:	Authorised Economic Operator
AEP	:	Act East Policy
AFPDP	:	ASEAN Framework on Personal Data Protection
AHA	:	ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management
AHN	:	ASEAN Highway Network
AI	:	Artificial Intelligence
AIBC	:	ASEAN-India Business Council
AIC	:	ASEAN-India Centre
AICRD	:	ASEAN-India Collaborative Research and Development Programme

AIF	:	ASEAN-India Cooperation Fund
AIFDF	:	ASEAN-India Fund for Digital Future
AIFTA	:	ASEAN-India Free Trade Area
AIGF	:	ASEAN-India Green Fund
AIMCI	:	ASEAN-India Maritime Corridor Initiative
AIME	:	ASEAN–India Maritime Exercise
AIMSWG	:	ASEAN-India Maritime Security Working Group
AINTT	:	ASEAN-India Network of Think Tanks
AINU	:	ASEAN-India Network of Universities
AIPOA	:	ASEAN-India Plan of Action
AIRTF	:	ASEAN-India Research and Training Fellowship
AIS	:	Automotive Industry Standards
AISTDF	:	ASEAN-India Science and Technology Development Fund
AITIGA	:	ASEAN-India Trade in Goods Agreement
AITISA	:	ASEAN–India Trade in Services Agreement
AMF	:	ASEAN Maritime Forum
AMO	:	ASEAN Maritime Outlook
AMS	:	ASEAN Member States
ANI	:	Andaman and Nicobar Islands
AOIP	:	ASEAN Outlook on the Indo-Pacific
APAC	:	Asia Pacific Accreditation Cooperation
APAEC	:	ASEAN Plan of Action for Energy Cooperation
APEDA	:	Agriculture and Processed Food Products Export Development Authority
APG	:	ASEAN Power Grid
API	:	Active Pharmaceutical Ingredient
ARF	:	ASEAN Regional Forum
ASEAN	:	Association of Southeast Asian Nations
ASEAN-PMC	:	ASEAN Post Ministerial Conference
ASOD	:	ASEAN Senior Officials on Drug Matters
ASW	:	ASEAN Single Window
AYUSH	:	Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy
BBNJ	:	Biodiversity beyond National Jurisdiction
BCG	:	Boston Consulting Group
BCM	:	Blue Conservation Management
BEE	:	Bureau of Energy Efficiency
BIMSTEC	:	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BIS	:	Bureau of India Standards
BIT	:	Bilateral Investment Treaty
BoA	:	Bureau of Accreditation
BOT	:	Bank of Thailand
BPO	:	Business Process Outsourcing

BPS	:	Bureau of Philippine Standards
BRGCS	:	Brand Reputation Global Compliance Standards
BRI	:	Belt and Road Initiative
BRICS	:	Brazil, Russia, India, China, South Africa
BSBR	:	Bandar Seri Begawan Roadmap
BSN	:	Badan Standardisasi Nasional
CAGR	:	Compound Annual Growth Rate
CAMPA	:	Compensatory Afforestation Fund Management and Planning Authority
CAP	:	Conformity Assessment Procedures
C-DAC	:	Centre for Development of Advanced Computing
CDRI	:	Coalition for Disaster Resilient Infrastructure
CDSCO	:	Central Drugs Standard Control Organization
CECA	:	Comprehensive Economic Cooperation Agreement
CEO	:	Chief Executive Officer
CESDT	:	Centre for Excellence in Software Development and Training
CFO	:	Chief Financial Officer
CLMV	:	Cambodia, Lao PDR, Myanmar, and Vietnam
CMVR	:	Central Motor Vehicles Rules
CoO	:	Certificate of Origin
COO	:	Chief Operating Officer
COP	:	Conference of the Parties
CoWIN	:	Covid Vaccine Intelligence Network
CPCB	:	Central Pollution Control Board
CPPI	:	Container Port Performance Index
CPTPP	:	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CSP	:	Comprehensive Strategic Partnership
DAC	:	Development Assistance Committee
DAKSHIN	:	Global South entre for Excellence
DBT	:	Direct Benefit Transfer
DCA	:	Defence Cooperation Agreement
DEA	:	Digital Economy Agreement
DEFA	:	Digital Economy Framework Agreement
DFTP	:	Duty-Free Tariff Preference Scheme
DGFT	:	Directorate General of Foreign Trade
DIF	:	Digital Integration Framework
DIFAP	:	Digital Integration Framework Action Plan
DIKSHA	:	Digital Infrastructure for Knowledge Sharing
DISCOM	:	Distribution Company
DMF	:	Data Management Framework
DoC	:	Department of Commerce
DOD	:	Department of Official Development

DOM	:	Deep Ocean Mission
DPDP	:	Digital Personal Data Protection Act
DPI	:	Digital Public Infrastructure
DPIIT	:	Department for Promotion of Industry and Internal Trade
DST	:	Department of Science and Technology
DTAA	:	Double Tax Avoidance Agreement
DTC	:	Digital Trust Corridor
DTV	:	Thai Destination Visa
DVA	:	Domestic Value Added
EAMF	:	Expanded ASEAN Maritime Forum
EAS	:	East Asia Summit
EC	:	European Commission
ECoO	:	Electronic Certificate of Origin
EEE	:	Electrical and Electronic Equipment
EEZ	:	Exclusive Economic Zone,
EFTA	:	European Free Trade Association
EIB	:	European Investment Bank
EIC	:	Export Inspection Council
EOI	:	Export-Oriented Industrialisation
EPC	:	Export Promotion Council
EPR	:	Extended Producer Responsibility
ERIA	:	Economic Research Institute for ASEAN and East Asia
ESCAP	:	Economic and Social Commission for Asia and the Pacific
EU	:	European Union
EV	:	Electric Vehicle
EY LLP	:	Ernst & Young Limited Liability Partnership
FACES	:	Family Based Actions for Children and their Environs in the Slums
FAME	:	Faster Adoption and Manufacturing of Electric Vehicles
FAO	:	Food and Agricultural Organization
FDAS	:	Federation for Development of Accreditation Services
FDI	:	Foreign Direct Investment
FIEO	:	Federation of Indian Export Organisation
FoN	:	Freedom of Navigation
FONOPS	:	Freedom of Navigation Operations
FPS	:	Fast Payment Systems
FSSAI	:	Food Safety and Standards Authority of India
FTA	:	Free Trade Agreement
FVA	:	Foreign Value Added
G20	:	Group of Twenty
GACI	:	Global Accreditation Cooperation Incorporated
GATS	:	General Agreement on Trade in Services

GBA	:	Global Biofuel Alliance
GDC	:	Global Development Compact
GDP	:	Gross Domestic Product
GFC	:	Global Financial Crisis
GHG	:	Green House Gas Emissions
GIZ	:	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Corporation for International Cooperation)
GMA	:	Global Maritime Accord
GMP	:	Good Manufacturing Practices
GMV	:	Gross Merchandise Value
GoI	:	Government of India
GVC	:	Global Value Chain
HADR	:	Humanitarian Assistance and Disaster Relief
HCL	:	Hindustan Computers Limited
HELP	:	Hydrocarbon Exploration and Licensing Policy
HLPF	:	High-Level Political Forum on Sustainable Development
HR	:	Human Resources
IAF	:	Indian Air Force
IAFS	:	India-Africa Forum Summit
IAI Work Plan	:	ASEAN Integration Work Plan
IBM	:	International Business Machines Corporation
IBSA	:	India, Brazil, South Africa
ICAO	:	International Civil Aviation Organization
ICCR	:	Indian Council for Cultural Relations
ICMED	:	Indian Certification of Medical Devices
ICRIER	:	Indian Council for Research on International Economic Relations
ICT	:	Information and Communication Technology
ICTT	:	International Container Transshipment Terminal
IDEAS	:	Indian Development and Economic Assistance Scheme
IEA	:	International Energy Agency
IEC	:	International Electrotechnical Commission
IEEPA	:	International Emergency Economic Powers
IFC-IOR	:	Information Fusion Centre-Indian Ocean Region
IFR	:	International Fleet Review
IIT	:	Indian Institute of Technology
ILOs	:	International Liaison Officers
IMBEX	:	India–Myanmar Bilateral Army Exercise
IMCOR	:	Indo-Myanmar Coordinated Patrol
IMEC	:	India-Middle East-Europe Economic Corridor
IMO	:	International Maritime Organization
IMSS	:	Indian Maritime Security Strategy

IMT-GT	:	India-Malaysia-Thailand Growth Triangle
INDICOFS	:	Indian Coffee Sustainability Standards and Certification Scheme
IND-INDO CORPAT	:	India–Indonesia Coordinated Patrol
INMSS	:	Indian Navy Maritime Security Strategy
IOR	:	Indian Ocean Region
IORA	:	Indian Ocean Rim Association
IoT	:	Internet of Things
IP	:	Intellectual Property
IPCC	:	Intergovernmental Panel on Climate Change
IPEF	:	Indo-Pacific Economic Framework
IPMDA	:	Indo-Pacific Partnership for Maritime Domain Awareness
IPMSC	:	Indo-Pacific Maritime Security Cooperation
IPOI	:	Indo-Pacific Oceans Initiative
IPPC	:	International Plant Protection Committee
IQAS	:	International Quality and Accreditation
ISA	:	International Solar Alliance
ISDS	:	Investor-State Dispute Settlement
ISI	:	Import Substitution Industrialisation
INS	:	Indonesian National Standards
ISO	:	International Organization for Standardization
ISRO	:	Indian Space Research Organisation
IT	:	Information Technology
ITA	:	Information Technology Agreement
ITA	:	International Tourist Arrival
ITEC	:	Indian Technical and Economic Cooperation
ITeS	:	IT-enabled Services
ITMOs	:	Internationally Transferred Mitigation Outcomes
IUU	:	Illegal, Unreported and Unregulated
IWT	:	Inland Water Transport
JAM	:	Jan Dhan–Aadhaar–Mobile
JICA	:	Japan International Cooperation Agency
JJM	:	Jal Jeevan Mission
JSI	:	Joint Statement Initiative
KAN	:	Komite Akreditasi Nasional
KMUTT	:	King Mongkut's University of Technology Thonburi
LDCs	:	Least Developed Countries
LEP	:	Look East Policy
LiFE	:	Lifestyle for Environment
LoCs	:	Lines of Credit
LPI	:	Logistics Performance Index
LSBCI	:	Liner Shipping Bilateral Connectivity Index

LSCI	:	Liner Shipping Connectivity Index
MAGIC	:	Maritime Administration and Governance Information Collation Systems
MAHASAGAR	:	Mutual and Holistic Advancement for Security and Growth Across Regions
MAITREE	:	India–Thailand Joint Military Exercise
MARSS	:	Maritime Automated Routing and Reporting System
MCCs	:	Model Contractual Clauses
MDA	:	Maritime Domain Awareness
MDGs	:	Millennium Development Goals
MDT	:	Mutual Defence Treaty
MEA	:	Ministry of External Affairs
MeitY	:	Ministry of Electronics and Information Technology
MGC	:	Mekong-Ganga Cooperation
MICECA	:	India-Malaysia Comprehensive Economic Cooperation Agreement
MIDCOM	:	Malaysia-India Defence Coordination Committee
MIEC	:	Mekong–India Economic Corridor
MIIT	:	Myanmar Institute of Information Technology
MISHTI	:	Mangrove Initiative for Shoreline Habitats and Tangible Incomes
MNE	:	Multinational Enterprises
MOD	:	Ministry of Ocean Development
MoEFCC	:	Ministry of Environment, Forest and Climate Change
MoES	:	Ministry of Earth Sciences
MoU	:	Memorandum of Understanding
MPAC	:	Master Plan on ASEAN Connectivity
MPEDA	:	Marine Products Export Development Authority
MRA	:	Mutual Recognition Agreements
MRE	:	Marine Renewable Energy
MRIO	:	Multi-Regional Input-Output Database
MRV	:	Measurement, Reporting and Verification
MS	:	Malaysian Standards
MSME	:	Micro, Small, and Medium Enterprises
Mtoe	:	Million Tonnes of Oil Equivalent
NAB	:	National Accreditation Body
NABCB	:	National Accreditation Board for Certification Bodies
NABL	:	National Accreditation Board for Testing and Calibration Laboratories
NAM	:	Non-Aligned Movement
NAPCC	:	National Action Plan on Climate Change
NCCF	:	Network for Certification and Conservation of Forests
NDCs	:	Nationally Determined Contributions
NDMA	:	National Disaster Management Authority
NGT	:	National Green Tribunal
NITI	:	National Institution for Transforming India

NMPI	:	National Multidimensional Poverty Index
NOAA	:	National Oceanic and Atmospheric Administration
NPL	:	National Physical Laboratory
NPOP	:	National Promotion for Organic Production
NQI	:	National Quality Infrastructure
NSB	:	National Standards Body
NSFI	:	National Strategy for Financial Inclusion
NTB	:	Non-Tariff Barrier
NTM	:	Non-Tariff Measures
ODA	:	Official Development Assistance
OECD	:	Organisation for Economic Co-operation and Development
OECD-DAC	:	Organisation for Economic Co-operation and Development – Development Assistance Committee
ONDC	:	Open Network for Digital Commerce
OPHI	:	Oxford Poverty and Human Development Initiative
ORE	:	Ocean Renewable Energy
OTEC	:	Ocean Thermal Energy Conversion
PAB	:	Philippine Accreditation Bureau
PAR	:	Piracy and Armed Robbery
PCS	:	Port Community Systems
PDF	:	Project Development Fund
PEFEC	:	Programme for Endorsement Certification
PIB	:	Press Information Bureau
PLI	:	Production Linked Incentive
PLSCI	:	Port Liner Shipping Connectivity Index
PMAY	:	Pradhan Mantri Awaas Yojana
PMJDY	:	Pradhan Mantri Jan Dhan Yojana
PMUY	:	Pradhan Mantri Ujjwala Yojana
PNG	:	Papua New Guinea
PNS	:	Philippine National Standards
POA	:	Plan of Action
POSCO	:	Pohang Iron and Steel Company
PPE	:	Personal Protective Equipments
PRASHAD	:	Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive
PTA	:	Preferential Trade Agreement
QAI	:	Quality and Accreditation Institute
QCI	:	Quality Control of India
QCO	:	Quality Control Orders
QIPs	:	Quick Impact Projects
QRC	:	Quick Response Code
QUAD	:	Quadrilateral Security Dialogue

RASFF	:	EU Rapid Alert System for Food and Feed
RCA	:	Revealed Comparative Advantage
RCEP	:	Regional Comprehensive Economic Partnership
RECAAP	:	Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia
RIS	:	Research and Information System for Developing Countries
RoO	:	Rules of Origin
RSAF	:	Republic of Singapore Air Force
RSPO	:	Roundtable on Sustainable Palm Oil
S&T	:	Science and Technology
SAARC	:	South Asian Association for Regional Cooperation
SAC	:	Singapore Accreditation Council
SAGAR	:	Security and Growth for All
SAR	:	Maritime Safety and Rescue
SARSO	:	South Asian Regional Standards Organization
SBM	:	Swachh Bharat Mission
SC-CPTF	:	Sub-Committee on Customs Procedure and Trade Facilitation
SCI	:	Shipping Corporation of India
SCO	:	Shanghai Cooperation Organisation
SC-ROO	:	Sub-Committee on Rules of Origin
SCS	:	South China Sea
SC-SPS	:	Sub-Committee on Sanitary and Phytosanitary Measures
SC-STRACAP	:	Sub-Committee on Technical Regulations and Conformity Assessment Procedure
SDGs	:	Sustainable Development Goals
SEAFDEC	:	Southeast Asian Fisheries Development Centre
SEPA	:	Single Euro Payments Area
SIDS	:	Small Island Developing States
SIHUB	:	Saigon Innovation Hub
SIMBEX	:	Singapore-India Maritime Bilateral Exercise
SITMEX	:	Singapore–India–Thailand Maritime Exercise
SLOCs	:	Sea Lines of Communication
SLS	:	Student Learning Space
SMEs	:	Small and Medium Enterprises
SOE	:	State-Owned Enterprise
SOPs	:	Standard Operating Protocol
SPS	:	Sanitary and Phytosanitary Measures
STAMEQ	:	Directorate for Standards, Metrology and Quality
STI	:	Science, Technology and Innovation
STRI	:	Trade in Services Restriction Index
SWAYAM	:	Study Webs of Active Learning for Young Aspiring Minds
TAC	:	Treaty of Amity and Cooperation

TBT	:	Technical Barriers to Trade
TCS	:	Tata Consultancy Services
TCTP	:	Third Country Training Programme
TCVN	:	Vietnam Standards
TEC	:	Telecommunication Engineering Centre
TEU	:	Twenty-foot Equivalent Unit
TICA	:	Thailand International Cooperation Agency
TIP	:	Trans-border International Platform
TIS	:	Thai Industrial Standards
TISI	:	Thai Industrial Standards Institute
TPR	:	Trade Policy Review
UAE	:	United Arab Emirates
UHC	:	Universal Health Coverage
UI	:	User Interface
UK	:	United Kingdom
UN	:	United Nations
UNCLOS	:	United Nations Convention on the Law of the Sea
UNCTAD	:	United Nations Conference on Trade and Development
UNDP	:	United Nations Development Programme
UNDRR	:	United Nations Office for Disaster Risk Reduction
UNECE	:	United Nations Economic Commission for Europe
UNESCAP	:	United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC	:	United Nations Framework Convention on Climate Change
UNGA	:	United Nations General Assembly
UNP	:	Unified Nomad Pass
UNSC	:	United Nations Security Council
UOB	:	United Overseas Bank
UPI	:	United Payment Interface
US FONOPS	:	United States Freedom of Navigation Operations
USA	:	United States of America
VINBAX	:	Vietnam-India Bilateral Army Exercise
VNR	:	Voluntary National Review
WAPCOS	:	Water and Power Consultancy Services
WBG	:	World Bank Group
WHO	:	World Health Organization
WOAH	:	World Organization for Animal Health
WTO	:	World Trade Organization

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Executive Summary

The ASEAN-India partnership has evolved considerably over the past three decades, expanding from a predominantly economic engagement into a multifaceted relationship encompassing strategic cooperation, trade and investment, connectivity, technology and sustainable development. Its elevation to a Comprehensive Strategic Partnership (CSP) in 2022 marked an important milestone. This reflects the growing convergence of both sides' strategic and developmental priorities. The partnership has gained significance in India's Act East Policy and ASEAN's engagement with external partners. However, the ASEAN-India partnership is entering a new phase amid profound changes in the regional and global environment. Intensifying geopolitical competition, geo-economic fragmentation, disruptions in global supply chains, technological transformation and growing climate-related challenges are reshaping the conditions for regional cooperation. While these developments are creating uncertainties, they are also presenting opportunities to diversify production networks, strengthen maritime cooperation, accelerate digital transformation and enhance regional resilience. As ASEAN and India prepare for the 23rd ASEAN-India Summit, the challenge is to translate this expanding engagement into deeper economic integration, stronger regional resilience and tangible developmental outcomes.

Against this backdrop, the *ASEAN-India Development and Cooperation Report 2026: Navigating Global Uncertainties and Strengthening Partnerships* examines the evolving partnership through four interrelated dimensions: strategic priorities and the Comprehensive Strategic Partnership; dynamics of economic relations; blue economy and connectivity; and digital transformation, sustainable development and regional resilience. Drawing on contributions from scholars and policy experts from India and ASEAN, the Report assesses progress, identifies persistent challenges and outlines priorities for strengthening cooperation. A central message emerging from the Report is that the next phase of ASEAN-India relations must focus on translating strategic convergence and institutional commitments into concrete initiatives that deliver measurable economic, strategic and developmental benefits.

I. Strengthening the Comprehensive Strategic Partnership amid Global Uncertainties

The first part of this Report examines the changing strategic environment and its implications for ASEAN-India cooperation. Intensifying competition between major powers, geopolitical conflicts and

growing uncertainty surrounding global governance are reshaping the regional order. These developments have important implications for ASEAN and India as both seek to preserve strategic autonomy, maintain diversified partnerships and avoid excessive dependence on any single major power. The Report points out that there is considerable convergence between ASEAN's commitment to centrality and India's emphasis on strategic autonomy and multi-alignment. Both recognise the importance of maintaining an open, inclusive and rules-based Indo-Pacific, strengthening regional institutions and promoting the peaceful resolution of disputes. However, their strategic perspectives are not identical. While India's interests extend across the Indian Ocean and the wider Indo-Pacific, ASEAN's security outlook is primarily focused on developments in Southeast Asia, particularly the South China Sea. These differences underline the importance of flexible and inclusive cooperation arrangements that accommodate diverse national priorities.

Maritime security emerges as a particularly important area of strategic convergence. The maritime domain connecting the Indian and Pacific Oceans is central to regional trade, energy security and economic prosperity. At the same time, the region is facing traditional and non-traditional security challenges, including geopolitical tensions, piracy, maritime crime, illegal fishing, marine pollution and climate-related disasters. The Report argues that meaningful cooperation need not depend on complete convergence in strategic perceptions. Instead, it proposes a pragmatic two-track framework combining ASEAN-wide cooperation with bilateral engagement between India and individual ASEAN member states. Under this approach, ASEAN-wide initiatives should concentrate on areas where consensus is achievable, including maritime domain awareness, information sharing, search and rescue, and humanitarian assistance and disaster relief. Bilateral arrangements, in turn, could accommodate more specialised cooperation, including operational coordination and capability development. Such an approach would strengthen maritime engagement while preserving ASEAN centrality and respecting the differing security priorities of member states.

An important contribution of the Report is its emphasis on moving from broad strategic convergence towards practical institutional arrangements. Rather than creating overlapping regional mechanisms, the priority should be to strengthen existing institutions and develop targeted cooperation in areas where mutual interests are clearly established. Maritime cooperation provides an immediate opportunity to demonstrate how the CSP can generate tangible outcomes.

Key Recommendations

- Establish an ASEAN-India Maritime Security Working Group (AIMSWG) within the existing dialogue architecture, with a clearly defined mandate, institutional support and adequate resources.
- Adopt a two-track framework for maritime cooperation, combining ASEAN-wide initiatives in areas of common interest with bilateral arrangements for more specialised operational and capability-building activities.
- Expand liaison arrangements between ASEAN coastal states and India's Information Fusion Centre–Indian Ocean Region to strengthen maritime domain awareness and information sharing.
- Undertake an assessment of communication systems and coordination procedures among naval and coast guard agencies, particularly for search and rescue, humanitarian assistance and disaster relief, to improve operational interoperability.
- Initiate technical cooperation on undersea cable protection under the Indo-Pacific Oceans Initiative.

II. Deepening Economic Relations and Regional Production Networks

The second part of the Report examines ASEAN-India economic relations, focusing on merchandise trade,

services, regional value chains, regulatory cooperation and development partnerships. It highlights that despite substantial expansion in bilateral trade and a well-established institutional framework, the full potential of the economic partnership has not been realised. ASEAN has emerged as one of India's most important trading partners, with bilateral merchandise trade expanding significantly since the implementation of the ASEAN-India Trade in Goods Agreement (AITIGA) in 2010. However, this expansion has been uneven, leading to a widening of India's merchandise trade deficit. The existing trade pattern reflects structural differences in production capabilities, industrial competitiveness and integration into regional manufacturing networks. Several ASEAN economies, particularly Singapore, Malaysia, Thailand and Vietnam, are deeply embedded in East Asian production networks, whereas India's participation remains comparatively limited. Consequently, preferential trade arrangements alone have not been sufficient to generate the expected degree of regional value-chain integration.

The fragmentation of international production has created opportunities for economies to specialise in different stages of manufacturing, particularly in electronics, machinery and automotive components. India possesses significant manufacturing, services and technological capabilities that could complement ASEAN's established production ecosystems. However, existing economic relationships have not generated the level of production integration that might be expected given the geographical proximity and economic potential of the two sides. Strengthening these linkages requires a shift from conventional trade promotion towards arrangements that facilitate cross-border production sharing, reduce transaction costs and improve regulatory compatibility. The ongoing review of AITIGA provides an opportunity to address these challenges. Beyond conventional market access and trade facilitation measures, the Report advances specific proposals for making AITIGA more supportive of regional value chains. These include incorporating a digital trade chapter into AITIGA 2.0, potentially on a provisional or best-efforts basis, and using the emerging ASEAN Digital Economy Framework Agreement (DEFA) as a reference for digital trade provisions. It also proposes greater regulatory alignment with relevant provisions of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), without treating accession as a necessary precondition. Such measures could help address gaps in the existing agreement and improve the ability of firms to participate in increasingly interconnected regional production and services networks.

An important constraint on deeper integration arises from differences in technical regulations, product standards, sanitary and phytosanitary requirements, and conformity assessment procedures. As tariffs have declined, such regulatory differences have become increasingly significant determinants of effective market access. Their impact is particularly pronounced for MSMEs, which often lack the resources to comply with multiple testing, certification, and documentation requirements. The Report therefore emphasises that regulatory cooperation should be treated as an integral component of trade integration rather than a supplementary trade facilitation measure**.** Greater cooperation among standards bodies, accreditation agencies, testing laboratories and regulatory authorities, particularly in sectors facing high compliance costs, could reduce unnecessary duplication and improve market access without compromising legitimate health, safety and environmental objectives.

The analysis also identifies services as a major source of unrealised economic potential. India's competitive strengths in information technology, business and professional services complement ASEAN's capabilities in tourism, transport, logistics and financial services. However, regulatory restrictions, barriers to market access and limitations on professional mobility continue to constrain services integration despite the existing ASEAN-India Trade in Services Agreement. The Report highlights the importance of expanding digitally delivered services, strengthening regulatory dialogue and improving

recognition of professional qualifications. Progress in these areas would not only increase bilateral services trade but also support manufacturing integration, given the growing role of services in modern production networks.

Beyond trade and production, development cooperation has become an increasingly important dimension of the partnership. India's engagement has evolved from traditional technical assistance and capacity building towards a broader portfolio encompassing infrastructure, concessional finance, community-level development projects and emerging technologies. Since 2015, India has provided approximately 15,000 capacity-building and ITEC training slots, while its development cooperation portfolio includes around US$ 1.22 billion in Lines of Credit and approximately 200 Quick Impact Projects (QIPs) in the Mekong subregion. These initiatives have supported development across infrastructure, agriculture, education, healthcare, energy and human resources. The Report nevertheless identifies scope for making development cooperation more responsive to evolving regional priorities and more effective in delivering outcomes. Particular emphasis has been placed on expanding capacity-building opportunities, sharing India's experience in digital public infrastructure, replicating successful agricultural and irrigation initiatives in Cambodia, Lao PDR and Vietnam, and strengthening cooperation in renewable energy, healthcare and traditional medicine. The timely completion of major connectivity projects, particularly the India-Myanmar-Thailand Trilateral Highway, remains an important priority. The Report also highlights the potential of innovative financing, triangular cooperation and stronger local ownership to enhance the effectiveness and sustainability of development initiatives.

Overall, the analysis underscores that the principal challenge for ASEAN-India economic cooperation is no longer simply to expand trade, but to create stronger productive and institutional linkages capable of sustaining a more balanced and mutually beneficial economic partnership**.** Addressing this challenge requires coordinated progress across trade policy, industrial integration, services, regulatory cooperation and development partnerships.

Key Recommendations

- **Restart the AITIGA**: Reorient AITIGA 2.0 towards regional value-chain integration: Incorporate a digital trade chapter, potentially on a provisional or best-efforts basis, drawing on ASEAN's emerging Digital Economy Framework Agreement, and explore greater alignment with relevant international trade provisions.
- **Strengthen regional production networks**: Facilitate cross-border production sharing by reducing administrative barriers, improving logistics, and investing in skills and productivity.
- **Deepen services integration**: Improve market access for digitally delivered, professional and business services through regulatory dialogue, mutual recognition of professional qualifications and greater facilitation of professional mobility.
- **Enhance regulatory compatibility**: Strengthen cooperation in technical standards, accreditation, testing and conformity assessment, prioritising sectors where regulatory differences impose significant trade costs, particularly on MSMEs.
- **Expand development cooperation in emerging sectors**: Prioritise digital public infrastructure, renewable energy, sustainable agriculture, healthcare and traditional medicine, building on existing cooperation frameworks and successful initiatives.
- **Strengthen capacity building and knowledge partnerships**: Expand ITEC training opportunities and ICCR scholarships and replicate successful agricultural and irrigation cooperation projects undertaken in Cambodia, Lao PDR and Vietnam.
- **Improve development project delivery and connectivity**: Prioritise timely implementation of the India-Myanmar-Thailand Trilateral Highway and other connectivity initiatives, while strengthening local ownership and exploring innovative financing and triangular cooperation.

III. Harnessing the Blue Economy and Strengthening Connectivity

The third part of the Report examines the growing importance of the blue economy, maritime cooperation and connectivity. It highlights that the maritime domain should be viewed not only as a space for trade and security but also as a source of economic opportunities, technological innovation, environmental sustainability and regional integration.

The Blue Economy has emerged as an important development priority for both ASEAN and India. Southeast Asia possesses extensive maritime resources, rich marine biodiversity and some of the world's busiest shipping routes. India, with its long coastline, extensive exclusive economic zone and growing maritime capabilities, similarly recognises the blue economy as an important driver of growth, employment and sustainable development. Opportunities exist across traditional sectors such as fisheries, aquaculture, maritime transport, coastal tourism and port services, as well as emerging activities including marine biotechnology, offshore renewable energy and ocean-related technologies. ASEAN's *Blue Economy Framework*, adopted in 2023, and India's *Maritime India Vision 2030* and *Maritime Amrit Kaal Vision 2047* provide complementary policy foundations for strengthening cooperation. However, the expansion of ocean-based economic activities must be accompanied by effective environmental governance. Overfishing, illegal, unreported and unregulated fishing, marine pollution, biodiversity loss and climate-related risks threaten maritime resources and coastal livelihoods. The Report therefore emphasises the importance of combining investment and innovation with marine conservation, sustainable resource management and inclusive coastal development.

A further opportunity lies in moving beyond conventional maritime cooperation towards joint industrial and technological initiatives. The Report distinguishes between cooperation, which involves coordination of existing capabilities, and collaboration, which entails jointly developing technologies, institutions and capabilities. Opportunities exist in shipbuilding, ship repair, green shipping, port modernisation, maritime logistics, marine scientific research and offshore renewable energy. One specific proposal concerns collaborative development, acquisition and deployment of amphibious aircraft and seaplanes for maritime surveillance, search and rescue, disaster relief, environmental monitoring and logistics support to remote islands. The potential for India-Japan-ASEAN collaboration in this area is also explored.

Connectivity remains central to translating geographical proximity into stronger economic integration. However, the Report emphasises that connectivity must extend beyond roads, ports and shipping routes to encompass aviation, multimodal logistics, digital infrastructure, payment networks, energy interconnections and regulatory arrangements. Physical connectivity initiatives, including the India-Myanmar-Thailand Trilateral Highway and the Kaladan Multimodal Transit Transport Project, remain important for linking South and Southeast Asia. Their economic potential, however, depends on complementary investments in border infrastructure, customs modernisation, transport services and regulatory coordination. Air connectivity has also become increasingly important for tourism, business travel, professional mobility and trade in time-sensitive goods. ASEAN accounted for approximately one-fifth of India's international air passenger traffic in 2024-25, highlighting the importance of aviation links for regional integration.

A particularly important contribution of the Report is its emphasis on shifting attention from connectivity expansion to corridor performance. Infrastructure development alone does not guarantee efficient trade or resilient supply chains. The benefits of connectivity depend on transport reliability, logistics efficiency, customs clearance, digitalisation and interoperability. The Report identifies three essential components of connectivity competence: performance transparency, functional interoperability and maritime-hinterland integration.

Building on these considerations, the Report proposes an ASEAN-India Maritime Corridor Initiative (AIMCI) as a practical mechanism for improving the performance and resilience of maritime corridors. The proposed initiative would combine connectivity monitoring, performance measurement and strategic supply-chain mapping. This would enable ASEAN and India to move beyond infrastructure provision towards measurable improvements in logistics efficiency, trade costs and supply-chain reliability.

Key Recommendations

- Develop a structured ASEAN-India Blue Economy partnership covering sustainable fisheries and aquaculture, marine biotechnology, offshore renewable energy, marine scientific research and maritime skills development.
- Strengthen joint maritime industrial and technological collaboration in shipbuilding, ship repair, green shipping, port modernisation and maritime logistics, including exploring the collaborative development and deployment of amphibious aircraft and seaplanes.
- Prioritise the operationalisation of existing connectivity projects, particularly the India-Myanmar-Thailand Trilateral Highway and the Kaladan Multimodal Transit Transport Project, supported by improvements in border infrastructure, customs procedures and transport services.
- Establish the ASEAN-India Maritime Corridor Initiative (AIMCI) to improve the efficiency, reliability and resilience of maritime transport corridors.
- Develop a maritime connectivity monitoring system and corridor performance dashboard, tracking indicators such as port efficiency, vessel turnaround times, cargo dwell times, transit times and customs clearance performance.
- Create a strategic supply-chain corridor platform to map critical mineral and energy transport routes, identify vulnerable logistics nodes and support coordinated resilience planning.
- Strengthen multimodal and maritime-hinterland integration through logistics digitalisation, functional interoperability and closer coordination between ports, transport operators and regulatory authorities.

IV. Digital Transformation, Sustainable Development and Regional Resilience

The fourth and final part of the Report examines emerging areas of cooperation that are likely to shape the future trajectory of ASEAN-India relations. Digital technologies, artificial intelligence, sustainable development, climate change and energy transition are transforming economic systems and creating new opportunities for regional partnerships.

Public policy initiatives such as digital public infrastructure and a rapidly expanding technology ecosystem have been driving digital transformation in India. Programmes such as Aadhaar, the Unified Payments Interface, DigiLocker, the Ayushman Bharat Digital Mission and the IndiaAI Mission have contributed to the expansion of digital services, financial inclusion, public service delivery and innovation. ASEAN has pursued regional digital integration through initiatives promoting cross-border payments, e-commerce, digital connectivity, data governance and digital skills. The ASEAN Digital Economy Framework Agreement and regional AI governance initiatives provide important opportunities for strengthening cooperation. The Report identifies significant complementarities between India's experience in digital public infrastructure and ASEAN's regional digital integration efforts. Knowledge sharing and technical cooperation in digital identity, payments, public service delivery and digital governance could support inclusive digital transformation.

Artificial intelligence represents another promising area. AI-enabled technologies are increasingly influencing healthcare, education, agriculture, financial services, manufacturing and public administration. However, their developmental benefits depend on

access to infrastructure, skills, affordable technologies and appropriate governance frameworks. The Report emphasises the need to balance innovation with privacy, inclusion, transparency, accountability and responsible AI deployment.

The emergence of digital nomadism also presents opportunities for strengthening people-to-people connectivity, knowledge exchange and innovation networks. Advances in communication technologies and the growth of remote working have enabled skilled professionals to work across national boundaries, creating opportunities for tourism, services trade and entrepreneurship. Realising these benefits requires supportive regulatory arrangements, reliable digital infrastructure and policies addressing visas, taxation and employment conditions.

Climate change and energy transition are particularly important areas for future cooperation. Both ASEAN and India are vulnerable to extreme weather events, rising temperatures, coastal erosion and other climate-related risks. At the same time, rapid economic growth and industrialisation are increasing demand for energy and natural resources. The Report identifies growing convergence in renewable energy, climate change mitigation and adaptation, and sustainable resource management. Nevertheless, institutional fragmentation, inadequate climate finance, regulatory differences and limited energy market integration continue to constrain cooperation. Greater collaboration is needed in renewable energy technologies, energy efficiency, electricity interconnections, climate-resilient infrastructure, sustainable finance and environmental governance. The Report identifies opportunities in solar photovoltaics, offshore wind, battery technologies, critical minerals and green hydrogen. It also emphasises the importance of compatible technical standards, certification arrangements and carbon accounting approaches to facilitate investment and technology deployment. A particularly important proposal concerns the establishment of an Indo-Pacific Trans-border Information Platform to strengthen climate data sharing, modelling, disaster preparedness and early warning systems. Such a platform could improve regional capacities to anticipate and respond to climate-related risks while supporting more informed policymaking.

The analysis also underscores that digital transformation and sustainable development should be pursued as mutually reinforcing priorities. By supporting climate monitoring, efficient resource management, renewable energy integration, sustainable agriculture and disaster preparedness, digital technologies can enable ASEAN and India to respond more effectively to shared challenges.

Key Recommendations

- Strengthen structured cooperation in digital public infrastructure, particularly digital identity, interoperable payments, public service delivery and digital governance, drawing on complementary experiences in India and ASEAN.
- Promote responsible and inclusive AI development through cooperation in governance frameworks, digital skills, technical capacity building and applications in healthcare, agriculture, education and public administration.
- Facilitate digital nomadism and cross-border professional mobility by addressing regulatory barriers relating to visas, taxation, employment conditions and digital infrastructure.
- Expand cooperation on sustainable development through knowledge sharing and capacity building in social protection, healthcare, education, financial inclusion, sustainable agriculture and disaster management.
- Strengthen renewable energy and energy-transition partnerships in solar photovoltaics, offshore wind, battery technologies, critical minerals, green hydrogen and electricity interconnections.
- Develop compatible technical standards and certification frameworks for green hydrogen, carbon accounting and sustainable finance to facilitate investment and technology cooperation.
- Establish an Indo-Pacific Trans-border Information Platform for climate data sharing, modelling, early warning and disaster preparedness.

- Mobilise innovative and blended finance for renewable energy, climate-resilient infrastructure and sustainable development, including through partnerships with multilateral development institutions.

The ASEAN-India partnership has entered a phase in which the depth and effectiveness of cooperation will matter as much as its expansion. Over the past three decades, both sides have established a broad institutional framework and developed considerable convergence on regional stability, economic integration and sustainable development. However, the changing global environment demands a more focused, implementation-oriented and forward-looking approach. The Report demonstrates that the partnership's greatest potential lies in connecting its strategic, economic and developmental dimensions. Maritime security can reinforce economic connectivity; deeper production networks can support trade diversification; digital technologies can improve service delivery and economic integration; and cooperation in the blue economy and energy transition can contribute to sustainable growth and resilience.

As ASEAN and India prepare for the 23rd ASEAN-India Summit, there is an opportunity to define a more ambitious yet practical agenda for the next phase of cooperation. Building on shared interests, complementary capabilities and established institutions, both sides can develop a partnership that is more economically integrated, technologically connected, environmentally sustainable and strategically resilient. The central task ahead is to translate the promise of the Comprehensive Strategic Partnership into concrete initiatives that strengthen regional resilience, generate shared prosperity and contribute to a stable, inclusive and sustainable Indo-Pacific.

1 Introduction

Prabir De, Pankaj Vashisht and Sayantan Ghosal

The contemporary world is increasingly characterised by geopolitical upheaval, economic slowdowns, and overlapping conflicts. Debates on development and economic policymaking increasingly centre on supply chain disruptions, economic resilience, and diversification. These concerns have emerged at a critical juncture, as the global economy continues to recover from the adverse effects of the COVID-19 pandemic.

The 54th Annual Meetings of the International Monetary and Financial Committee (IMFC), held on 12-18 October 2026, underscored the significant threats to global economic stability posed by trade disruptions, geopolitical conflicts, rising debt burdens, and constraints on energy availability.[1] The Committee noted that persistent global uncertainty is likely to raise the prices of essential commodities, disproportionately affecting vulnerable populations. While advances in artificial intelligence (AI) have the potential to enhance productivity and stimulate investment, they may also create new economic vulnerabilities. Emphasising credible fiscal policies and independent central banks, the Committee highlighted the need for stronger international cooperation on trade, investment, supply chains, health, and nutrition. Multilateral cooperation has therefore assumed renewed importance. In this context, Southeast Asian economies exhibit a relatively higher degree of economic integration within Asia than those in South Asia and Central and West Asia. Such integration serves as an important buffer against external shocks arising from geopolitical and geoeconomic uncertainty (ADB, 2026).

Against this backdrop, India is well positioned to build on its strong development trajectory and deepen cooperation with the Association of Southeast Asian Nations (ASEAN). India's External Affairs Minister (EAM), Dr. S. Jaishankar, highlighted the importance of this partnership during his visit to Manila in July 2026.[2] He emphasised the significance of ASEAN-India cooperation in addressing evolving global challenges and the importance of the ASEAN-India Year of Maritime Cooperation. Enhanced cooperation, he observed, is essential to de-risking and diversifying economic partnerships while harnessing opportunities in connectivity, mobility, talent development, digital technologies and AI, trade and investment, technology, and sustainability. During their bilateral meeting, the EAM and the Secretary-General of ASEAN, Dr. Kao Kim Hourn, reaffirmed their commitment to strengthening the ASEAN-India Comprehensive Strategic Partnership (CSP) (ASEAN, 2026).

The significance of ASEAN-India cooperation was reiterated at the 14th East Asia Summit Economic Ministers' Meeting and the 23rd ASEAN-India Economic Ministers' Consultation, held in September

2026. Discussions focused on the ongoing review of the ASEAN-India Trade in Goods Agreement (AITIGA), particularly on addressing existing trade asymmetries and strengthening economic ties amid an evolving global economic landscape (Ministry of Commerce and Industry, 2026a). These developments provide grounds for optimism that ASEAN and India will expand cooperation in areas of mutual interest and advance a forward-looking partnership capable of navigating systemic global challenges.

1.1. Emergence of ASEAN-India Relations

Relations between India and ASEAN are deeply rooted in shared history, culture, and centuries-old people-to-people ties. Strengthening engagement with ASEAN has been a principal pillar of India's Act East Policy, launched in 2014. ASEAN-India relations encompass three broad dimensions: politico-security cooperation, economic collaboration, and socio-cultural engagement. Both partners interact regularly through multiple institutional mechanisms, including the annual ASEAN-India Summit at the level of Heads of State and Government (AIC-RIS, 2020). ASEAN currently accounts for approximately 11 per cent of India's global trade, with bilateral trade reaching around US$ 128 billion in 2025-26, reflecting the growing depth of their economic partnership (Ministry of Commerce and Industry, 2026b).

Building a strong partnership with ASEAN has been a key component of India's foreign policy since the early 1990s. The relationship gained momentum with the launch of the Look East Policy (LEP) in 1992, the same year that India became a Sectoral Dialogue Partner of ASEAN. India was subsequently elevated to Full Dialogue Partner status in 1996 and Summit-Level Partnership in 2002 (AIC-RIS, 2015). The relationship became a Strategic Partnership in 2012. A further milestone came in 2022, the 30th anniversary of ASEAN-India relations, when it was upgraded to a Comprehensive Strategic Partnership (CSP) (Ministry of External Affairs, 2025; De, 2025).

The evolving partnership is also reflected in the convergence between ASEAN's and India's visions for the Indo-Pacific, embodied in the ASEAN Outlook on the Indo-Pacific (AOIP) and India's Indo-Pacific Oceans Initiative (IPOI), both launched in 2019 (AIC-RIS, 2020; AIC-RIS, 2026a). Emphasising ASEAN centrality, both frameworks highlight maritime cooperation, connectivity, economic integration, and the achievement of the United Nations Sustainable Development Goals (SDGs). These shared priorities create opportunities for enhanced cooperation in both the Western Pacific and the Indian Ocean region (Chauhan et al., 2020). The Indo-Pacific framework also offers India opportunities to deepen security engagement with ASEAN and other regional partners (De, 2020).[3]

Several institutional mechanisms facilitate ASEAN-India cooperation, including the ASEAN-India Cooperation Fund (AIF), the ASEAN-India Green Fund (AIGF), the ASEAN-India Science and Technology Development Fund (AISTDF), and the ASEAN-India Fund for Digital Future (AIFDF). Activities supported by these mechanisms are guided by successive Plans of Action (POAs), jointly formulated by ASEAN and India for five-year periods (Ministry of External Affairs, 2025).

The first Plan of Action (2004–2010) was adopted at the Third ASEAN-India Summit in 2004, alongside the signing of the ASEAN-India Partnership for Peace, Progress and Shared Prosperity. It established a roadmap for long-term engagement, with successive POAs serving as the principal framework for implementing ASEAN-India cooperation (AIC-RIS, 2015).

More recently, the ASEAN-India Plan of Action for 2026-2030 was adopted at the 58th ASEAN Foreign Ministers' Meeting (AMM-58), held in Kuala Lumpur, Malaysia, in 2025. Building on earlier POAs, it seeks to expand cooperation across a wider range of sectors while addressing emerging shared challenges. Its overarching objective is to build on the achievements

of the POA 2021–2025, contribute to the realisation of ASEAN 2045: Our Shared Future, and further strengthen the ASEAN-India CSP.

With 2026 designated as the "ASEAN-India Year of Maritime Cooperation", the ASEAN-India POA (2026-2030) places particular emphasis on maritime collaboration. It also identifies artificial intelligence, the blue economy, public health, connectivity, science, technology and innovation (STI), climate change, finance, energy, digital transformation, trade, and investment as priority areas for strategic cooperation (ASEAN, 2025). Aligning cooperation initiatives with broader regional strategies, including SAGAR, MAHASAGAR, and Indo-Pacific frameworks, has also been recommended to ensure coherence and long-term sustainability (AIC-RIS, 2026). ASEAN and India can jointly develop green shipping corridors and invest in sustainable maritime infrastructure, including low-carbon fuels, to promote environmentally sustainable port operations (AIC-RIS, 2026b).

1.2. ASEAN-India Development and Cooperation Report (AIDCR) 2026

The areas of cooperation identified in the ASEAN-India POA (2026–2030) closely align with the research priorities of the ASEAN-India Centre (AIC) at RIS. Inaugurated in 2013 following the ASEAN-India Commemorative Summit in 2012, the Centre was established to foster closer cooperation and strengthen the strategic partnership through knowledge exchange and shared learning. Its work focuses on economic integration and regional economic cooperation. Through policy research and analysis in priority areas such as energy, connectivity, trade, and investment, the Centre enriches the knowledge base on ASEAN and India.

The ASEAN-India Development Cooperation Report (AIDCR) is a flagship publication of the AIC at RIS. It aims to shape ideas, share knowledge and perspectives, and trace progress in the ASEAN-India partnership across priority sectors. AIDCR 2026 examines policy imperatives for realizing "Viksit Bharat 2047" and "ASEAN 2045: Our Shared Future". ASEAN-India connectivity matters not merely for increasing exchanges, but also for reshaping economic geography by linking South Asia and Southeast Asia into an integrated Indo-Pacific growth corridor.

The AIDCR 2026 is divided into four parts: (i) Strategic Priorities and ASEAN-India CSP; (ii) Dynamics of Economic Relations; (iii) Harnessing Blue Economy and Deepening Connectivity; and (iv) Digital Economy, Sustainable Development and Regional Resilience. A total of 18 chapters address the theme "Navigating Global Uncertainties and Strengthening Partnership", offering a comprehensive perspective on the transformative changes in ASEAN-India relations.

The chapters in this volume draw on diverse perspectives and methodological approaches to explore regional economic integration, infrastructure development, digital governance, maritime cooperation, energy transition, climate resilience, and emerging technologies. By situating contemporary developments within their broader historical, institutional, and strategic contexts, the report seeks to deepen understanding of the opportunities and challenges associated with ASEAN-India cooperation.

Chapter 2, entitled "Security Framework: Convergences, Divergences, and a Practical Architecture for Cooperation", authored by Sinderpal Singh and S.S. Parmar, examines maritime security perspectives in ASEAN and India. It assesses the prospects for a joint maritime security framework by identifying its principal tenets and areas of convergence and divergence. The authors emphasize the need for India to expand engagement with ASEAN at both the institutional level and bilaterally with individual member states. They recommend short-, medium-, and long-term measures to address gaps in institutional mechanisms and interoperability, thereby supporting a robust ASEAN-India maritime security framework.

Chapter 3, entitled "Global Uncertainties and ASEAN-India Comprehensive Strategic Partnership: An Indian Perspective", authored by Sanjay Pulipaka and Sayantan Ghosal, examines progress in the ASEAN-India partnership amid evolving global challenges. It explores key dimensions of the CSP, focusing on traditional and non-traditional security cooperation. The authors recommend swiftly concluding the review of AITIGA, arguing that a strong economic partnership is integral to the CSP. They also contend that global turmoil presents an opportunity for ASEAN and India to work together to address contemporary crises.

Chapter 4, entitled "Reimagining ASEAN-India Comprehensive Strategic Partnership amidst Global Uncertainties: An ASEAN Perspective", authored by Vo Xuan Vinh, assesses the ASEAN-India CSP in the face of contemporary global challenges. It identifies areas of convergence between ASEAN centrality and India's Act East Policy and Indo-Pacific Oceans Initiative. The chapter highlights the CSP's role in advancing strategic interests, strengthening regional resilience, and promoting a rules-based and inclusive Indo-Pacific order. It recommends comprehensive maritime governance, stronger economic resilience and supply chain security, connectivity as strategic infrastructure, digital transformation, a faster green transition, and deeper human security and societal connectivity.

Chapter 5, entitled "Dynamics of India's Development Cooperation Partnership with ASEAN", authored by Sushil Kumar and Riddhi Lakhiani, analyses India's development cooperation with ASEAN since the adoption of the Act East Policy. It evaluates the potential of the ASEAN-India POA (2026–2030) to deepen this cooperation and examines development assistance to ASEAN from Development Assistance Committee (DAC) member countries, alongside India's assistance under the Global Development Compact Framework. The authors recommend expanding capacity building, establishing an ASEAN-India Development Cooperation Platform, strengthening triangular cooperation, and leveraging the Global South Centre of Excellence (DAKSHIN) for knowledge exchange.

Chapter 6, entitled "India-ASEAN Trade under AITIGA: Progress, Imbalances and Untapped Potential", authored by Prabir De, Pankaj Vashisht and Prateek Sharma, examines the evolution and changing composition of India-ASEAN merchandise trade under AITIGA, with particular attention to tariff-liberalization commitments. It identifies factors contributing to India's widening trade deficit and assesses untapped bilateral trade potential, particularly opportunities to expand Indian exports to ASEAN markets. It also examines the principal constraints on realizing this potential, including tariff barriers, non-tariff measures, and logistics costs.

Chapter 7, entitled "Deepening Value Chains: Strategies for FTAs and ASEAN–India GVC Integration in an Era of Overlapping Trade Architectures", authored by Rahul Sen and Sadhana Srivastava, analyses the development of ASEAN-India value chain networks since 2019. It examines India's participation in regional and global value chains and the integration of ASEAN-India networks amid overlapping trade architectures. To advance integration, the authors recommend an ambitious AITIGA 2.0 that addresses structural gaps, an Indian digital strategy aligned with ASEAN's Digital Economic Framework Agreement (DEFA), and stronger domestic reforms and policies to support integration with ASEAN supply chains.

Chapter 8, entitled "ASEAN–India Trade in Services: Sectoral Dynamics, Legal Framework, and the Way Forward", authored by Prabir De, Krishna Bhattacharya and Kritika Manoj, examines services trade between ASEAN and India and the ASEAN–India Trade in Services Agreement (AITISA). It documents growth in services trade while identifying persistent barriers. The authors recommend a comprehensive review of AITISA to make it more ambitious and commercially meaningful, with greater scope for healthcare, education, financial services, digital services, and tourism to foster economic integration.

Chapter 9, entitled "Cooperation in Regulations, Standards and Accreditation in ASEAN-India Trade in Goods", authored by Anil Jauhri and Om Stutee, examines the growing importance of non-tariff barriers in ASEAN-India economic relations. It explores the governance of standards and regulatory systems, whose significance has increased with expanding trade. The authors call for both partners to harmonize their regulatory and standards systems through modular arrangements, including inspection reliance, digital certification exchange, trusted conformity assessment pathways, competent-authority dialogue, and scoped recognition mechanisms.

Chapter 10, entitled "Reinforcing ASEAN-India Production and Services Networks", authored by Wannaphong Durongkaveroj, examines the potential of ASEAN-India production networks and compares India's participation in global value chains (GVCs) with that of ASEAN. Noting India's comparatively low participation, the chapter recommends systemic measures to reduce service link costs, promote an open trade and investment regime, and develop human capital to deepen integration into global production networks.

Chapter 11, entitled "Harnessing the Blue Economy Potential in ASEAN", authored by Arisman and Adilah Citra Anindya, presents the blue economy as more than a driver of economic growth: it is a comprehensive development model integrating ecological sustainability and social inclusion. The chapter examines sectoral progress in ASEAN, structural characteristics, and governance and sustainability challenges. It recommends technological innovation, a more inclusive ecosystem, improved governance and policy mechanisms, and sustainable financing to strengthen ASEAN's blue economy.

Chapter 12, entitled "Blue Economy Prospects in India: Strengthening ASEAN-India Partnerships", authored by Pankhuri Gaur, examines the importance of India's blue economy for economic and environmental policymaking. It explores fisheries, maritime activities, energy, and tourism, and emphasizes the need for a blue economy accounting framework. Given India's historical maritime, cultural, and trade ties with ASEAN, the chapter identifies considerable potential for regional cooperation. It recommends closer collaboration in maritime renewable energy, sustainable fisheries and aquaculture, port connectivity, and maritime tourism.

Chapter 13, entitled "India-ASEAN Connectivity: Achievements and Way Forward", authored by Prabir De, Adrija Ganguly and Vanshika Goyal, examines physical and digital connectivity between ASEAN and India and the challenges facing the region. It presents connectivity as a central pillar of the ASEAN-India CSP, extending beyond roads and ports to digital networks, energy systems, logistics chains, aviation corridors, and regulatory frameworks that facilitate trade and investment. Its strategic significance has grown as India and ASEAN seek resilient supply chains, diversified economic partnerships, and greater strategic autonomy amid intensifying geopolitical competition.

Chapter 14, entitled "India-ASEAN Maritime Engagement: From Cooperation to Collaboration", authored by Sujeet Samaddar and Vanshika Goyal, argues that maritime engagement has expanded beyond shipping and transport to encompass trade, investment, the blue economy, safety and security, sustainable development, and resilient supply chains. It examines shared interests and synergies that can deepen this collaboration and support future prosperity. The authors recommend automated reporting systems, maritime policy coordination mechanisms, and measures to address grey-zone and hybrid threats, among other initiatives.

Chapter 15, entitled "From Maritime Connectivity to Maritime Corridor Performance: Connectivity Competence in ASEAN–India Cooperation", authored by Ruth Banomyong, examines the shift from connectivity as a concept to the performance of maritime corridors in supporting ASEAN-India cooperation. It argues that improved corridor performance must be accompanied by stronger

capabilities. The chapter proposes an ASEAN–India Maritime Corridor Initiative focused on performance rather than infrastructure alone. Recommended measures include a maritime connectivity monitoring system, a performance dashboard, interoperable port and logistics systems, and cooperation on maritime security and resilience.

Chapter 16, entitled "Digital and AI-led Transformation in India and ASEAN: Policy Frameworks, Governance Strategies and Sectoral Impacts", authored by Sineenat Sermcheep, Amit Kumar, Sneha Sinha and Alaknanda Mishra, examines digital transformation and advances in AI across ASEAN and India. It analyses policy frameworks guiding digital public infrastructure in education, health, agriculture, banking, and start-up ecosystems. Comparing progress across ASEAN and India, the chapter identifies opportunities for digital cooperation and emphasizes the need to combine technological innovation with trust, inclusion, and regulatory cooperation. It argues that replicating digital models is insufficient without interoperable and inclusive solutions.

Chapter 17, entitled "Digital Nomadism: Catalyst for India-Southeast Asia's Cooperation and Connectivity", authored by Joefe B. Santarita, explores how remote working communities can strengthen cultural and economic ties between India and ASEAN. It examines "brain circulation", including the transfer of micro-investments and information between the two regions. The chapter recommends initiatives such as a unified nomad pass and the portability of social benefits. It also calls on local governments and institutions to adopt innovative and adaptive approaches to support digital nomads and harness their economic potential.

Chapter 18, entitled "ASEAN and India: Strengthening Partnerships for Sustainable Development and Cooperation", authored by Sabyasachi Saha and Tushti Tanwar, examines the priority that ASEAN and India assign to the United Nations Sustainable Development Goals (UN SDGs). It highlights their resilience in the face of recent crises and the range of sustainability practices they have adopted. The chapter argues that deeper collaboration is essential for resilience and sustainable development. It recommends standardized monitoring and accounting mechanisms for the ASEAN-India Cooperation Fund (AIF), the ASEAN-India Green Fund (AIGF), and the ASEAN-India Fund for Digital Future (AIFDF), as well as extending targeted, capacity-oriented cooperation to Cambodia, Lao PDR, Myanmar, and Vietnam.

Chapter 19, entitled "Environment, Climate Change and Energy Transition: Building a New ASEAN–India Partnership for Sustainable Development and Regional Resilience", authored by Anbumozhi Venkatachalam, examines the role of ASEAN-India cooperation in environmental governance, climate risk mitigation, and progress towards net-zero pathways. It argues for institutionalized regional governance to support environmentally sustainable, inclusive, and resilient growth. The chapter recommends a comprehensive Green Partnership Framework to advance the green transition.

1.3. Way Forward and Conclusion

The AIDCR 2026 identifies scalable programmes and opportunities to strengthen ASEAN-India cooperation. It examines shared challenges in the priority sectors identified in the POA 2026–2030. Covering areas such as finance, trade, the Blue Economy, technology, and sustainable development, the Report maps pathways towards a meaningful partnership and a prosperous shared future.

This forward-looking agenda also draws on the cultural and people-to-people ties that underpin the ASEAN-India CSP. Gurudev Rabindranath Tagore's account of Southeast Asia offers a fitting reminder of this shared heritage. In his 1927 travelogue "Java-Jatrir Patra" (Letters from a Traveler to Java), written during his historic tour of the region nearly a century ago, he expressed his deep appreciation of its culture, particularly its expressive performing arts. Southeast Asian countries have been commemorating the centenary of Gurudev Rabindranath Tagore's historic visit. In this spirit, the promise of the ASEAN-India partnership lies in building on this heritage through

cooperation that places people, shared prosperity, and a sustainable future at its heart.

As ASEAN-India relations approach their 35th anniversary, the way forward is to translate the ambitions of the Comprehensive Strategic Partnership into practical, inclusive, and sustained cooperation. This requires joint ownership of shared priorities, stronger institutional coordination, and agile implementation of the ASEAN-India POA (2026–2030), alongside deeper engagement across governments, businesses, research institutions, and communities. By advancing economic integration, maritime and digital connectivity, and sustainable development, ASEAN and India can strengthen regional resilience while keeping people at the centre of the partnership. The third edition of the *ASEAN-India Development and Cooperation Report (AIDCR)* contributes to this endeavour by identifying opportunities and policy pathways for collective action. Ultimately, the partnership's promise will be realised through a shared commitment to turning these priorities into tangible outcomes for regional peace, prosperity, and a sustainable future

Endnotes

1 Refer, https://www.imf.org/en/meetings/2026/annual/statements-and-documents

2 Refer, EAM's speech delivered at the ASEAN-India Foreign Ministers' Meeting, held at Manila on 22 July 2026, available at https://www.mea.gov.in/Speeches-Statements?dtl/41496

3 Several proposals were identified to take forward the Indo-Pacific agenda by participating countries. Refer, for example, https://www.ris.org.in/sites/default/files/Publication/outcome-document-aligning-the-ipoi-and-the-aoip.pdf

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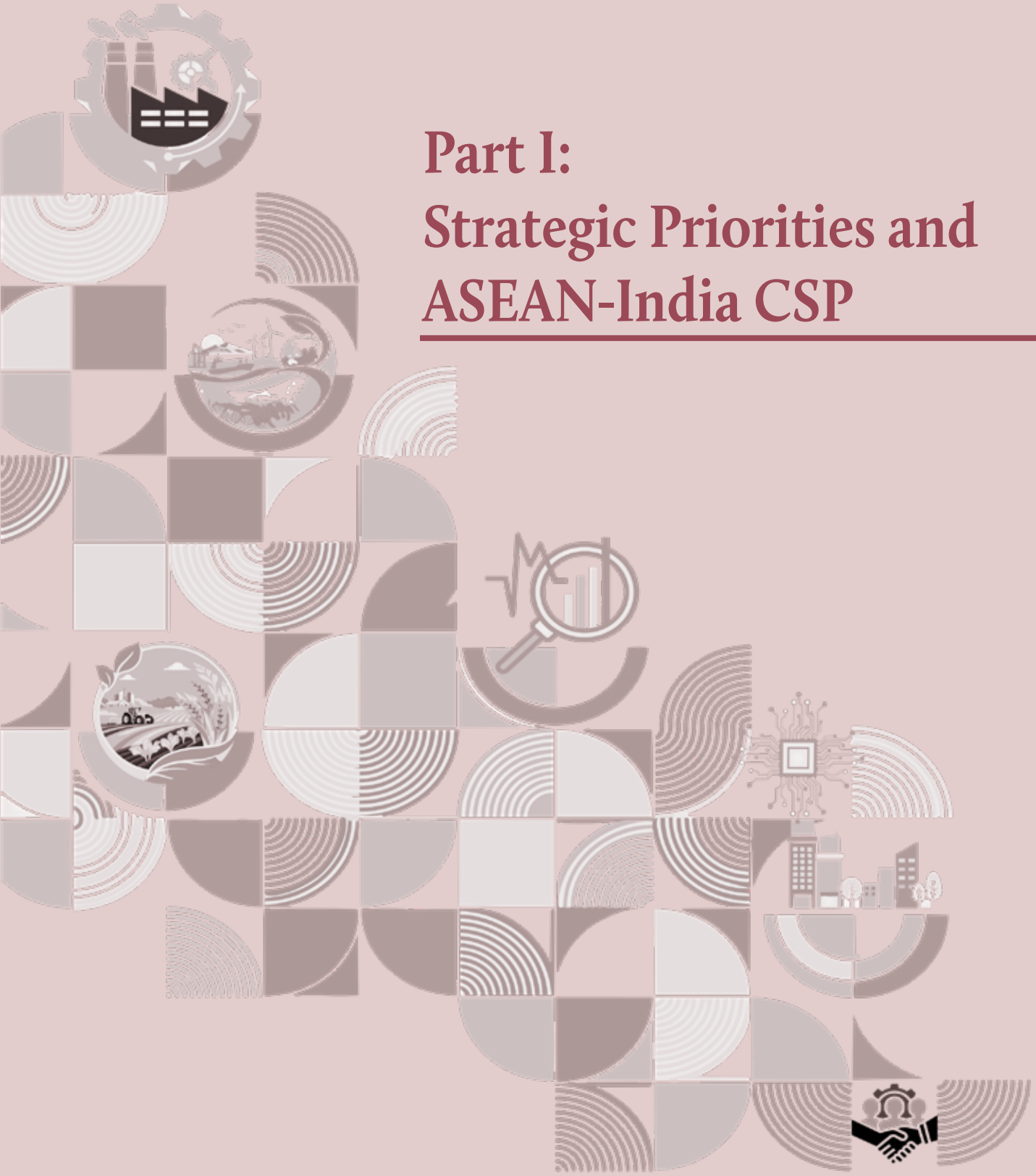
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Part I:
Strategic Priorities and ASEAN-India CSP



2 Exploring an India-ASEAN Maritime Security Framework: Convergences, Divergences, and a Practical Architecture for Cooperation

Sarabjeet S Parmar and Sinderpal Singh

2.1. Introduction

The Indo-Pacific has become the principal theatre of twenty-first century geopolitics with the maritime domain as the epicentre. For India, the waters stretching from the Arabian Sea and the Bay of Bengal through the Straits of Malacca, Sunda and Lombok into the South China Sea (SCS) are not peripheral but central to its strategic geography, trade and energy security. For the eleven members of the Association of Southeast Asian Nations (ASEAN), the SCS, the Straits of Malacca and Singapore, and the approaches to the Pacific constitute the very core of their geopolitical relations and economic lifelines. These two regions are bound by geography, history and an expanding web of economic interdependence, yet their maritime security outlooks have evolved along somewhat different trajectories. India's maritime security outlook was shaped by its continental and now continental-maritime identity, and its rivalry with China on the land border and now the Indian Ocean. ASEAN's maritime security outlook was shaped mainly by the SCS dispute and the structural reality of having to manage, rather than balance, China as a resident growing power.

This chapter examines how India and ASEAN, both individually and collectively, conceptualise maritime security. It identifies the central elements that could anchor a maritime security framework between them by mapping the convergences and divergences, and proposes a practical, two-track architecture that blends India's bilateral relationships with individual ASEAN nations and institutionalised India-ASEAN engagement. The chapter also identifies gaps in the present arrangements and suggests short-, medium-, and long- term avenues towards a more cogent India-ASEAN maritime security framework.

2.2. Conceptualising Maritime Security through the Lens of India and ASEAN

India's articulation of maritime security has moved from an Indian Ocean-centric naval doctrine to an expansive maritime, rules-based approach captured in the Security and Growth for All in the Region (SAGAR) vision announced in 2015 and the 2025 evolution to the vision of MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions).[1] These visions fold together traditional concerns- deterrence and conflict- with non-traditional ones such as anti-piracy, Humanitarian Assistance and Disaster Relief (HADR), Blue Economy development, conservation of marine resources and

ecology, and capacity cum capability building for smaller littoral states. Following the SAGAR vision, the 2015 Ensuring Secure Seas: Indian Maritime Security Strategy (IMSS, 2015) widened the aperture to the Indo-Pacific as a strategic space, explicitly linking the security of the Indian Ocean with the approaches to the SCS and the Western Pacific. This has been reiterated by the 2026 Ensuring Secure Seas: Indian Maritime Security Strategy (INMSS, 2026).[2]

ASEAN's conceptualisation of maritime security is constrained by the bloc's consensus-based decision-making and the divergent threat perceptions of its eleven members. The 2019 ASEAN Outlook on the Indo-Pacific (AOIP) frames maritime cooperation as one of the four priority areas, emphasising connectivity, the Sustainable Development Goals (SDGs), economic cooperation and "other areas of cooperation," while studiously avoiding any explicit balancing language vis-à-vis China.[3] For continental Southeast Asian nations such as Laos and Cambodia, maritime security is a marginal concern and is centred around the right of access to and from the seas by landlocked nations as provided for by Article 125 of the 1982 UN Convention on the Law of the Sea (UNCLOS).[4] For archipelagic and littoral states such as Indonesia, the Philippines, Vietnam and Malaysia, maritime security is an existential aspect, touching on sovereignty, fisheries, energy resources and, increasingly, undersea infrastructure. Therefore, it can be argued that ASEAN centrality functions less as a unifying maritime flag and more as a diplomatic shield that allows individual members to pursue divergent bilateral hedging strategies while preserving the appearance of collective neutrality. However, at the broader ASEAN level, UNCLOS can be considered a unifying factor based on the shared commitment to freedom of navigation and overflight, unimpeded lawful commerce, and peaceful resolution of disputes. This shared legal vocabulary, even where its application diverges sharply, as over the SCS, provides the normative scaffolding on which a maritime security framework can be built.

This strategic and operational convergence found institutional expression in the Indo-Pacific Oceans Initiative (IPOI) announced by Prime Minister Narendra Modi at the 14th East Asia Summit in Bangkok on 4 November 2019.[5] As a non-treaty-based, voluntary arrangement, the IPOI is deliberately designed to avoid creating new institutional machinery, as it leans on the existing East Asia Summit (EAS) framework of ASEAN and the eight dialogue partners. The seven pillars of the IPOI seek volunteers from individual nations to lead one or more of the pillars that spans across: Maritime Security, Maritime Ecology, Maritime Resources, Capacity Building and Resource Sharing, Disaster Risk Reduction and Management, Science, Technology and Academic Cooperation, and Trade Connectivity and Maritime Transport.[6] This EAS anchoring situates the IPOI as a practical, implementation-oriented complement to the AOIP. ASEAN and India have acknowledged in a joint statement that the two frameworks share common underlying principles in promoting peace, stability, and prosperity through the maritime domain.[7] The convergence continues to be reinforced at the institutional level, including through the AOIP Seminar Series on Maritime Cooperation, co-hosted by Singapore, Australia, India, and Japan for EAS participating nations, the ASEAN Maritime Outlook (AMO), and ASEAN's own sectoral stock-take of the region's maritime challenges and priorities.[8] Collectively, SAGAR/MAHASAGAR, IPOI, AOIP, and the AMO form a layered architecture in which India's bilateral vision, ASEAN's normative outlook, and the EAS's convening capacity can reinforce each other in pursuit of a free and open Indo-Pacific maritime order.

2.3. Core Elements of an India-ASEAN Maritime Security Framework

An analysis of the official statements and joint statements emanating from the ASEAN-India Summit process, including the 2018 Delhi Declaration following the ASEAN-India Commemorative

Summit, highlights several elements that can form the building blocks of a putative framework. These encompass the areas of Maritime Domain Awareness (MDA) and information-sharing, freedom of navigation and overflight, the security of Sea Lines of Communication (SLOCs), capacity-building, training, hydrography, HADR, Blue Economy, fisheries, marine biotechnology, port connectivity, counter-piracy and counterterrorism, and adherence to international law, particularly UNCLOS, as the basis for resolving disputes. These aspects were also reflected in the 2021-2025 India-ASEAN Plan of Action.[9] However, these elements remain largely aspirational at the ASEAN-India multilateral level, where institutional mechanisms are thin. The ASEAN-India Foreign Ministers' Meeting, the East Asia Summit, the ASEAN Defence Ministers' Meeting-Plus (ADMM-Plus) and the ASEAN Regional Forum (ARF) provide venues for dialogue but rarely produce binding commitments. By contrast, bilateral engagement, particularly with Vietnam, Singapore, Indonesia and the Philippines, has produced substantive outcomes, from logistics agreements to coastal surveillance radar projects to defence platform transfers. A coherent framework must, therefore, explicitly recognise and integrate these two tracks rather than treating ASEAN-level diplomacy as a substitute for bilateral substance.

2.3.1. The Indian Perspective

India's approach to an India-ASEAN maritime security framework rests on three specific pillars that merit separate examination.

2.3.1.1. Convergence with ASEAN Nations Who are also IORA Members

A structurally important but underexploited convergence lies in the overlapping membership of ASEAN nations with the Indian Ocean Rim Association (IORA). Among ASEAN's eleven members, Indonesia, Malaysia, Singapore and Thailand sit within the Indian Ocean region, and, hence, IORA's institutional remit.[10] India, as a founding IORA member and an early proponent of its revival after 2011, has used IORA to advance Blue Economy cooperation, maritime safety and security working groups, and disaster risk management. The convergence with Indonesia is particularly significant. Jakarta's Global Maritime Fulcrum doctrine and its IORA chairmanship in 2015 dovetailed closely with India's SAGAR vision, producing a 2018 India-Indonesia Joint Statement that articulated a "Shared Vision of India-Indonesia Maritime Cooperation in the Indo-Pacific". This explicitly links bilateral cooperation to both IORA and ASEAN-led mechanisms.[11] Singapore's engagement is concretely evidenced by the IORA-Singapore customised programme on Maritime Safety and Port Management.[12]

There is a high degree of convergence between the ASEAN Outlook on the Indo-Pacific (AOIP) and the IORA Outlook on the Indo-Pacific (IOIP), as expected, as both were shaped significantly by India and Indonesia. The convergence is strongest in UNCLOS, freedom of navigation, non-coercion, inclusivity, rules-based order, and Sustainable Development Goals (SDGs). This reflects a shared strategic interest in resisting prescriptive, great-power-imposed frameworks without naming any power. The difference lies in the institutional instruments. While the AOIP is anchored in ASEAN centrality and ASEAN-led mechanisms, the IOIP has no equivalent institutional anchors. The IORA's mechanisms are far thinner, and the stress is on consensus and non-intrusiveness. The AOIP is also more explicit on dispute resolution, while the IOIP places greater operational weight on maritime safety mechanisms. To strengthen the bridge, IORA and ASEAN signed a formal MoU on 23 September 2023 to synergise their respective outlooks. Table 2.1 depicts the major convergences between IPOI and AOIP.

This dual-membership convergence allows India to use IORA as a complementary, less China-sensitive forum through which to advance maritime governance norms that can subsequently be mainstreamed into ASEAN-India dialogues, effectively creating a secondary track insulated from the political sensitivities of the SCS.

Table 2.1: Convergence between the AOIP and the IOIP

Theme	AOIP	IOIP
Framing of the Indo-Pacific	The Indo-Pacific is one integrated and interconnected region. Not contiguous but seamlessly linked.	Indo-Pacific is an inclusive, rules-based space of shared prosperity. It avoids zero-sum security framing.
Core principles	Openness, transparency, inclusivity, rules-based framework, good governance, sovereignty, non-intervention, equality, mutual respect, international law (UN Charter, UNCLOS).	Sovereign equality, territorial integrity, inclusivity, non-interference, peaceful co-existence, mutual benefit, respect for international law (UN Charter, UNCLOS).
Role of international law / UNCLOS	Explicitly cites the 1982 UNCLOS as a foundational legal instrument alongside the UN Charter. Supports freedom of navigation and overflight.	Explicitly cites the 1982 UNCLOS. The objective is to enhance freedom of navigation and overflight in accordance with UNCLOS and the UN Charter.
Maritime cooperation	Priority areas: maritime dispute resolution, maritime safety, freedom of navigation/ overflight, non-traditional threats, marine resource management, blue economy, pollution, capacity-building.	Primary objectives: enhance maritime safety and security, promote conservation and sustainable use of marine resources, strengthen WGMSS and SAR mechanisms.
Connectivity	Complements MPAC 2025; physical, institutional and people-to-people linkages; PPP mobilisation, environmental sustainability of projects.	Objectives: enhanced connectivity to promote inclusive growth, unimpeded flow of commerce, resilience to future crises and disruptions.
SDGs	Priority area: UN SDG 2030. Poverty eradication, food security, energy, health, finance, technology. Recognises development as central to the Indo-Pacific vision.	Objectives: conservation, SDG-14 (Life Below Water), climate change, biodiversity, marine pollution, sustainable trade and investment.
Inclusive, non-coercive approach	Inclusivity explicitly defined as holding no prejudice against any country. An all-encompassing outlook resisting exclusionary configurations.	Objectives: fair, non-discriminatory, non-coercive, inclusive, equitable, transparent, stable, predictable trade and economic environment.
Complementarity with existing frameworks	Explicitly complementary. Recognises potential cooperation with other Indo-Pacific and Indian Ocean mechanisms, including IORA.	Explicitly notes AOIP as a 'similar document'.
Institutional anchoring	ASEAN-led mechanisms (EAS, ARF, ADMM-Plus, EAMF) as primary platforms. Preserves their formats and existing cooperation arrangements.	Strengthen existing mechanisms with a consensus-based, evolutionary, non-intrusive institutional approach.
Strategic trust-building	Generates momentum for strategic trust through win-win cooperation. Reaffirms TAC principles: peaceful settlement of disputes, non-use of force.	Builds strategic trust through dialogue, transparency, and engagement. Peaceful settlement of disputes is a core principle.
Economic cooperation	Priority areas: trade, investment, economic and financial integration. Includes reducing barriers and strengthening the economic community.	Promotes open, transparent, inclusive, rules-based and fair systems for balanced and sustainable development. Includes a non-coercive trade environment.

Source: Authors' own

2.3.1.2. Working with ASEAN Nations in the Bay of Bengal

The Bay of Bengal is the maritime space that overlaps India's eastern and ASEAN's westernmost strategic space, as it is bordered directly by Myanmar and Thailand and accessible to Indonesia through the Andaman Sea and the Strait of Malacca. Historically, the Bay has suffered from weaker regional institutionalisation as compared to the SCS or the Western Indian Ocean. However, the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), which includes Myanmar and Thailand alongside India, Sri Lanka, Bangladesh, Nepal and Bhutan, has changed the equation through the pursuit of the objectives stated in Article 1 of the Charter.[13] This sub-regional architecture is uniquely positioned to serve as a connective tissue between India's maritime strategy and ASEAN's Indo-Pacific outlook and as it straddles the geographic and institutional seam separating South Asia from Southeast Asia. Myanmar and Thailand can function as the organisation's dual-hatted members, sitting simultaneously within BIMSTEC and ASEAN, and this overlapping membership creates a natural conduit for policy coordination that neither IORA nor bilateral arrangements can replicate.

BIMSTEC's Security pillar, led by India and encompassing counterterrorism and transnational crime, disaster management, and energy security[14], has deepened since the 2016 Goa Retreat, with four rounds of BIMSTEC National Security Chiefs' meetings and dedicated expert groups on maritime cooperation and cyber security.[15] has increasingly been identified as the operational core of this pillar[16], offering a basis for anti-piracy patrolling and coordinated HADR response that could complement ASEAN-led mechanisms such as the ADMM-Plus, and which aligns with India's SAGAR and MAHASAGAR visions. On connectivity, projects such as the Kaladan Multi-Modal Transit Transport Project and the India-Myanmar-Thailand Trilateral Highway extend India's Act East Policy into ASEAN's continental and maritime domains simultaneously. However, as both remain vulnerable to Myanmar's internal instability, there is a need to embed them within multilateral platforms such as BIMSTEC to reduce dependence on fragile bilateral arrangements. Further, BIMSTEC's blue economy agenda, covering fisheries management, sustainable coastal tourism, and marine resource governance, offers a functional template that could be harmonised with the AOIP's cooperative maritime provisions. This could narrow the institutional gap that has historically weakened Bay of Bengal governance relative to other Indo-Pacific sub-regions. BIMSTEC and ASEAN could consider signing an MoU like the April 2025 BIMSTEC-IORA MoU, and the three organisations could consider a trilateral arrangement that would further cement the convergences.

India's planned development of the Andaman and Nicobar Islands, specifically the Greater Nicobar project, could give substance to bilateral and trilateral cooperation.[17] Further, a functional Bay of Bengal sub-regional maritime security architecture, linking India's Eastern Naval and Andaman and Nicobar Command assets with the surveillance assets of Indonesia, Thailand and Myanmar, a step beyond the existing coordinated patrols, could address the existing geographic surveillance gap and possibly reduce reliance on the slow-moving ASEAN process to address the same. The recent agreement between India and Indonesia towards the integrated development of the Sabang Port[18] would add weight to this endeavour, apart from enhancing connectivity in the region.

2.3.1.3. Freedom of Navigation, SLOC Security, Choke Points and Information Sharing

India's position on Freedom of Navigation (FoN) upholds the principle as a matter of customary and conventional international law under UNCLOS. New Delhi does not conduct FoN operations (FONOPs) in the assertive, transit passage testing manner of the US. Nevertheless, India has consistently advocated for the security of SLOCs as a global public good. The bulk of India's maritime trade by value and the majority of its energy imports transit the Indian

Ocean, and its trade with ASEAN, Japan, the Republic of Korea, and the broader Pacific traverses the SCS through the Malacca Strait. As per a reply tabled in the Indian Parliament in April 2022, over 55 per cent of India's trade passes through the South China Sea and the Malacca Straits.[19] For ASEAN's maritime states, India's emphasis on SLOC security, expressed through anti-piracy patrols in the Gulf of Aden, periodic Indo-Pacific deployments of Indian naval ships, and coordination through the Information Fusion Centre-Indian Ocean Region (IFC-IOR) offers a less polarising point of cooperation than alignment with US FONOPS.

The Indo-Pacific chokepoints, the Straits of Malacca, Sunda, Lombok and Ombai-Wetar, together with the Bab-el-Mandeb and the Strait of Hormuz at the western end of India's Indo-Pacific maritime periphery, are the connective tissue between the Indian and Pacific Oceans. They are also the primary points of vulnerability for SLOC disruption, whether through piracy, terrorism, accidents, or deliberate interdiction. Hence, there is a requirement for increasing interoperability and more exchange of information. India's IFC-IOR has progressively increased the number of International Liaison Officers (ILOs) and partner agencies and currently has 17 ILOs and collaboration with 28 partner nations and 54 organisations.[20] Singapore, Indonesia, Thailand, Vietnam and the Philippines have positioned ILOs at the IFC-IOR, and the associated complementary architecture on the Southeast Asian side includes Singapore's Information Fusion Centre. The IFC-IOR is poised to graduate from a regional centre to a global centre, and hence an India-ASEAN maritime framework should aim at more information exchanges between these fusion centres and identified offices in ASEAN nations. A single merged architecture is not required, and standardised data formats, liaison exchanges, and joint MDA products that can be shared in near-real time would greatly aid and address vulnerabilities, including choke point vulnerabilities. This interaction could be based on the Maritime Security pillar of the Indo-Pacific Oceans Initiative (IPOI), which India leads.[21]

2.3.1.4. Protection of Critical Undersea Infrastructure

The protection of undersea cables and pipelines has moved from a technical challenge to a first-order security concern following the series of incidents in the Baltic Sea and recurring cable disruptions near Taiwan's Matsu Islands, several of which have been linked to vessels with opaque ownership or flagging.[22] India sits astride some of the world's busiest submarine cable corridors connecting Europe and West-South-Southeast-East Asia, with major cable landing stations in Mumbai, Chennai and the Andaman Islands. ASEAN states such as Singapore (a global cable hub), Indonesia, Vietnam and the Philippines are similarly cable dependent. Hence, India and ASEAN also have a stake in undersea cable security and, prospectively, in seabed-based critical infrastructure such as offshore wind transmission and carbon storage installations. A maritime security framework should, therefore, incorporate a dedicated undersea infrastructure protection track through shared incident reporting protocols, joint identification of vulnerable cable landing points, and, where feasible, coordinated maritime, specifically coast guard, presence near critical nodes. This is an area where India's survey vessels can offer practical assistance to ASEAN partners that currently lack mapping capabilities.

2.3.1.5. Addressing Great Power Competition

Neither India nor ASEAN seeks formal alignment in the ongoing US-China contestation, yet both face the practical consequences of the intensifying competition. India's approach, consistent with its policy of strategic autonomy and being part of the Quad's cooperative frameworks such as the 2022 Indo-Pacific Maritime Domain Awareness (IPMDA) initiative[23], the 2025 Quad Critical Minerals Initiative[24], and the 2026 Indo-Pacific Maritime Security Cooperation (IPMSC) Initiative[25] announced during the recent Foreign Ministers' meeting held in New Delhi, is to build 'latticed' plurilateral

arrangements. These are not 'formally' anti-China but raise the costs of unilateral coercion through transparency and presence. ASEAN's stated position over time, also reflected in the AOIP's deliberate avoidance of containment language, is to avoid being forced into 'choosing sides'.[26] However, the India-ASEAN convergence is practical, not symbolic, especially in areas like joint disaster-relief exercises, shared maritime awareness data, and capacity-building that make nations more resilient without forcing them to publicly take a side. India's own experience of balancing the relationship with Russia, a deepening partnership with the United States, and an adversarial but engaged relationship with China could give it some credibility with ASEAN nations seeking a similar middle path.

2.3.2. The ASEAN Perspective

From Southeast Asia's perspective, four issues dominate the maritime security conversation, each carrying distinct implications for how individual ASEAN members, and the grouping, might engage India.

2.3.2.1. The South China Sea and the Question of the Philippines as an Outlier

The SCS remains the central maritime security issue for ASEAN, encompassing competing sovereignty claims over the Spratly and Paracel Islands, arming of islands, China's expansive nine-dash line that was found to be without legal basis by the 2016 Permanent Court of Arbitration ruling[27], and recurrent confrontations around Scarborough Shoal, Second Thomas Shoal and the Vanguard Bank. However, within ASEAN there is a marked difference in how individual claimant states assertively pursue their positions. The Philippines has in recent years adopted a markedly more confrontational transparency initiative, publicising Chinese coast guard actions, deepening defence cooperation with the US to grant access to additional sites under the Enhanced Defence Cooperation Agreement. It is also pursuing capability acquisitions, including the BrahMos missile system, explicitly framed around South China Sea contingencies.[28] Following the Philippines, Vietnam and Indonesia have also evinced an interest in the BrahMos missile that will enhance their respective deterrent and combat value.[29] The Philippines' transparency initiative approach, while welcomed by some external partners, has generated a degree of unease among other ASEAN members, including Malaysia, Vietnam, Indonesia, and Cambodia and Laos. The view is that Manila's high-visibility confrontations could result in escalation that could draw the wider region into a crisis not of its choosing, and could complicate ASEAN's preferred posture of managed engagement with Beijing.[30] Vietnam, while arguably being a claimant with the most at stake after the Philippines, continues to favour quiet bilateral management alongside incremental capability build-up, illustrating that claimant solidarity within ASEAN is considerably weaker than is often assumed from outside the region.[31] For ASEAN, this divergence matters as the Philippines' approach risks being read by other ASEAN members as taking sides in an intramural ASEAN debate, whereas a posture centred on UNCLOS principles and capacity-building applicable to all claimants is more likely to be acceptable across the grouping.

2.3.2.2. Freedom of Navigation and Chokepoint Anxieties amid US-China Competition

For ASEAN maritime member states, FoN is less an abstract legal principle than a daily economic necessity. The Strait of Malacca connects the Indian Ocean to the SCS and alone carries 23.7 per cent of the global seaborne trade by volume, which, commodity-wise, accounts for 45 per cent crude oil, 42 per cent propane, 26 per cent cars, and 23 per cent dry bulk.[32] The intensification of US-China great power competition, manifested in expanded naval presence and operations, coast guard and maritime militia activity, and periodic commentary about chokepoint vulnerabilities duly supported by the ongoing Strait of Hormuz crises, has heightened anxieties across ASEAN as this core trade artery could become contested space in a broader US-

China confrontation. This makes chokepoint security, a distinct aspect vis-à-vis sovereignty disputes, one of the most promising areas for India-ASEAN convergence and cooperation. For India, keeping the Malacca, Sunda, and Lombok Straits open and stable is a shared interest. The number of bilateral maritime exercises with ASEAN member navies and the Biennial ASEAN India Maritime Exercise (AIME) could include Chokepoint and SLOC security in the schedule.

2.3.2.3. The Taiwan Contingency and the 'Sucked-in' Dilemma

A growing concern among the ASEAN strategic community, particularly in Singapore, Vietnam, Indonesia and the Philippines, is the prospect of being drawn into a Taiwan crisis through geography, alliance entanglement or simple economic disruption, despite having no formal stake in the cross-Strait dispute.[33] The US-Philippines Mutual Defence Treaty (MDT), the renewed military relations with the US, and its proximity to Taiwan via the Bashi Channel make it the ASEAN member most directly exposed to entanglement, a reality that compounds the unease described earlier regarding Manila's broader posture. Singapore and Vietnam, despite having no treaty obligations, would face immediate and severe disruption to shipping and supply chains given the volume of regional trade that transits the waters near Taiwan. ASEAN members broadly lack viable options in such a crisis. They can neither credibly deter a conflict between the two powers nor easily insulate themselves from its military, economic, and humanitarian fallout, and ASEAN's consensus-based mechanisms are widely seen as too slow and too divided to produce a coordinated response.[34] India's 'One China' policy, along with its unofficial ties with Taiwan, places the Taiwan Strait as a lower salience issue. However, the prospect of SLOC disruption emanating from a Taiwan crisis, which would impact shipping through the SCS and therefore, India's maritime trade that flows through the SCS, points to New Delhi's indirect, but real stake in contingency planning.

2.3.2.4. Critical Undersea Infrastructure: The Cable Concern

Mirroring the Indian concern, ASEAN members have become acutely sensitive to undersea cable security following a series of incidents involving cable damage near Taiwan's Matsu Islands and in the Baltic Sea. These incidents have been linked to vessels with opaque or third-country ownership, raising the prospect of similar grey-zone disruption in the SCS or the Malacca Strait.[35] Singapore, as a global cable hub hosting numerous landing stations plus Vietnam and the Philippines, whose cable systems traverse contested waters, are particularly exposed. ASEAN telecommunications and connectivity officials have begun discussing region-wide approaches to cable protection[36], but enforcement capacity and capability, particularly the ability to monitor and respond to suspicious vessel activity near cable routes, remain thin across most member nations. This is an area where India's expanding maritime domain awareness network, its Coast Guard's presence in the eastern Indian Ocean, and its own stake in cable security create a natural basis for technical cooperation, shared best practices on cable route mapping, incident response protocols, and potentially coordinated surveillance of high-risk segments.

2.3.3. Convergences and Divergences

Mapping the Indian and ASEAN perspectives reveals a pattern in which the strongest convergences lie in functional, non-sovereignty-related domains, while the sharpest divergences cluster around issues directly implicating territorial sovereignty and great power competition and alignment.

Areas of convergence include a shared commitment to UNCLOS as the basis for maritime order. Even where interpretation of certain articles differs, a shared interest in chokepoint security, particularly the straits extensively used by maritime trade, creates complementary rather than competing roles. There is growing convergence on undersea infrastructure protection, which is an issue with no pre-existing sovereignty baggage and is witnessing rising salience on both sides. Capacity and capability building, where

India's defence exports meet ASEAN requirements, particularly among states seeking to diversify their supplier base, is an upcoming area of convergence. The shared preference for non-aligned or multi-aligned approaches to great power competition will allow functional cooperation on MDA and HADR without requiring formal bloc alignment is another area.

Areas of divergence include the SCS itself, where India's interests and therefore, stance are largely derived from the notion of FoN and the general value of the 2016 arbitral ruling for international law. ASEAN's internal divisions, epitomised by the Philippines' approach, make it difficult for India to calibrate its posture without appearing to take sides in an intra-ASEAN debate. Another area is the Taiwan Strait, where India's stakes are indirect and its declaratory posture cautious, while for several ASEAN states the issue is an existential high-risk challenge. The Philippines, Vietnam and Indonesia are receptive to Indian defence equipment, reflecting one pace of military capacity building. Other ASEAN members, particularly those with closer ties to China and the US, or strong non-alignment traditions, remain more circumspect about visible defence cooperation that could be read as bloc-building. Bilateral relationships with India move considerably faster than the ASEAN-India multilateral process, revealing a distinct institutional pace. This creates a structural mismatch between the rhetoric of ASEAN centrality and the reality of where substantive cooperation occurs.

2.3.4. Towards a Cogent India-ASEAN Maritime Security Framework

A cogent framework can be summarised around four organising principles. First, sequencing by sensitivity. The framework should front-load cooperation in low-sensitivity domains, like undersea infrastructure protection, Blue Economy, HADR, and ocean governance advocacy, where ASEAN consensus is achievable. Reserve higher-sensitivity aspects, such as defence equipment and intelligence-sharing on the SCS, for the bilateral track with willing partners. Second, geographic anchoring. The Bay of Bengal should serve as the primary geographic anchor for the framework's most concrete deliverables. The advantage in this approach is the comparative absence of great power contestation there relative to the SCS, allowing the framework to demonstrate tangible results before extending into more contested waters. Third, normative leadership through ocean governance. India's and ASEAN's shared interests offer a venue for joint diplomatic leadership that requires no military commitment and reinforces the rules-based credentials of both sides. Fourth, capability diversification as the connective thread. By positioning Indian defence and Blue Economy capabilities as complementary, rather than alternative to those offered by other partners, India can be embedded within ASEAN members' broader diversification strategies without forcing binary choices. An example is the approach exemplified by the Philippines' BrahMos acquisition alongside its continuing alliance relationship with the US.

Such a framework would be cogent as it does not attempt to resolve the structural divergences on the SCS, on Taiwan, or on alignment vis-à-vis China, which are issues highly unlikely to be resolved in the foreseeable future. Instead, it channels cooperative energy into domains where India's and ASEAN capabilities and requirements, and the absence of zero-sum dynamics align. This could enable building the institutional plumbing of working groups, interoperable MDA, and financing mechanisms that would allow cooperation to expand into more sensitive domains as and when the political space permits.

2.3.5. A Practical Framework: Blending Bilateral and ASEAN-Wide Tracks

Given these convergences and divergences, a workable India-ASEAN maritime security framework should be conceived not as a single architecture but as a dual-track, mutually reinforcing system. However, there are a few gaps that need to be acknowledged and addressed first.

2.3.6. Gaps to be Addressed

Presently, there are several structural gaps that limit the effectiveness of India-ASEAN maritime cooperation. First is the institutional gap, which would be addressed by the institutionalisation of a dedicated ASEAN-India Maritime Security Working Group (AIMSWG) with its own budget and charter. Second, there is a capability-interoperability gap. India's naval and coast guard communication systems, though increasingly compatible with Quad partners, have not been systematically tested for interoperability with most ASEAN navies and coast guards beyond Singapore and, to a lesser extent, Vietnam. Third, there is an information-sharing gap. While the IFC-IOR has expanded its partner network, the granularity and timeliness of data shared with ASEAN partners lag behind that shared with Quad members. Further, there is no agreed-upon framework for a common operating picture spanning the common areas of maritime interest, i.e., the Bay of Bengal and the SCS. Fourth, there is a financing and procurement gap. India's defence export financing mechanisms remain less competitive in tenor and terms than those offered by some other suppliers. This has perhaps constrained the scalability of the BrahMos-type success beyond a handful of cases. Fifth, there is a normative-coordination gap on emerging ocean governance issues. India and ASEAN states have not developed a coordinated position on the various emerging facets of international maritime law despite substantially overlapping interests as developing littoral and archipelagic states. Sixth, and perhaps most importantly, there is a perception gap. ASEAN members frequently view India's Indo-Pacific engagement as secondary to its Quad commitments and its IOR preoccupations, while India sometimes treats ASEAN centrality as a process to be managed rather than a partnership to be substantively resourced.

2.3.6.1. Track One: The ASEAN-wide Track

This should be confined to functions where consensus is achievable. These include MDA and related information-sharing built on linkages between the IFC-IOR and Southeast Asian fusion centres under the IPOI Maritime Security pillar; HADR coordination and joint exercises open to all ASEAN members regardless of their South China Sea posture; Blue Economy cooperation under the ASEAN-India Plan of Action; and joint advocacy on global ocean governance issues where India and ASEAN interests substantially align. This track should deliberately avoid framing itself around any specific contingency, specifically Taiwan, and should present itself as a capacity-capability-resilience-building aspect. This framing could, most likely, retain the participation of ASEAN's more China-aligned members.

2.3.6.2. Track Two: The Bilateral Track

This track should be where substantive, capability-intensive cooperation occurs, calibrated to each partner's threat perception and political comfort level. With the Philippines, Vietnam and Indonesia, this would mean continued defence platform cooperation, building on the BrahMos precedent, intelligence-sharing on South China Sea developments, and maritime exercises that stop short of formal alliance signalling. With Indonesia, the emphasis should be on the IORA-linked Blue Economy and Bay of Bengal-Andaman Sea connectivity, leveraging the existing 2018 Shared Vision of India-Indonesia Maritime Cooperation reinforced by the recent visit of the Indian Prime Minister to Jakarta.[37] With Singapore, the relationship should anchor technical cooperation on undersea cable security and MDA, given the IFC-IOR and Singapore's Fusion Centre connection. With Thailand and Myanmar, the BIMSTEC and Bay of Bengal sub-regional architecture should be the primary vehicle, alongside the Trilateral Highway's maritime logistics components. With Malaysia and Brunei, cooperation can focus on hydrocarbon-sector maritime safety and chokepoint monitoring given their position along the Malacca Strait and SCS, respectively. With Cambodia and Laos, engagement should remain modest and largely confined to capacity and capability building scholarships and HADR training, avoiding any framing that could be perceived as anti-China.

The connective tissue between the two tracks could be the AIMSWG, distinct from existing dialogue mechanisms. This working group could be tasked specifically with cataloguing which initiative could be 'multilateralised' for wider ASEAN participation. It would have to consider political sensitivities and ensure that ASEAN-wide mechanisms remain interoperable with bilateral systems already in place. This would ensure that bilateral progress is not orphaned from the multilateral architecture.

2.3.6.3. Short-, Medium-, and Long-Term Avenues

In the short term, roughly one to two years, priorities should include formally establishing the AIMSWG under the existing Track 1.5 ASEAN-India dialogue architecture; expanding IFC-IOR liaison arrangements to ASEAN coastal states that have not yet positioned ILOs; conducting a baseline interoperability assessment between Indian and ASEAN naval and coast guard communication systems; and initiating a joint India-ASEAN technical dialogue on undersea cable protection under the IPOI Maritime Security pillar.

In the medium term, roughly three to five years, priorities should include scaling bilateral defence capability cooperation; building on the BrahMos precedent with the Philippines a more structured Indo-Pacific capacity and capability partnership facility offering standardised financing terms for ASEAN maritime states seeking to diversify suppliers; institutionalising the biennial MILAN exercise as the anchor multilateral naval engagement linking India's Andaman and Nicobar Command with ASEAN navies; establishing a standing HADR component pre-positioned for Bay of Bengal contingencies; developing a joint India-ASEAN position for emerging maritime law issues; and operationalising a Bay of Bengal sub-regional MDA arrangement linking India, Myanmar, Thailand, Sri Lanka and Bangladesh under a BIMSTEC maritime security mechanism.

In the long term, five to ten years, the aspiration should be to pursue an Indo-Pacific maritime security architecture in which the India-ASEAN relationship constitutes the stable middle layer. This could be more substantive than the ASEAN Regional Forum, less alliance like and built around a genuinely interoperable MDA network spanning the eastern Indian Ocean and the SCS; a mature defence-industrial relationship in which Indian defence exports form a meaningful part of the procurement mix for several ASEAN navies; joint India-ASEAN leadership on ocean governance issues within global fora, leveraging shared interests; and a standing consultative mechanism, not a formal alliance commitment, for contingencies such as Taiwan and strait disruptions, a major chokepoint incident, or large-scale disasters.

2.4. Conclusion

India and ASEAN approach maritime security from distinct but increasingly complementary vantage points and an interconnected strategic space. India's expansive SAGAR and now MAHASAGAR vision and ASEAN's more constrained, consensus-bound approach shaped by the immediate realities of the SCS, the Taiwan conflict spillover risks, and growing concern over critical undersea infrastructure are an intrinsic part of the interconnected strategic space. The increasingly assertive posture of the Philippines, while strategically significant, has also exposed the limits of ASEAN cohesion on its most sensitive maritime issue. This is a reality, India must navigate carefully. Rather than seeking a single overarching maritime security treaty or alliance, which is neither feasible nor desirable given ASEAN's institutional culture and India's strategic autonomy tradition, the most promising path is a dual-track framework that allows substantive bilateral cooperation. Addressing the institutional, interoperability, information-sharing, financing, normative-coordination, and perception gaps through the short-, medium-, and long-term measures proposed would transform the current pattern of episodic, largely bilateral cooperation into a cogent India-ASEAN maritime security framework.

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3 Global Uncertainties and ASEAN-India Comprehensive Strategic Partnership: An Indian Perspective

Sanjay Pulipaka and Sayantan Ghosal

3.1. Introduction

International politics is a realm of anarchy. Anarchy does not necessarily imply a persistent state of war. Instead, it implies the absence of a centralised government above sovereign states in the international polity.[1] In such a context, sovereign states build capabilities to survive. However, the English school thinkers point out that while international politics is a realm of anarchy, it is also modulated by institutions, norms, rules, and sometimes by shared common purposes such as economic prosperity.[2]

In recent years, the behaviour of major powers has undermined the functioning of international organisations and the norms/rules that govern international trade and politics. While China surreptitiously rigged the international trade system, the United States (US) undermined it openly with its tariff policies. It is well known that China has excess domestic industrial capacity. To emerge as a leading economy, China has invested heavily in various manufacturing sectors. However, there was a mismatch between domestic consumption and its industrial capacities. Over the years, household spending accounted for just about 40 per cent of China's GDP, which is well below that of many developed countries and of developing countries such as Vietnam and Mexico.[3] Given domestic excess industrial capacities and low domestic consumption rates, China aggressively promoted its manufactured exports.

China has implemented policy measures such as industrial land discounts,[4] preferential loans (for high-tech items such as semiconductors and electric vehicles),[5] tax incentives (including for consumer goods manufacturing)[6], and other support initiatives to ensure the exports remain competitive in the global economy.[7] To retain its export dominance in the world economy, China has signed numerous free trade agreements (approximately 23 as of 2024)[8], played a proactive role in the creation of regional trade agreements (such as the RCEP), and also launched the Belt and Road Initiative (BRI) in 2013. In response to China's export promotion strategies, various developed countries sought to curtail the flow of Chinese goods into their countries by imposing additional duties [such as the European Commission's imposition of additional duties – ranging from 7.8 per cent to 35.3 per cent – on battery electric vehicles in 2024][9] and encouraging domestic industrial production.[10] Despite pushback from developed economies (such as in Europe), it is unlikely that China will alter its export promotion strategy, as domestic consumption rates continue to be less than satisfactory. On the other hand, the international

trading system received a severe jolt because of US President Trump's tariff policies. Some of Trump's tariff policies did not withstand judicial scrutiny, as the US Supreme Court held that the imposition of tariffs under the International Emergency Economic Powers (IEEPA) Act was unconstitutional.[11] Despite such judicial pushback, President Trump recently imposed "new tariffs of 10 per cent and 12.5 per cent on goods from 60 trading partners."[12] While China and the US continue to generate considerable stress on the world trading system, the less-than-efficient functioning of various global organisations such as the United Nations (UN) has contributed to uncertainty in global politics.

The victors of the Second World War defined the architecture of various global institutions. However, there have been significant shifts in global power dynamics, and countries such as India have made significant contributions to global peace. In fact, as of 2025, India has participated in over 50 UN peacekeeping missions[13] and has contributed significantly in terms of development assistance to meet the Sustainable Development Goals. And yet, countries such as India have not been inducted as permanent members of the UN Security Council (UNSC). Ideally, given the growing polarisation and complexity in international politics, international organisations should include countries that can bridge the fault lines. Sadly, the permanent members of the UNSC have failed to proactively pursue the reform agenda, and consequently the UN is struggling to address the global security challenges. Even more disheartening have been attempts by some of the major powers to delegitimise the UN and its affiliated organs. It was not surprising that there is no concerted effort by the UN to honestly resolve conflicts such as the wars in Ukraine and in the Middle East. Developing countries and emerging economies have experienced considerable challenges because of these wars. The closure of the Strait of Hormuz compelled South Asian, Southeast Asian, and East Asian countries to contend with shortages of energy resources, which led to a significant increase in the prices of other commodities/products, including fertilisers, and the oil price hike was felt across all sectors of the economy.

Interestingly, the Ukraine and the Middle East wars, instead of prompting countries to consolidate alliances, have nudged them to re-examine the utility of alliances. The concerns pertaining to a possible 'entrapment' [when a country(ies) drag their allies into a war] and 'abandonment' [when allies refuse to cooperate in war] got amplified. For instance, there were apprehensions among many in Europe that the Trump administration is keen to strike a deal with Russia and thereby abandon Ukraine.[14] On the other hand, President Trump accused Ukraine President Volodymyr Zelenskyy of attempting to entrap the US in a bigger war by "gambling with World War Three."[15] Similarly, there is a perception among many in the US that "Israel had dragged the United States into a war with Iran."[16] On the other hand, Israeli leadership was reportedly unhappy with the 14-point Memorandum of Understanding between the US and Iran, specifically on the "inclusion of Lebanon in the agreement, as Israel considers Iran and Lebanon separate arenas."[17] To sum up, these wars had a negative impact on the global economy, demonstrated the weakness of global institutions, showed the limits of alliance frameworks, and it is precisely for these reasons that the uncertainty in international politics will persist for a long time to come.

The global challenges are daunting, and they require sovereign states to focus on institutions and relationships that promote peace and stability. From the perspective of India and other countries in the region, the Association of Southeast Asian Nations (ASEAN) has promoted peace and stability in the Indo-Pacific region. Perhaps there was some hesitation in India to engage with ASEAN during the Cold War era. The independent functioning of ASEAN, along with the expansion of its membership to include 11 countries in Southeast Asia, has bolstered its legitimacy in the region. One of the striking features of ASEAN has been its consensus-based decision-making approach, which was often criticised

for contributing to delays and a lack of decisive action. Such evaluation fails to take note of regional economic integration and habits of cooperation that ASEAN has engendered in the region. Furthermore, it should be recognised that the uncertainty in global politics today is also a consequence of unilateral actions of major powers.

ASEAN today has numerous frameworks [such as East Asia Summit (EAS), ASEAN Defence Ministers' Meeting (ADMM), ADMM-Plus, ASEAN Maritime Forum (AMF), ASEAN Regional Forum (ARF), and others, which indicate ASEAN's convening power to address traditional and non-traditional security issues. While it is true that ASEAN could not resolve the South China Sea territorial disputes, it did play a positive role in responding to the Cambodia Conflict and the Thailand-Cambodia Border Crisis (2025).

Of course, there were instances when some ASEAN members were disappointed with the conduct of other member states, such as with Myanmar's military for its 2021 military coup. ASEAN did enunciate a Five-Point Consensus roadmap, and yet it refrained from aggressively intervening in the domestic politics of Myanmar. There can be debates on the prudence of such strict adherence to the principle of non-interference, but the possibility that such a policy may have contributed to stability in the region merits reflection.

In the coming years, ASEAN will need to develop a conflict-resolution toolkit that does not undermine the sovereignty of nation-states while maintaining regional stability.

3.2. India, ASEAN and the Road to CSP

Over the years, there has been consolidation of India-ASEAN engagement, and today they share a comprehensive strategic partnership (CSP). ASEAN was established in 1967. However, the shift in global political dynamics – the collapse of the Soviet Union and the end of the Cold War – laid the foundation for enhanced India-ASEAN engagement. Additionally, India's economy experienced severe stress in the late 1980s and early 1990s, which prompted India to shun socialist policies and adopt liberal economic policies as well as look for new economic partners. The rapid economic growth of Southeast Asian economies [for example: Vietnam 8.6 per cent (1993), Singapore 11.5 per cent (1993), Thailand 8.3 per cent (1993)][18] also caught the attention of many policymakers in India.

India's Southeast Asia engagement was not merely rooted in economic interests; there were robust historical and cultural relations which provided a foundation for enhanced engagement between the two. India and Southeast Asia "...inhabit a shared geographical and cultural space; each country retains its distinctiveness and unique identity. It is this celebration of diversity, of plural yet related cultures."[19] India's cultural presence is evident in numerous temples spread across Southeast Asia, similar cultural practices, and shared mythologies. For instance, there are numerous versions of the Ramayana across Southeast Asia. The spread of Buddhism from India to Southeast Asia also resulted in interconnected spiritual spaces. For instance, the Shwedagon Pagoda in Yangon houses a sacred relic of the Buddha's hair, which is venerated by many, and many from Southeast Asia often travel to Bodh Gaya in India.

During the Second World War, about 7,50,000 Indian soldiers played a pivotal role in pushing back Japanese forces in Southeast Asia. Geographically, India connects West Asia, South Asia, and Southeast Asia. These historical, cultural, and political factors laid the foundation for India's economic engagement with Southeast Asia. In terms of institutional engagement, India became a sectoral dialogue partner in 1992 and a full dialogue partner in 1995. ASEAN's membership expanded steadily. With Cambodia joining ASEAN in 1999, ASEAN membership reached 10 countries.

In 2002, the India-ASEAN Summit-level dialogue was initiated, and a year later, India acceded to the Treaty of Amity and Co-operation (TAC).[20] Initially,

some ASEAN countries, such as Malaysia, resisted ASEAN's regular summit-level dialogue with India. For instance, the Prime Minister of Malaysia stated that: "..if you keep on adding new members, soon the grouping itself will lose meaning....Our fear, of course, is that once we admit India, there may be others in the South Asian region who will insist that they should also be a partner...But we have resolved that...We now support an ASEAN-India arrangement in which we have ASEAN+1...But separate from ASEAN+3."[21] However, other ASEAN member states such as "Singapore, Vietnam, Laos and Cambodia, and Thailand" strongly called for ASEAN-India summit meetings, which laid the foundations for robust engagement between the two in subsequent years. [22]

The economic relations between the two countries took an upward turn after the India-ASEAN free trade agreement (FTA) in goods was signed in 2009. Twenty years after becoming a sectoral dialogue partner of ASEAN, the India-ASEAN relationship was upgraded to a strategic partnership in 2012. The Vision Statement of the ASEAN-India Commemorative Summit in 2012 called for increased Political and Security Cooperation through ASEAN-led forums such as ADMM, ARF and AMF.[23] The vision statement also called for "strengthening cooperation to ensure maritime security and freedom of navigation, and safety of sea lanes of communication for unfettered movement of trade in accordance with international law, including UNCLOS."[24] The references to maritime security indicated growing anxiety among Southeast Asian countries with the developments in the South China Sea and a recognition of diversified security partnerships.

Meanwhile, as India registered sustained economic growth and engaged more intensively on international platforms, the Indo-Pacific construct gained greater currency.[25] However, some Southeast Asian countries expressed concern that the Indo-Pacific construct would undermine ASEAN centrality and amplify great power rivalry in the region. To allay such concerns, the Indian Prime Minister, in his Shangri-La Dialogue speech, articulated a seven-point approach to the Indo-Pacific that celebrates ASEAN centrality, a rules-based order, freedom of navigation, and a region free of great-power rivalry.[26] A year later, in 2019, the ASEAN Outlook on the Indo-Pacific (AOIP) was announced. The AOIP called for an Indo-Pacific characterised by cooperation, not rivalry, in which ASEAN-centred processes such as the East Asia Summit (EAS) will serve as a principal platform to address regional issues and promote cooperation.[27] The AOIP constituted an attempt by its member states to embrace an Indo-Pacific regional construct while retaining ASEAN centrality. It should also be noted that, with the articulation of AOIP, there was considerable convergence in the Indo-Pacific visions of ASEAN and India.

Amid the convergence of geopolitical visions, the COVID-19 pandemic, the subsequent disruption of supply chains, and the growing fluidity of international politics, India and ASEAN were nudged to deepen their partnership. At the 2022 Phnom Penh (Cambodia) Summit, the India-ASEAN partnership was elevated to a Comprehensive Strategic Partnership (CSP). A CSP is in play if a partnership, in the long run, results in a favourable balance of power for the cooperating partners. Therefore, a CSP requires a comprehensive agenda for cooperation across the economic, connectivity, political and security domains. Since other chapters in this volume address diverse themes such as economic cooperation, connectivity projects, and people-to-people interactions, the subsequent section of this chapter will focus on India-ASEAN cooperation on non-traditional security threats and defence/security cooperation.

3.3. Non-Traditional Security Threats

The successful realisation of the India-ASEAN comprehensive strategic partnership is contingent on addressing traditional and non-traditional security challenges. ASEAN member states face numerous security challenges, and they have varying degrees of state capacity to address them. Nonetheless, given the

collaborative platforms within ASEAN, its member states are better positioned to address various non-traditional security challenges.

A report of the UN Office on Drugs and Crime (UNODC) points out that "a record 236 tons of methamphetamine were seized in East and Southeast Asia in 2024, a 24 per cent increase from 2023."[28] This poses a few challenges for the countries in the region: first, the above numbers are only indicative, and actual production of illicit narcotics could be much higher; and second, the presence of an illicit narcotic industry can fuel crime and instability, as is evident in Myanmar.

India is located between two narco-producing regions. To its west, Afghanistan has a long history of opium production, and to its east, the Golden Triangle region, comprising the forested regions of Myanmar, Laos, and Thailand, is also a significant hub of illicit drug production. Myanmar constitutes a significant transit point, not the only one, for the flow of illicit drugs into India. Myanmar is the only ASEAN country with which India shares a territorial boundary or border. The 1643-kilometre border between the two countries is porous and witnesses significant informal movement of people. Due to the persistent political instability and conflict in Myanmar, there has been a significant increase in opium production [over 50 per cent between 2020 and 2024].[29] Given the porous borders, a large number of illicit drugs is being trafficked into India. Therefore, many parts of India, particularly northeast India, have become vulnerable to increased consumption of opium, heroin, methamphetamine, and related products. Unlike in its western frontiers, in its eastern neighbourhood, India has countries such as Thailand with robust state capacities and regional frameworks such as ASEAN, which are committed to combating the drug menace. ASEAN has created specialised agencies, such as Airport[30] and Seaport[31] Interdiction Task Forces, and has also established forums, such as the ASEAN Senior Officials on Drug Matters (ASOD), to assist member states in narcotics control and related strategies.[32] Such platforms could be used by India and ASEAN to further scale up cooperation between their agencies and platforms to prevent the flow of illicit drugs through information sharing and joint operations.

India depends heavily on maritime trade to power its economy. Approximately 70 per cent of India's trade by volume and 90 per cent by value is conducted through the maritime domain. Therefore, the safety and security of ships carrying goods are significant to India. This is more so in narrow shipping routes such as the Straits of Malacca, through which an estimated "90,000 merchant vessels and 60 per cent of global maritime trade pass through."[33]

Globally, there were more piracy and armed robbery (PAR) incidents in 2025 (171) than in 2024 (146). The regions that witnessed the most PAR were the Straits of Malacca and the Singapore area (122 incidents), West Africa (21 incidents), and the Indian Ocean (10 incidents), followed by other regions.[34] It should be noted that, in the recent past, the PAR in the Strait of Malacca and Singapore area have not resulted in hostage taking or grievous bodily harm to the sailors.[35] Nonetheless, PAR in Southeast Asia is a source of concern.

India plays an important role in containing PAR activities in the Indian Ocean region due to its robust presence. In fact, in 1999, the Indian Navy deployed a task force to take back a hijacked Japanese ship, Alondra Rainbow.[36] In 2024, the Indian Navy was able to rescue hijacked ships – MV Ruen and FV Al Naeemi.[37] India is one of the contracting parties to the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP), which was formalised in 2004 and is located in Singapore. Many Southeast Asian countries also have Liaison Officers at India's Information Fusion Centre – Indian Ocean Region (IFC-IOR). The inaugural ASEAN India Maritime Exercise was held in 2023 with the aim of increasing interoperability and to "promote peace, stability and security in the region."[38]

In addition to securing sea lanes, India is also a Humanitarian Assistance and Disaster Relief (HADR) first responder in the neighbourhood and in the Indian Ocean Region. India's HADR capabilities came to the fore after the 2004 Indian Ocean earthquake and tsunami. The earthquake and tsunami resulted in the tragic loss of the lives of over 2,25,000 people.[39] India launched a massive, coordinated response involving the Air Force, Navy, and Army, "enabling large-scale airlift of relief material, evacuation of survivors, and search-and-rescue missions."[40] Even in subsequent years, India has proactively engaged in HADR activities in Southeast Asia. Following an earthquake and tsunami in Central Sulawesi province in Indonesia in 2018, India launched Operation Samudra Maitri to assist the affected population with relief material and medical personnel.[41] In 2020, when Cambodia was reeling from floods, India's naval ship, INS Kiltan, delivered 15 tons of relief material.[42] In 2024, India provided approximately 35 tonnes of humanitarian assistance to Vietnam after it was hit by Typhoon Yagi, including water purification items, kitchen utensils, solar lanterns, and other materials.[43] Similar assistance was also provided to Vietnam and Laos following the destruction caused by Typhoon Yagi.[44] India launched Operation Brahma to provide disaster-relief materials after Myanmar experienced an earthquake in 2025. Over the past two decades, India has provided disaster relief and medical assistance to Myanmar more than a dozen times.[45] In January 2026, India dispatched 30 tonnes of humanitarian assistance to the Philippines after the country was struck by a super typhoon.[46] These are a few instances, not an exhaustive account, of India's hard work in Southeast Asia and its neighbourhood.

The 2004 Indian Ocean earthquake and tsunami, and the subsequent demonstration of India's capabilities and its willingness to coordinate with other major powers, laid the foundation for the emergence of the Quad comprising Australia, India, Japan and the United States. The Quad HADR efforts are defined by meetings and military exercises to ensure greater "interoperability and operational synergy to undertake HADR operations".[47] In an important development, the 2025 Quad Foreign Ministers' Meeting Joint Statement referred to the ongoing efforts to "strengthen shared airlift capacity and leverage…collective logistics strengths to respond to natural disasters more rapidly and efficiently, providing support for regional partners."[48] The Quad member states collaborated with New Zealand, South Korea and Vietnam under the rubric of Quad Plus on healthcare during the COVID-19 pandemic.[49] India launched a massive Vaccine Maitri (Vaccine Friendship) initiative, and under the Quad vaccine initiative, some of the Southeast Asian countries such as Cambodia and Thailand also received vaccines from India.[50]

There are a host of other non-traditional security threats that require coordinated action by India, ASEAN and its member states. For instance, hundreds of Indian tech professionals were tricked into working in extremely harsh conditions in cyber scam centres in Myanmar-Thailand. Coordinated operations with assistance from law enforcement agencies in Thailand and other countries in the region resulted in the rescue and repatriation of these individuals to India.[51] The cyber scam centres are often operated by, or protected by, various narco-trafficking groups, indicating a fusion of non-traditional security threats. A similar challenge can also be seen with reference to Illegal, Unreported and Unregulated (IUU) fishing. It is estimated that IUU fishing accounts for 20 per cent of global catch,[52] and it not only undermines sovereignty and the economy but also threatens a country's food security. Southeast Asia and the Indian Ocean Region have witnessed significant IUU fishing activity. According to reports, Southeast Asian countries lost about US$ 6 billion because of IUU fishing in 2019.[53] In locations dotted with maritime disputes, the application of IUU fishing regulations is also contested. There are also growing concerns that IUU fishing is creating maritime transport networks for narco-trafficking.[54]

These experiences demonstrate that non-traditional security threats rarely respect sovereign state and regional boundaries. Therefore, to consolidate the

India-ASEAN comprehensive security partnership, it becomes imperative for India, ASEAN, and its member states to regularly interact and fine-tune institutional cooperation to address such challenges. It should also be recognised that non-traditional security threats can create conditions that lead to a long-term poly-crisis, implying that India and ASEAN will have to scale up cooperation in the traditional security and defence domains.

3.4. Prioritising Defence and Security Cooperation

India and ASEAN engage on various security issues through platforms such as the ADMM, ARF, EAS and other related forums. However, it should be recognised that India's security cooperation with ASEAN is also bolstered by India's bilateral security and defence partnerships with many Southeast Asian countries.

Vietnam: India has a very strong and friendly relationship with Vietnam. During the Vietnam War, India unhesitatingly supported the people of Vietnam. Over the years, the threats both countries face have been similar. While India is responding to aggressive territorial assertions on its continental domains, Vietnam is responding to similar phenomena in the maritime domain.

There is also considerable convergence on a host of global issues between the two countries. India has often avoided entanglement in great-power rivalries by pursuing policies of nonalignment and, subsequently, strategic autonomy. At the same time, it should be noted that within the rubric of strategic autonomy, India scaled up its interactions with major powers without hesitation through various frameworks such as the Quad and BRICS. Similarly, Vietnam also follows a 'Four Nos' policy ("no military alliances, no siding with one country to act against another, no foreign military bases, and no using force or threatening to use force in international relations").[55] And yet, it has developed positive relations with Japan and the United States. Interestingly, Vietnam was also a member of the Quad+ framework during the pandemic. Given such convergences, it was no surprise that India and Vietnam elevated their relationship to a comprehensive strategic partnership in 2016.

India's strategic partnership with Vietnam has gained significant momentum over the past decade. In 2022, an India-Vietnam Defence Policy Dialogue was launched, an MOU on Mutual Logistics Support was inked, and a 'Joint Vision Statement on India-Vietnam Defence Partnership towards 2030' was announced to consolidate the defence partnership.[56] India also provided Vietnam with 12 High-Speed Guard Boats, manufactured under the US$ 100 million Line of Credit.[57] A year later, an Indian-made missile corvette, INS Kirpan, was gifted to Vietnam.[58] Reports suggest that India has agreed to provide Vietnam with BrahMos missiles,[59] which would add significant firepower to the latter's defence forces. In addition to providing defence platforms, India conducts joint military exercises with Vietnam (VINBAX) and trains Vietnam's defence personnel on Russian Kilo-class submarines and Russian-made Sukhoi Su-30 fighter aircraft.[60] In 2025, both sides signed the Mutual Submarine Search, Rescue Support, and Cooperation, as well as an agreement to strengthen defence industry cooperation.[61] A year later, in 2026, the first India-Vietnam Cyber Policy Dialogue was organised to deepen cooperation in cybersecurity and ICT governance.

Singapore: Singapore, a city-state, with its economic progress and political stability, moulds regional security in the Indian Ocean and the Pacific. It is also because of Singapore that the Straits of Malacca remain a safe transit point for global commerce.

Singapore's leadership often advocated for India's greater participation in ASEAN, as it would contribute to peace and stability in Asia. For instance, then Singapore's Prime Minister, Goh Chok Tong, stated: "I like to think of (a) new Asia as a mega jumbo jet that is being constructed…Northeast Asia, comprising China, Japan and South Korea, forms one wing with

a powerful engine…India, the second wing, will also have a powerful engine…The Southeast Asian countries…will be lifted by the two wings." As the Indo-Pacific construct gained credence, Singapore viewed India's role as critical to the security of the Indo-Pacific region and to the Strait of Malacca and the Andaman Sea, which constitute critical Sea Lines of Communication.[62]

In 2003, both countries signed the Defence Cooperation Agreement (DCA).[63] Defence cooperation between the countries is promoted through various forums, such as the Defence Ministers' Dialogue and the Defence Policy Dialogue. Both countries have exchanged a Letter of Intent permitting Singapore to conduct live fire tests at the Chandipur Integrated Test Range in India.[64] India and Singapore have also agreed to "deepen defence technology cooperation in emerging areas such as Quantum Computing, AI, Automation and Unmanned Vessels."

India and Singapore have a long history of conducting joint exercises. The Singapore-Indian Maritime Bilateral Exercise (SIMBEX) was first initiated in 1994.[65] The Exercise Bold Kurukshetra, between the two armies, was first initiated in 2005, and the 14th edition was hosted by India in Jodhpur in 2025.[66] In 2007, both countries signed a 'Bilateral Agreement for the Conduct of Joint Military Training and Exercises in India between the Republic of Singapore Air Force (RSAF) and the Indian Air Force (IAF), which facilitated RSAF use of Kalaikunda Air Force Station for joint training.[67] To enhance security in the maritime domain, both countries are part of trilateral initiatives such as the Singapore-India-Thailand Maritime Exercise (SITMEX).

Thailand: Thailand is strategically located in continental Southeast Asia. Despite considerable political strife in the neighbourhood, Thailand has achieved impressive economic growth. Thailand and India share a maritime boundary in the Andaman Sea. Therefore, for India, Thailand is critical to maritime security and overall regional stability. India-Thailand relationship was upgraded to a strategic partnership in 2025, and both countries "reaffirmed their shared interests in a free, open, transparent, rules-based, inclusive, prosperous and resilient Indo-Pacific region and reiterated their strong support for ASEAN Centrality."[68] Both countries have created regular interactions under the Defence Dialogue mechanism. The most recent defence dialogue was held in June 2026 and explored ways to further strengthen military-to-military engagements and capacity-building initiatives.[69] While the militaries of both countries conduct joint military Exercise MAITREE,[70] the navies conduct joint maritime patrolling and, in 2024, conducted a maiden bilateral exercise, named 'Ex-Ayutthaya.'[71] Efforts are underway to strengthen the defence industry cooperation between the two countries.

Given the fluidity and the need to maintain a delicate balance in Thailand's relations with the US and China, Bangkok has, over the years, sought to consolidate its relationship with India as part of its diversification strategy. There is also considerable convergence in the vision for external engagement between India's Act East Policy and Thailand's Look West Policy. In addition to ASEAN, India and Thailand are working to consolidate their partnership through the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). The BIMSTEC National Security Chiefs' Meeting, with its comprehensive agenda, has proved to be a useful platform for exchanging notes on diverse security threats in the region.[72] Both countries also collaborate extensively on counter-terrorism, and there were high-profile extraditions from Thailand to India of individuals for their criminal activities and also for support to insurgent groups.[73]

Myanmar: The challenge of insurgent groups operating from Myanmar is a challenge for India. Because of the political instability in Myanmar, the State's writ sometimes does not extend to all border regions. As noted earlier, India has a long and porous border with Myanmar. Therefore, political, social, and economic developments in Myanmar tend to have a spillover impact on India. To address such challenges,

in 2014, a Memorandum of Understanding (MoU) on Border Cooperation was signed, which mandates coordinated patrols of the border regions and the exchange of information pertaining to the trafficking of weapons and illicit drugs.[74] There were reports of coordinated operations – Operation Golden Bird[75] and Operation Sunrise[76], by the two militaries to mitigate the challenge posed by various insurgent groups. To discuss insurgency-related matters and non-traditional security issues, the Regional Border Coordination Committee Meetings are convened regularly.[77] In 2019, an MoU on defence co-operation and maritime security cooperation was signed between the two countries. There were regular visits by the leadership of defence establishments of the two countries. The defence forces of both countries participate in regular exercises such as the India-Myanmar Bilateral Army Exercise (IMBEX),[78] the Indo-Myanmar Coordinated Patrol (IMCOR), and a Table Top Exercise between the Air Forces of the two countries.[79]

The Philippines: During much of the Cold War, relations between India and the Philippines were constrained. India pursued a policy of non-alignment, while the Philippines was an ally of the United States. Consequently, the bilateral relationship did not flourish. However, in recent years, there has been considerable strategic convergence between the two countries. India is responding to aggressive grey-zone tactics along its continental borders (such as in Galwan Valley, Chumar, Demchok, and Doklam Plateau). The Philippines is responding to the construction of artificial islands (such as Mischief Reef and Scarborough Shoal) by Beijing in the South China Sea. The shared threat perceptions are nudging the two countries, an ally of the US and a country that celebrates strategic autonomy – towards greater defence cooperation.

During the visit of the President of the Philippines, Ferdinand Romualdez Marcos Jr, to India in 2025 there were four important developments: first, a formal declaration of strategic partnership was announced; second, a plan of action to operationalise the partnership was agreed upon; third, terms of reference for talks between the defence forces of both countries were approved; and fourth terms of reference for enhanced maritime cooperation between the two countries were finalised.[80] The South China Sea was the site of the first India-Philippines naval exercises in 2025,[81] and India also delivered three batteries of BRAHMOS supersonic cruise missiles as part of a US$ 375 million deal.[82] With the Philippines expressing interest in purchasing the Aakash Surface-to-Air Missile from India,[83] Delhi and Manila are emerging as close defence partners.

Indonesia: India and Indonesia are maritime neighbours and have significant opportunities to collaborate in maritime, economic and political domains. Both countries are working to improve connectivity, people-to-people interactions, tourism and trade between Aceh Province, Indonesia and Andaman & Nicobar Islands (ANI) in India.[84] In addition to economic interactions, both countries exhibit significant convergence in their foreign policy visions. Indonesia's policy of avoiding military alignments and its foreign policy doctrine of "rowing between two reefs" are in consonance with India's strategic autonomy construct. While Indonesia was the Chair of the G20 in 2022, India, as the Chair, organised the leadership summit in September 2023. Both countries made sustained efforts to bring the developing countries' agenda to the G20 and other global platforms.

In terms of regional and national security, Indonesia is also contesting China's territorial claims. It is well known that Beijing claims that Natuna Island in Indonesia and the adjacent sea are part of its nine-dash line. Indonesia has often reiterated that the Chinese "claims have no international legal basis.[85]" The foreign policy and security establishments of India and Indonesia regularly interact through various engagements, such as foreign office consultations, the security dialogue, the defence ministers' dialogue, the joint defence cooperation committee, and joint working groups on counterterrorism and narcotics. With an intent to promote maritime safety and

security, develop marine resources, and collaborate on disaster risk management, a 'Shared Vision of India-Indonesia Maritime Cooperation in the Indo-Pacific' was signed in 2018.[86]

India and Indonesia also conduct numerous joint defence exercises. The 10th edition of Garuda Shakti[87] (comprising special forces of both countries) and the fifth edition of Samudra Shakti[88] (maritime exercises) were organised in India. In addition, the India-Indonesia Coordinated Patrol (IND-INDO CORPAT)[89] has become a regular feature, and defence forces interact regularly in other multilateral exercises. Indonesia also reportedly showed interest in procuring India's BRAHMOS missile systems.[90] India is also very keen to nurture joint ventures with Indonesian firms to process and refine critical minerals such as nickel, a key component of EV batteries. There is growing diversity in India-Indonesia economic, political, and security interactions, indicating the deepening of the comprehensive strategic partnership between the two countries.

Malaysia: There has been a gradual evolution of the India-Malaysia defence relationship. In 1993, an MoU on defence cooperation was signed between the two countries, and in subsequent years, Malaysia-India Defence Cooperation Committee (MIDCOM) meetings were regularly held to promote defence cooperation.[91] The ships of both navies have been calling at each other's ports and regularly participating in the bilateral Exercise Samudra Laksamana.[92] The militaries of India and Malaysia have been regularly participating in the bilateral army exercise Harimau Shakti.[93] Malaysia and India are also engaged in the maintenance of the SU-30 MKM aircraft for the Malaysian Air Force.

3.5. Conclusion

It should be noted that the above information does not constitute a detailed description of all aspects of India's defence/security cooperation with Southeast Asian countries. However, the above analysis demonstrates a wide-ranging defence/security cooperative agenda that India is pursuing with its Southeast Asian neighbours, which will have long-term implications for the power balance in the Indo-Pacific.

As noted, there is convergence in India's and ASEAN's visions for the Indo-Pacific. Furthermore, India's position on the 2016 judgment of the international arbitration tribunal of the South China Sea was in consonance with the interests of its Southeast Asian friends. India's official statement noted that it "urges all parties to show utmost respect for the UNCLOS, which establishes the international legal order of the seas and oceans."[94] Given the commonality of security threats and the growing habits of cooperation to address non-traditional security issues, defence and security cooperation between India and ASEAN will be further consolidated.

The recent Hormuz Crisis has underlined the importance of keeping the sea lines of communication open at all times. India and ASEAN will need to work closely to ensure that a crisis akin to the closure of the Strait of Hormuz is not repeated in their maritime domains. India is working to improve its economic and security presence in the Andaman & Nicobar Islands (ANI). The Great Nicobar Project [with a greenfield international airport, a hybrid power plant, an International Container Transhipment Terminal (ICTT) and a new township] aims to transform the ANI into a major hub of connectivity and economic activity.[95] Thereby, the Great Nicobar Project would protect the sea lanes of communication near one of the busiest routes (the Strait of Malacca)[96] and would also increase economic interactions between India and neighbouring countries, such as Indonesia, Malaysia, Singapore, and Thailand.

Building a robust economic partnership is a critical component of a comprehensive strategic partnership and therefore, the review of the ASEAN-India Trade in Goods Agreement (AITIGA) should be concluded quickly. While the revised AITIGA would partially negate the challenges posed by the trade policies of major powers, it would also constitute

an acknowledgement of the need for new epistemic frameworks that help emerging economies to better prioritise their interests. The criticality of rare earth minerals and the concentration of their processing in a few countries pose a significant challenge and point to the need for India and ASEAN supply chain collaboration.

The enhanced CSP between India and ASEAN mandates a multi-vector [forums such as BIMSTEC and the Mekong-Ganga Cooperation] and multi-track engagement. The perception that India's engagement in the Quad would undermine ASEAN centrality requires critical reflection, as India often reiterated the importance of ASEAN centrality through its policies and also official articulations. India's proactive advocacy of the interests of developing countries on various international forums (stemming from shared anti-colonial struggles) is also in the interests of the Southeast Asian countries.

In every challenge, there is an opportunity. There is growing uncertainty in global politics, fuelled by the policies of major powers, and technological changes that many sovereign states will have to confront. The current uncertainty in global politics also constitutes an important opportunity for India and ASEAN to move closer together and consolidate the CSP to address regional and global challenges.

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4 Reimagining ASEAN-India Comprehensive Strategic Partnership amidst Global Uncertainties: An ASEAN Perspective

Vo Xuan Vinh

4.1. Introduction

The global economy is undergoing a period of rapid and far-reaching transformation. Intensifying geopolitical competition, economic fragmentation, technological disruption, climate change, pandemics, and mounting pressures on multilateral institutions have collectively generated a more uncertain and contested global environment. These developments have encouraged states to adopt more flexible diplomatic strategies, diversify their partnerships, strengthen resilience, safeguard strategic autonomy, and protect their national interests amid shifting distributions of power.

Against this backdrop, ASEAN and India have developed a significant degree of strategic convergence in their respective visions of regional and global order. ASEAN has consistently sought to preserve its centrality as the primary driving force of regional cooperation through mechanisms such as the East Asia Summit (EAS), the ASEAN Regional Forum (ARF), and the ASEAN Defence Ministers' Meeting-Plus (ADMM-Plus) (Vo, 2023). India, meanwhile, has increasingly emphasised strategic autonomy and multi-alignment, engaging simultaneously with multiple centres of power while avoiding rigid bloc politics (Hall, 2016; Kumar, 2022). Through its Look East and Act East policies, as well as the Indo-Pacific Oceans Initiative (IPOI), India has identified ASEAN as a central partner in promoting a rules-based, open, balanced, and stable Indo-Pacific order (MEA, 2018). This convergence has provided an important foundation for ASEAN-India relations since the end of the Cold War and the launch of India's Look East Policy in 1992. Over the past three decades, cooperation between the two sides has expanded across political-security, economic, connectivity, technological, and socio-cultural domains.

This chapter examines how the ASEAN-India Comprehensive Strategic Partnership (CSP) has evolved in response to contemporary global uncertainty. It analyses the strategic convergence between ASEAN centrality and India's Act East Policy and Indo-Pacific Oceans Initiative, evaluates the principal achievements and remaining limitations of the CSP since its elevation in 2022, and identifies the priorities likely to shape future cooperation. The chapter argues that the CSP has become an increasingly important platform through which ASEAN and India seek to advance their respective interests, strengthen regional resilience, and contribute to a stable, inclusive, and rules-based Indo-Pacific order.

4.2. Current Global Uncertainties

China's rise has increasingly challenged the position of the United States as the established leader of world politics and has the potential to produce what Organski described as "a huge transference of power", ultimately contributing to the emergence of a new international order (Organski, 1968). China's rapid economic and strategic ascent has progressively weakened the foundations of the US-led unipolar order and generated growing debate about the possible emergence of a bipolar system centred on the United States and China, particularly after the 2008-2009 global financial crisis (Zeng and Breslin, 2016). Although Chinese leaders have publicly rejected the notion of a Sino-American bipolar order or "G2" arrangement (China Daily, 2009), many scholars continue to regard bipolarity as a plausible trajectory for the international system. Such a development has raised concerns that Sino-American relations may become trapped in what Allison (2017) terms the "Thucydides Trap", whereby the rise of a new power generates structural tensions with the established hegemon. While Allison argues that military conflict between the United States and China is not inevitable, the relationship is likely to remain highly adversarial unless a form of "new détente" can be established, as Degterev et al. (2021) observe.

Contemporary Chinese debates on global order, especially relations among major powers, offer an important perspective on these dynamics. Although Gu Bin (2026) of Beijing Foreign Studies University explicitly argues that "China must reject Trump's 'G2' narrative", his analysis nevertheless reflects the growing strategic confidence associated with China's rise. Drawing a historical parallel with the post-Second World War transfer of power from the United Kingdom to the United States, Gu notes that Washington ultimately embraced multilateralism rather than Britain's preference for preserving imperial dominance through exclusive arrangements and privileged spheres of influence. On this basis, he contends that China should similarly prioritise multilateralism over a G2 framework, arguing that China should favour multilateralism just as the United States did eight decades earlier (Gu, 2026). While rejecting formal bipolarity, this argument implicitly acknowledges that China's relative capabilities vis-à-vis the United States increasingly resemble the changing balance of power between the United States and Britain in the mid-twentieth century. Consequently, even if China does not seek a formal G2 arrangement, the ongoing redistribution of power between Washington and Beijing remains one of the most significant drivers of uncertainty in the contemporary international system.

Beyond China's rise, the growing influence of other emerging powers, including India, Brazil, South Africa, and Russia, has further accelerated the transformation of the international system and deepened uncertainty regarding the future of global order. Collectively, these actors challenge the dominance of the US-led order and contribute to the emergence of a more pluralistic distribution of power. In this context, Acharya (2014) argues that the contemporary international system may be witnessing not merely a relative decline in American influence, but potentially "the end of the American world order". According to Acharya, the defining feature of the emerging era is that "the world may never again see the kind of global dominance by any single power", while global governance and international order will increasingly depend on multiple actors, overlapping institutions, and diverse drivers of change (Acharya, 2014).

However, the transition currently underway is more complex than a straightforward shift from unipolarity to multipolarity. As Attinà (2011) observes, the world order is not simply moving from unipolarity to multipolarity but is undergoing a deeper struggle over political authority. Moreover, even if the international system is gradually evolving towards multipolarity, such a transition does not necessarily imply the emergence of a stable or coherent international order. As Shivshankar Menon argues, "in the multipolar world, the distribution of power in the world does not support a world order" (Menon, 2026).

Whether the emerging international system ultimately assumes a bipolar or multipolar configuration, a significant redistribution of international power has clearly taken place since the end of the Cold War. The global order has gradually moved away from the unipolar structure dominated by the United States towards either a bipolar or a multipolar arrangement. If bipolarity historically generated considerable tension, as illustrated by the Cold War rivalry between the United States and the Soviet Union, contemporary bipolarity could similarly produce strategic confrontation and, potentially, armed conflict. By contrast, a multipolar order presents a different set of challenges. The governance of international affairs becomes more complex and uncertain as multiple centres of power pursue distinct, and at times competing, interests. Consequently, the coexistence of several major powers may complicate efforts to build consensus, coordinate collective action, and maintain a stable and predictable international order.

Great-power competition has, therefore, become one of the defining features of contemporary international order, as well as a major source of global instability. As Menon further observes, "the main competition is between the United States and China (with Russia as a lesser partner of China), involving diplomatic, military, and economic manoeuvring"; moreover, as great-power rivalry intensifies, it is accompanied by a corresponding rise in nationalism among both major and middle powers (Menon, 2026).

Alongside this redistribution of power, the United States has sought to preserve its dominant position within the international system. However, particularly during President Donald Trump's administrations, US foreign policy became an important source of uncertainty in world politics. The unpredictability associated with Trump's foreign policy approach contributed to heightened uncertainty within the international order (Japan Institute of International Affairs, 2019, 13). President Trump's "reciprocal tariff" system, employed both to protect domestic industries and reduce trade imbalances and to compel trading partners to follow what the United States considered fair and reciprocal trade practices, further contributed to global economic uncertainty. The policy, which came into effect on 5 April 2025, had significant implications for the global trading system, a crucial determinant of international economic stability (Purba, 2025). These tariff measures represented an additional blow to global economic stability at a time when the world economy was still recovering from successive crises. The COVID-19 pandemic had already "triggered the sharpest downturn in the world economy since the Great Depression", with global GDP contracting by 3.0 per cent in 2020 (Gagnon et al., 2023). Even before the pandemic, however, uncertainty had become a persistent feature of the global economy. As Ozturk and Sheng note, "heightened economic uncertainty, at both national and global levels, greatly contributed to the 2007-09 recession and shaped the speed of the subsequent recovery; years after the end of the recession, there is still no sign of a complete global recovery" (Ozturk and Sheng, 2017).

Compounding these economic pressures, escalating geopolitical conflicts have introduced additional sources of uncertainty into the global economy. The military strikes conducted by the United States and Israel against Iran, together with disruptions to oil supplies from the Middle East and North Africa, have heightened concerns over global energy security. In particular, the closure of the Strait of Hormuz by Iran, a critical maritime chokepoint through which a substantial share of the world's oil exports passes, threatened to disrupt global energy markets and further undermine economic stability. Given the strategic importance of the Strait for international energy flows, any prolonged disruption would likely raise transportation costs, increase energy prices, and heighten uncertainty across global markets. As a consequence, global oil and gas prices rose significantly, generating inflationary pressures across the world economy (Brooks et al., 2026).

Growing competition for influence among major powers is also contributing to the erosion of the

rules-based international order. Recent geopolitical crises have raised increasing concerns about the effectiveness of international law and multilateral institutions in regulating state behaviour. The military strikes conducted by the United States and Israel against Iran, together with Russia's war against Ukraine, have intensified regional instability and heightened questions regarding the management of international conflicts. These developments pose significant challenges to the principles of sovereignty, territorial integrity, and the prohibition of the use of force that have underpinned the international legal order since the adoption of the United Nations Charter in 1945. This trend lends renewed relevance to the realist conception of an anarchic international system, in which no central authority exists above sovereign states to enforce rules or guarantee security (Mearsheimer, 2001).

Alongside the uncertainties generated by great-power competition and the redistribution of power, another significant source of global instability is the growing risk of transnational pandemics. In an era characterised by unprecedented levels of globalisation and interconnectedness, infectious diseases can spread rapidly across borders and produce far-reaching political, economic, and social consequences. The most recent example is the COVID-19 pandemic, which emerged when global integration reached historically high levels. As noted above, the pandemic contributed to a severe contraction of the global economy, disrupted international trade and supply chains, and placed immense pressure on public health systems worldwide. Beyond its economic consequences, the COVID-19 also produced a profound human tragedy. According to Jha et al. (2022), approximately 15 million excess deaths associated with COVID-19 occurred globally during 2020-2021. Moreover, the impact of the pandemic has not entirely disappeared, as COVID-19-related deaths continue to be reported in various parts of the world (WHO, 2026). The financial costs of responding to the pandemic were unprecedented, placing enormous strain on national healthcare systems and public finances. Governments were compelled to mobilise substantial resources to strengthen healthcare capacity, procure medical equipment and vaccines, support public health measures, and mitigate the wider social and economic consequences of the crisis at a time of slowing growth, rising debt-service costs, and competing fiscal priorities (WHO, 2024).

4.3. How ASEAN and India Position Themselves in an Uncertain World Order

ASEAN centrality can be understood as ASEAN's capacity to occupy and sustain a leading position in shaping the norms, institutions, and agendas of the evolving Indo-Pacific regional order. While ASEAN has never issued a single official definition of the concept, its foundational documents, including the ASEAN Charter, the Bali Concord II (2003), and the ASEAN Community Roadmap (2009-2015), consistently emphasise ASEAN's "centrality", "central role", "central pillar", and status as the "primary driving force" in regional cooperation (Vo, 2023). In this sense, ASEAN centrality embodies both an institutional arrangement and a strategic aspiration to preserve ASEAN's relevance, influence, and leadership in an increasingly complex regional environment.

To realise one of the key objectives stipulated in the ASEAN Charter—"to maintain the centrality and proactive role of ASEAN as the primary driving force in its relations and cooperation with its external partners" (ASEAN, 2018)—ASEAN has actively established and strengthened a network of regional forums and cooperative mechanisms centred on ASEAN. Consequently, ASEAN centrality has become institutionally embedded in a range of ASEAN-led mechanisms, including the ARF, EAS, ADMM-Plus, Expanded ASEAN Maritime Forum (EAMF), ASEAN+1 dialogues, and the ASEAN+3 framework, through which ASEAN plays a central role in shaping regional cooperation and governance. Through these institutions, ASEAN occupies the central position

around which major powers and middle powers including China, the United States, Japan, India, Russia, Australia, and South Korea—engage with one another (Vo, 2023).

ASEAN centrality is effective for several reasons. First, ASEAN is widely viewed as a neutral and acceptable platform by competing major powers. Second, enduring distrust among major powers particularly the United States, China, Japan, and India creates a need for a forum in which dialogue and cooperation can continue. By convening these actors and shaping regional agendas, ASEAN exercises diplomatic influence that exceeds its material capabilities. Ultimately, ASEAN centrality enables ASEAN to use its geography, institutional leadership, and political neutrality to engage major powers, sustain regional balance, and promote an open, inclusive, and rules-based Indo-Pacific order.

According to Indian diplomats, the bipolar order of the Cold War gave way to a unipolar system after the collapse of the Soviet Union (MEA, 2021b). India's engagement with multilateralism deepened after 1991, gradually evolving into a strategy of 'multi-alignment' (Kumar, 2022). As India views the post-Cold War 'unipolar moment' as giving way to a more multipolar and rebalanced global order, a multipolar focus has become one of the five pillars of its diplomacy (MEA, 2021b). This vision was reiterated by External Affairs Minister Dr. S. Jaishankar during his meeting with the Russian Foreign Minister on 8 November 2022, when he noted that "India and Russia engage each other in an increasingly multi-polar and re-balanced world" (MEA, 2022b).

More specifically, India has articulated the need for "a dynamic and proactive global strategy in a multipolar world" that can adapt to "fluid and issue-based" alliances and convergences, while engaging simultaneously with multiple centres of gravity in a complex and rapidly changing international environment (MEA, 2021a). In this context, India has argued that "human-centric globalisation must underlie the reformed multilateralism" likely to emerge in the post-pandemic world (MEA, 2021b).

To advance its foreign policy objectives, India participates actively in a diverse range of cooperative mechanisms and organisations with different, and at times competing, purposes and orientations, including the Quadrilateral Security Dialogue (Quad), the Shanghai Cooperation Organisation (SCO), and BRICS. India has also engaged regularly with the G7 as a guest participant, attending five consecutive G7 Summits between 2019 and 2023. In addition, it is a key member of the G20, which brings together the world's major advanced and emerging economies. This approach to multilateral diplomacy has been described by some Indian scholars as *multi-alignment* (Kumar, 2022; Mishra, 2023), a policy India has developed since the mid-2000s to pursue its core interests and ideals in international relations (Hall, 2016).

Alongside this, India's rise over the past two decades has fostered greater confidence and a stronger aspiration to assume a larger role in global affairs, particularly as a leader of developing countries in the Global South. This aspiration was reflected when Papua New Guinea (PNG) Prime Minister, James Marape described Indian Prime Minister Narendra Modi during his visit to PNG in May 2023 as "the leader of the Global South" (Palit, 2023). In his address at Session 6 of the G7 Summit in Hiroshima, Japan, in 2023, Prime Minister Modi explicitly stated his expectation that the discussions of the G7 would help build an important link between the G20 and G7 agendas while giving priority to the hopes and expectations of the Global South (MEA, 2023b). Subsequently, at Session 9 of the same Summit, Indian Prime Minister further emphasised the need to reform international institutions, particularly the United Nations, so that the Global South could have a stronger voice in global governance. He argued that the United Nations was no longer in line with the system of the twenty-first century and stressed the need to reform the UN so that it could effectively represent the voice of the Global South (MEA, 2023c).

Consistent with its commitment to *providing stronger voice to the issues of interest of the Global South*, India has stated that its *endeavour is to build consensus within the G20, champion causes especially of the Global South, and shape the setting of the agenda* (MEA, 2022a). Institutionally, India convened the *Voice of Global South Summit* in early 2023 as an effort to provide a common platform for developing countries to discuss issues, interests, and priorities affecting them, as well as to exchange ideas and solutions. More importantly, the Summit sought to forge a common voice and shared purpose in addressing these concerns and priorities, which India intended to incorporate into the agenda of the G20 Summit in September 2023. The Summit attracted participation from 125 countries, including 29 from Latin America and the Caribbean, 47 from Africa, 7 from Europe, 31 from Asia, and 11 from Oceania, demonstrating broad support for India's initiative to amplify the concerns of the Global South in global governance (MEA, 2023a).

In practice, through its *Vaccine Maitri* (Vaccine Friendship) initiative (MEA, 2022a), India ensured the supply of medical assistance to more than 123 partner countries during the COVID-19 pandemic, including 59 member states of the Non-Aligned Movement (NAM). Beyond these efforts directed towards developing countries, India has also launched major global initiatives aimed at addressing emerging non-traditional security challenges. These include the *International Solar Alliance* and the *Coalition for Disaster Resilient Infrastructure.* While the *International Solar Alliance* has grown to include 112 member countries, among them the United States, Japan, and several Western European nations (International Solar Alliance), the *Coalition for Disaster Resilient Infrastructure* has expanded to encompass 57 member countries and 12 partner organizations, including the Asian Development Bank (ADB), the World Bank Group (WBG), the United Nations Development Programme (UNDP), the United Nations Office for Disaster Risk Reduction (UNDRR), the European Union (EU), and the European Investment Bank (EIB), among others (Coalition for Disaster Resilient Infrastructure).

Therefore, in an era of growing global uncertainty, ASEAN and India have increasingly converged in their understanding of regional and global order. While ASEAN seeks to preserve its centrality within the evolving Indo-Pacific architecture, India advocates a multipolar and rebalanced international system. Despite their different institutional positions, both share a commitment to strategic autonomy, inclusiveness, openness, and rules-based multilateralism, viewing these principles as essential for maintaining stability and cooperation in a rapidly changing world.

For ASEAN, its centrality serves to preserve regional autonomy by ensuring that regional institutions remain open, inclusive, and free from domination by any single major power. Similarly, India's policy of *multi-alignment* reflects its preference for a multipolar order in which states maintain flexible partnerships while avoiding rigid bloc politics. This shared commitment enables both sides to navigate intensifying strategic competition while safeguarding their strategic independence.

ASEAN occupies a pivotal position in India's Look East Policy and, subsequently, its Act East Policy. Through ASEAN-led mechanisms such as the EAS, the ARF, and the ADMM-Plus, ASEAN provides India with important institutional platforms for advancing its engagement in the Indo-Pacific. At the same time, India is widely regarded by ASEAN as a key partner that contributes to the development of a balanced, inclusive, and multipolar regional architecture.

This convergence of interests has been reflected in the steady upgrading of bilateral relations, from a Strategic Partnership in 2012 to a Comprehensive Strategic Partnership in 2022. These developments underline the shared commitment of ASEAN and India to strengthening multilateralism, amplifying the voice of the Global South, and promoting an open, inclusive, and rules-based Indo-Pacific order.

As Joanne Lin, Senior Fellow and Coordinator of the ASEAN Studies Centre at the ISEAS - Yusof Ishak Institute, observes:

> 'For ASEAN, India offers a hedge and a partner in diversification. For India, ASEAN is both a conduit into East Asia's tightly integrated supply chains and a platform from which to project leadership of the Global South. The next phase of ASEAN-India relations will be judged not by rhetoric or perception, but by the tangible outcomes both sides can deliver' (Lin, 2025).

4.4. ASEAN-India Comprehensive Strategic Partnership (2022-2025): Major Achievements and Emerging Challenges in an Era of Global Uncertainty

The elevation of ASEAN-India relations to a CSP in November 2022 marked a significant milestone in the evolution of one of the Indo-Pacific's most important strategic relationships. Since then, ASEAN and India have expanded cooperation across political-security, economic, connectivity, technological, and socio-cultural domains. The CSP has also become a key platform through which both sides advance their shared commitment to multipolarity, strategic autonomy, inclusiveness, and rules-based multilateralism.

4.4.1. Political and Security Cooperation

The CSP has significantly strengthened strategic convergence between ASEAN's commitment to ASEAN centrality and India's Act East Policy as well as its Indo-Pacific Oceans Initiative (IPOI). Since the elevation of relations in 2022, both sides have progressively institutionalised their partnership through a series of key documents, including the *Joint Statement on ASEAN-India Comprehensive Strategic Partnership* (2022), the *Annex to the ASEAN-India Plan of Action* (2023), the *Joint Statement on Maritime Cooperation* (2023), and the *Joint Statement on Strengthening the ASEAN-India Comprehensive Strategic Partnership in the Context of the ASEAN Outlook on the Indo-Pacific (AOIP)* (2024). Collectively, these documents have provided a stronger framework for advancing cooperation across political, security, and maritime domains.

A central feature of the CSP has been the reaffirmation of shared support for ASEAN centrality, an open, inclusive, and rules-based Indo-Pacific order, and the continued importance of ASEAN-led mechanisms such as the ASEAN-India Summit, the EAS, the ARF, and the ADMM-Plus. Both sides have consistently emphasized the promotion of peace, stability, maritime security, freedom of navigation and overflight, and the peaceful settlement of disputes in accordance with international law, particularly the 1982 United Nations Convention on the Law of the Sea (UNCLOS). They have also strengthened cooperation in addressing terrorism, transnational crime, cybersecurity threats, and health security challenges, while enhancing regional resilience through collaboration in military medicine and disaster response (ASEAN, 2022b).

Maritime cooperation has emerged as one of the most dynamic pillars of the CSP. ASEAN and India have expanded practical cooperation in maritime safety, search and rescue, humanitarian assistance and disaster relief, anti-piracy efforts, and the implementation of synergies between AOIP and IPOI. These efforts reflect the shared interest of both sides in preserving freedom of navigation, maritime security, and regional stability amid intensifying strategic competition in the Indo-Pacific. India has further strengthened its regional security profile through enhanced counter-terrorism cooperation and its co-chairmanship of the ADMM-Plus Experts' Working Group on Counter-Terrorism for the 2024-2027 cycle.

Beyond the CSP framework, ASEAN and India continue to engage actively through a wide range of ASEAN-led and sub-regional mechanisms, including the EAS, ARF, ADMM-Plus, ASEAN

Post-Ministerial Conference (PMC) with India, the Mekong-Ganga Cooperation (MGC), and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). These mechanisms contribute to confidence-building, policy coordination, and regional integration across the broader Indo-Pacific.

The partnership has also entered a new phase of institutional development. In July 2025, ASEAN and India adopted the ASEAN-India Comprehensive Strategic Partnership Plan of Action (2026-2030), providing a strategic roadmap for future cooperation while supporting the implementation of ASEAN 2045: Our Shared Future. Building on this momentum, the 22nd ASEAN-India Summit in October 2025 declared 2026 as the ASEAN-India Year of Maritime Cooperation. Proposed initiatives, including an ASEAN-India Maritime Exercise and an ASEAN-India Defence Ministers' Informal Meeting, underscore the growing operational dimension of maritime cooperation and highlight the increasing strategic significance of the partnership in regional security affairs (ASEAN, 2026a).

4.4.2. Economic and Connectivity Cooperation

Economic cooperation remains one of the strongest pillars of the ASEAN-India CSP. Bilateral trade increased from US$ 101.9 billion in 2023 to US$ 106.9 billion in 2024, consolidating India's position as one of ASEAN's major trading partners (ASEAN, 2025a). At the same time, both sides continued negotiations on the review of the ASEAN-India Trade in Goods Agreement (AITIGA) with the aim of making it more business-friendly, reducing trade barriers, and enhancing its responsiveness to evolving supply-chain challenges. Beyond trade, India remained ASEAN's sixth-largest trading partner among ASEAN Dialogue Partners and the tenth-largest source of foreign direct investment in 2024, accounting for approximately 1.41 per cent of ASEAN's total inward FDI. Institutional mechanisms such as the ASEAN-India Business Council (AIBC), the ASEAN-India Business Summit, and the ASEAN-India Expo have further strengthened business-to-business engagement and facilitated discussions on trade, investment, and supply-chain cooperation (ASEAN, 2026a).

Connectivity has emerged as another major area of cooperation under the CSP. ASEAN and India have continued to advance physical connectivity through projects such as the India-Myanmar-Thailand Trilateral Highway and its proposed extension to Lao PDR and Cambodia, which is expected to enhance linkages between the ASEAN Highway Network (AHN) and India's eastern transport corridors. These efforts complement broader ASEAN connectivity initiatives and contribute to strengthening regional economic integration. Connectivity cooperation has also been institutionalised through regular engagement between India and the ASEAN Connectivity Coordinating Committee (ACCC). Since the adoption of the Master Plan on ASEAN Connectivity (MPAC) 2025, connectivity has become a regular component of ASEAN-India cooperation and is expected to remain a priority under the ASEAN Connectivity Strategic Plan (ACSP) adopted in 2025. In addition, India has supported connectivity projects through lines of credit and financing mechanisms aimed at developing sustainable physical and digital infrastructure across Southeast Asia (ASEAN, 2026a).

Digital connectivity has gained increasing importance as both sides seek to improve links among communities, businesses, institutions, and governments across geographical boundaries. In an era of economic uncertainty and supply-chain disruptions, digital connectivity is increasingly viewed as a strategic instrument for enhancing regional resilience, facilitating economic diversification, and supporting inclusive growth.

Tourism and people-to-people exchanges have also recovered strongly following the COVID-19 pandemic. Visitor arrivals from India to ASEAN increased from 4.29 million in 2023 to 5.88 million in 2024 (ASEAN, 2025a). Recognising tourism's growing

contribution to economic recovery and regional connectivity, ASEAN and India designated 2025 as the *ASEAN-India Year of Tourism* and launched a range of new initiatives to promote tourism cooperation. Guided by the *ASEAN-India Tourism Work Plan 2023-2027*, which encompasses seventeen activities covering sustainable tourism, tourism education and training, and tourism quality standards, both sides have expanded cooperation through initiatives such as the ASEAN-India Cruise Dialogue, tourism professional exchange programmes, and joint marketing campaigns. Prime Minister Narendra Modi further supported these efforts through the announcement of a dedicated US$5 million fund for tourism cooperation. In October 2025, ASEAN and India adopted the *ASEAN-India Joint Leaders' Statement on Sustainable Tourism*, highlighting their shared commitment to promoting sustainable and resilient tourism development while strengthening people-to-people connectivity across the region (ASEAN, 2026a).

4.4.3. Emerging Areas: Digital, Technology, Climate, and Food Security

One of the most significant developments since the establishment of the CSP has been the expansion of ASEAN-India cooperation into emerging sectors that are increasingly important for sustainable development and regional resilience. In 2024, ASEAN and India adopted the *Joint Statement on Advancing Digital Transformation* and launched the *ASEAN-India Fund for Digital Future (AIFDF)* to support cooperation in digital public infrastructure (DPI), financial technology, cybersecurity, artificial intelligence (AI), capacity building, knowledge sharing, and sustainable digital investment. Both sides have also explored collaborative initiatives in the internet of things (IoT), telecommunications security management, and the application of information and communication technologies (ICT) in areas such as digital health, reflecting their shared interest in promoting an inclusive and secure digital ecosystem.

Cooperation in science, technology, and innovation has likewise expanded significantly. The ASEAN-India Science and Technology Development Fund (AISTDF), strengthened by an additional Indian contribution of US$ 5 million in 2022, has supported a wide range of initiatives aimed at enhancing research collaboration, technological innovation, and human resource development. Key programmes include the ASEAN-India Collaborative Research and Development Scheme, the ASEAN-India Research Training Fellowship, the ASEAN-India Grassroots Innovation Forum, the ASEAN-India Startup Festival, the ASEAN-India Scale Hub, and the ASEAN-India Space Programme. Cooperation has also extended to research fellowships, innovation networks, startup ecosystems, women scientists' initiatives, and space-related activities, contributing to the development of innovation-driven economies across the region.

Climate change, sustainable agriculture, food security, and disaster resilience have emerged as additional priority areas under the CSP. Through initiatives such as the ASEAN-India Green Fund, agricultural cooperation programmes, climate-resilient farming projects, and the ASEAN-India Millet Festival, both sides have sought to address common challenges arising from climate change, environmental degradation, and food insecurity. These initiatives reflect a growing recognition that sustainable development, environmental resilience, and food security are integral components of regional stability and long-term prosperity.

4.4.4. Socio-Cultural Cooperation

Socio-cultural cooperation has remained an important pillar of the ASEAN-India Comprehensive Strategic Partnership, encompassing human resource development, education, cultural exchanges, public health, biodiversity conservation, climate change adaptation, and disaster management. India has continued to support ASEAN community-building efforts through its active contribution to the implementation of the Initiative for ASEAN

Integration (IAI) Work Plans, particularly in the areas of capacity building and human resource development.

People-to-People connectivity has been further strengthened through a broad range of educational, cultural, youth, and professional exchange programmes. Key initiatives include the ASEAN-India Students Exchange Programme, Delhi Dialogue, ASEAN-India Media Exchange Programme, ASEAN-India Young Farmers Exchange Programme, ASEAN-India Youth Summit, ASEAN-India Music Festival, and the ASEAN-India Network of Think Tanks (AINTT). These programmes have contributed to fostering mutual understanding, strengthening societal linkages, and promoting greater awareness of shared interests and cultural affinities between ASEAN and India. Recent activities included the ASEAN-India Music Festival held in New Delhi in 2024, the 8th ASEAN-India Network of Think Tanks Roundtable in Singapore in 2024, and the 5th ASEAN-India Youth Summit in Goa in 2025 (ASEAN, 2026a).

The intellectual dimension of the partnership has also continued to expand through policy dialogues, academic exchanges, and think-tank cooperation. In particular, the AINTT has served as an important platform for generating policy recommendations and facilitating dialogue on regional and global issues relevant to ASEAN-India relations.

Health cooperation has emerged as another growing area of collaboration in the post-pandemic period. ASEAN and India have strengthened cooperation in traditional medicine, cancer research, and public health resilience (ASEAN, October 2025). Notable initiatives include the ASEAN-India Conference on Traditional Medicine held in New Delhi in 2023, which explored the role of traditional medicine in mitigating the impacts of COVID-19, as well as collaboration under the National Cancer Grid Vishwam Global Cancer Project. India has also continued to facilitate ASEAN participation in the annual National Cancer Grid meetings, contributing to knowledge sharing and capacity building in cancer prevention, treatment, and research (ASEAN, 2026a).

4.5. Limitations and Challenges

Despite these significant achievements, the ASEAN-India CSP continues to face several structural and operational challenges. First, economic cooperation has yet to match the strategic ambitions of the partnership. Although bilateral trade exceeded US$ 106 billion in 2024, economic exchanges remain modest relative to the size and growth potential of the ASEAN and Indian economies. Investment ties are particularly underdeveloped. Indian FDI inflows into ASEAN declined from US$ 5.09 billion in 2023 to US$ 3.31 billion in 2024 (ASEAN, 2025a), while India accounted for only 1.41 per cent of ASEAN's total inward FDI in 2024 (ASEAN, 2026a). In addition, ASEAN-India investment flows remain heavily concentrated in Singapore, indicating limited economic penetration across the broader Southeast Asian region (MEA, 2025). These trends highlight the continued gap between the strategic ambitions of the partnership and its actual economic footprint in Southeast Asia.

Second, connectivity remains one of the weakest links in ASEAN-India cooperation. While both sides have consistently identified connectivity as a strategic priority, progress in major infrastructure projects has been slower than expected. The India-Myanmar-Thailand Trilateral Highway, often regarded as the flagship project of ASEAN-India connectivity cooperation, has faced repeated delays due to technical, financial, political, and security challenges, particularly in Myanmar. These obstacles have limited progress toward deeper physical integration, cross-border trade facilitation, and regional supply-chain connectivity.

Third, the increasingly uncertain global environment presents additional challenges for partnership. Intensifying US-China strategic rivalry, geopolitical polarization, the conflicts in Ukraine and the Middle East, disruptions to global energy and maritime trade routes, economic protectionism, and growing pressures on multilateral institutions have all contributed to a more complex strategic landscape. Although ASEAN and India share a commitment to multipolarity, strategic autonomy, and rules-based

multilateralism, differences in national priorities, threat perceptions, and external relationships may at times constrain deeper strategic coordination on sensitive regional and global issues.

Finally, the growing prominence of non-traditional security challenges requires stronger institutional mechanisms and greater resource commitments than currently exist. Issues such as pandemics, climate change, cybersecurity threats, food insecurity, disaster risks, and supply-chain disruptions increasingly transcend national boundaries and demand coordinated regional responses. While ASEAN and India have expanded cooperation in many of these areas, existing initiatives remain fragmented and often lack sufficient funding, institutional capacity, and implementation mechanisms to generate transformative outcomes.

Overall, the ASEAN-India CSP has made substantial progress since its establishment in 2022 and has become an increasingly important framework for managing contemporary global uncertainties. Nevertheless, a persistent gap remains between the strategic convergence of ASEAN and India and the practical implementation of their cooperation agenda. Bridging this gap will require deeper economic integration, accelerated connectivity projects, greater investment in digital and technological cooperation, and stronger coordination in addressing both traditional and non-traditional security challenges. The effectiveness of the CSP in the coming years will ultimately be measured not only by shared strategic visions, but also by the ability of both sides to translate those visions into concrete and mutually beneficial outcomes.

4.6. Strategic Priorities of the ASEAN-India Comprehensive Strategic Partnership in Coming Years

The future trajectory of the ASEAN-India CSP will be determined not only by the achievements attained since its establishment in 2022 but, more importantly, by the ability of both sides to respond to an increasingly uncertain international environment. As discussed in the previous sections, contemporary global uncertainty is characterised by the simultaneous interaction of structural and functional challenges, including power transition, intensifying great-power competition, economic fragmentation, technological disruption, climate insecurity, and the erosion of multilateral governance mechanisms. These developments are reshaping strategic calculations across the Indo-Pacific and creating new incentives for ASEAN and India to deepen cooperation. In this context, the ASEAN-India CSP is likely to evolve beyond a conventional dialogue partnership into a strategic mechanism for managing uncertainty, strengthening resilience, and contributing to a stable and inclusive regional order. The priorities identified in the 2022 Joint Statement on the ASEAN-India Comprehensive Strategic Partnership and further elaborated in the ASEAN-India Plan of Action (POA) 2026-2030 provide important indications of the direction that this evolution is likely to take (ASEAN, 2022a; ASEAN, 2025b).

4.6.1. Preserving ASEAN Centrality and Strengthening Strategic Autonomy

One of the most important priorities of the ASEAN-India CSP in the coming decade will be the preservation of ASEAN centrality and the strengthening of strategic autonomy in an increasingly contested Indo-Pacific. The intensifying strategic rivalry between the United States and China has transformed Southeast Asia into a critical arena of geopolitical competition. Simultaneously, the emergence of a more multipolar international system, marked by the growing influence of India, Japan, the European Union, and other middle powers, has made regional governance both more complex and more uncertain. In such an environment, ASEAN faces the challenge of maintaining its relevance as the principal convenor of regional institutions, while India seeks to expand its regional role without becoming constrained by alliance politics or bloc confrontation.

Against this backdrop, ASEAN and India share a strong interest in preserving an open, inclusive, and rules-based regional architecture. The CSP, therefore, serves not merely as a bilateral framework but as a strategic instrument through which both sides can reinforce ASEAN-led institutions and mitigate the destabilising effects of geopolitical polarisation. The ASEAN-India POA 2026-2030 places considerable emphasis on strengthening cooperation through mechanisms such as the EAS, ARF, ADMM+, and EAMF, all of which remain central to ASEAN's institutional leadership in the Indo-Pacific.

Over the next five to ten years, ASEAN-India cooperation is likely to evolve from symbolic support for ASEAN centrality towards more substantive coordination on regional governance, crisis management, preventive diplomacy, and multilateral reform. Such cooperation would reinforce ASEAN's role as the primary driver of regional dialogue while providing India with an institutional platform through which to advance its Act East Policy. More broadly, it would contribute to the emergence of a more balanced Indo-Pacific order in which regional institutions, rather than great-power rivalries alone, continue to shape the rules and norms of interstate interaction.

4.6.2. Transforming Maritime Cooperation into Comprehensive Maritime Governance

Maritime cooperation is likely to become the most strategically significant pillar of the ASEAN-India CSP. This reflects the reality that the Indo-Pacific is fundamentally a maritime region whose economic prosperity, strategic stability, and geopolitical dynamics are deeply dependent on the security and governance of the seas. The growing salience of maritime issues stems not only from traditional security concerns, such as territorial disputes and freedom of navigation, but also from the increasing importance of non-traditional challenges, including illegal fishing, maritime crime, environmental degradation, and climate-related risks.

The ASEAN-India Joint Statement on Maritime Cooperation adopted in 2023 and the designation of 2026 as the ASEAN-India Year of Maritime Cooperation signal a growing recognition that maritime affairs will remain central to the future of the partnership (MEA, 2024; Modi, 2025). In the coming decade, cooperation is likely to broaden considerably from traditional naval and security interactions to encompass a more comprehensive approach to maritime governance. This may include collaboration on maritime domain awareness, search and rescue operations, humanitarian assistance and disaster relief (HADR), blue economy initiatives, sustainable fisheries management, marine environmental protection, and maritime cybersecurity. The POA explicitly identifies many of these areas as priorities for future cooperation (ASEAN, 2025b).

The strategic significance of this evolution extends beyond functional cooperation. By strengthening maritime governance, ASEAN and India can contribute to the implementation of the ASEAN Outlook on the Indo-Pacific (AOIP) and facilitate greater convergence with India's Indo-Pacific Oceans Initiative (IPOI). Such convergence would reinforce ASEAN centrality by ensuring that Indo-Pacific cooperation remains inclusive and non-exclusive while simultaneously advancing India's objective of becoming a leading stakeholder in regional maritime affairs. In the broader Indo-Pacific context, enhanced maritime cooperation would support a rules-based maritime order anchored in the principles of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and contribute to regional stability amidst increasing strategic competition (MEA, 2024).

4.6.3. Building Economic Resilience and Supply Chain Security

Economic cooperation will remain an essential pillar of the ASEAN-India CSP, but its focus is likely to shift significantly from trade expansion towards

economic resilience. The disruptions generated by the COVID-19 pandemic, geopolitical conflicts, sanctions regimes, protectionist measures, and supply-chain fragmentation have exposed the vulnerabilities of the contemporary global economy. Economic interdependence, once regarded primarily as a source of prosperity, is increasingly viewed through the lens of strategic risk and national security.

For both ASEAN and India, enhancing resilience against external shocks has, therefore, become a strategic imperative. This explains why the review and upgrading of the ASEAN-India Trade in Goods Agreement (AITIGA) has become a central priority. Both sides have repeatedly emphasised the need to make the agreement more effective, user-friendly, and responsive to changing global economic conditions (ASEAN, 2025b). Yet the significance of economic cooperation extends far beyond trade liberalisation.

In the coming years, ASEAN and India are likely to prioritise the development of secure and diversified supply chains in critical sectors such as healthcare, pharmaceuticals, advanced manufacturing, critical minerals, food security, and emerging technologies. The POA's emphasis on promoting 'diverse, secure, transparent and resilient supply chains' reflects a broader shift in strategic thinking that increasingly links economic resilience with national and regional security (ASEAN, 2025b).

This evolution has important implications for regional order. Greater ASEAN-India economic integration would strengthen ASEAN's position as a central node in Indo-Pacific production networks while enabling India to deepen its economic engagement with Southeast Asia beyond traditional market-access considerations. More broadly, it would contribute to the development of a more diversified and resilient regional economic architecture capable of mitigating the risks associated with excessive dependence on any single market or supply source.

4.6.4. Advancing Connectivity as Strategic Infrastructure

Connectivity has long occupied a central place in ASEAN-India relations, yet its strategic significance is likely to increase considerably in the coming decade. In an era of heightened geopolitical competition, infrastructure and connectivity are no longer viewed solely as instruments of economic development; they have become important sources of strategic influence and regional integration.

The continued prioritisation of the India-Myanmar-Thailand Trilateral Highway and its proposed extension to Cambodia, Lao PDR, and Vietnam reflects this understanding (ASEAN, 2025b). Successful completion of this project would create one of the most important physical links between South Asia and Southeast Asia, facilitating trade, investment, tourism, and people-to-people exchanges.

However, the future connectivity agenda is likely to extend well beyond transport infrastructure. Increasingly, ASEAN and India are expected to focus on digital connectivity, logistics integration, regulatory harmonisation, and smart infrastructure. The "Connecting the Connectivities" approach, which seeks to align ASEAN's connectivity agenda with India's Act East Policy, offers a useful framework for such efforts (ASEAN, 2026b).

By strengthening connectivity across multiple dimensions, ASEAN and India can reduce the fragmenting effects of geopolitical competition while enhancing regional integration. For ASEAN, this reinforces its role as a hub linking the major economies of the Indo-Pacific. For India, it supports the transformation of the Act East Policy from a primarily diplomatic initiative into a comprehensive strategy of economic and strategic engagement. At the regional level, enhanced connectivity contributes to a more integrated and interconnected Indo-Pacific order.

4.6.5. Advancing Digital Transformation and Technological Security

Technological disruption has emerged as one of the defining characteristics of contemporary global uncertainty. Competition over digital infrastructure, artificial intelligence, cybersecurity, data governance, and emerging technologies increasingly shapes economic competitiveness and national power. As a result, technology cooperation is likely to become one of the most transformative dimensions of the ASEAN-India CSP.

Both ASEAN and India recognise that digital transformation is essential for sustaining long-term economic growth and competitiveness. At the same time, they face the challenge of reducing technological vulnerabilities and avoiding excessive dependence on external technological ecosystems. Consequently, cooperation is expected to expand in areas such as digital public infrastructure, digital payments, financial technology, cybersecurity, artificial intelligence governance, smart cities, and digital skills development (ASEAN, 2025b; ASEAN, 2026b).

India's internationally recognised achievements in digital public infrastructure provide particularly promising opportunities for collaboration. Over the next decade, India's experience in digital identity systems, digital payment platforms, and e-governance could significantly support ASEAN's digital transformation agenda.

The broader strategic implications are considerable. Digital cooperation strengthens ASEAN's efforts to build a more integrated regional digital economy while providing India with an additional avenue for advancing its Act East Policy. More importantly, it contributes to the emergence of a more open, inclusive, and resilient digital order in the Indo-Pacific at a time when technological competition is becoming increasingly intertwined with geopolitical rivalry.

4.6.6. Accelerating Green Transition and Climate Resilience

Climate change represents perhaps the most universal and long-term form of uncertainty confronting both ASEAN and India. Rising sea levels, extreme weather events, biodiversity loss, food insecurity, and energy disruptions increasingly threaten economic development and social stability across the region. Consequently, climate change is no longer viewed merely as an environmental challenge but as a strategic issue with profound implications for security and development.

The ASEAN-India POA 2026-2030 reflects this growing recognition through its emphasis on renewable energy, green financing, hydrogen technologies, bioenergy, sustainable agriculture, and regional energy connectivity (ASEAN, 2025b). Future cooperation is likely to focus on accelerating the energy transition while simultaneously enhancing climate adaptation and resilience.

Particularly significant is the growing emphasis on the ASEAN Power Grid and broader regional energy integration initiatives. These efforts have the potential to strengthen energy security, facilitate the deployment of renewable energy, and support regional decarbonisation objectives. At the same time, cooperation on climate-smart agriculture and resilient infrastructure could help both sides address the growing risks associated with climate-related disruptions.

From a strategic perspective, climate cooperation expands the scope of ASEAN centrality into the domain of sustainable development while providing India with a constructive and non-contentious avenue for regional engagement. More broadly, it contributes to the development of a more sustainable Indo-Pacific order capable of addressing one of the most significant long-term challenges facing the international community.

4.6.7. Strengthening Human Security and Societal Connectivity

Finally, the future sustainability of the ASEAN-India CSP will depend on the extent to which it can strengthen people-to-people linkages and address emerging human security challenges. The COVID-19 pandemic demonstrated that non-traditional threats could have consequences comparable to, or even greater than, traditional geopolitical conflicts. Public health crises, natural disasters, demographic transitions, and social vulnerabilities increasingly shape regional stability and development.

In response, ASEAN and India are likely to deepen cooperation in public health, higher education, scientific research, disaster management, tourism, youth exchanges, and cultural preservation. Existing initiatives such as the ASEAN-India Network of Universities and various scholarship and cultural programmes provide important foundations for this process. Furthermore, establishing an ASEAN-India public health framework could be considered to harness the complementary advantages of India and ASEAN nations in traditional medicine.

The significance of these initiatives extends beyond their immediate practical benefits. Stronger societal connectivity reinforces the social foundations of ASEAN-India relations and helps cultivate a shared sense of regional community. In strategic terms, people-centred cooperation strengthens ASEAN Community-building efforts, reinforces the civilisational dimension of India's Act East Policy, and provides the social legitimacy necessary for sustaining long-term regional cooperation (ASEAN, 2022a).

In an increasingly uncertain world, human security and societal resilience are likely to become indispensable complements to traditional forms of political, economic, and security cooperation. Together, they will help ensure that the ASEAN-India CSP remains not only strategically relevant but also socially sustainable in the decades ahead.

4.7. Conclusion

The ASEAN-India CSP has emerged as one of the most significant strategic relationships in the Indo-Pacific at a time when the international system is undergoing profound transformation. The contemporary global environment is increasingly characterised by overlapping uncertainties arising from power transition, intensifying great-power competition, economic fragmentation, technological disruption, climate change, pandemics, and the growing limitations of multilateral governance mechanisms. These developments have fundamentally reshaped the strategic calculations of both ASEAN and India, creating new incentives for cooperation while simultaneously exposing vulnerabilities that neither side can effectively address alone.

Within this context, the strategic convergence between ASEAN centrality and India's Act East Policy has provided a strong foundation for the development of the CSP. ASEAN's commitment to maintaining an open, inclusive, and ASEAN-led regional architecture complements India's emphasis on strategic autonomy, multi-alignment, and support for a multipolar world order. The establishment of the CSP in 2022 therefore represented more than a symbolic elevation of relations; it reflected a shared recognition that deeper cooperation is necessary to navigate growing uncertainties and preserve stability in the Indo-Pacific.

Since 2022, ASEAN and India have achieved notable progress across multiple domains. Political-security cooperation has expanded through ASEAN-led mechanisms and growing coordination on maritime security, counter-terrorism, cybersecurity, and regional governance. Economic relations have continued to deepen, while cooperation in connectivity, digital transformation, science and technology, climate resilience, food security, public health, and people-to-people exchanges have broadened considerably. The adoption of the ASEAN-India Joint Statement on Maritime Cooperation, the strengthening of AOIP-Act East Policy synergies,

and the ASEAN-India Plan of Action 2026-2030 demonstrate an increasingly comprehensive and forward-looking partnership.

Nevertheless, important challenges remain. Trade and investment relations continue to underperform relative to the size and potential of the two economies. Key connectivity projects, particularly the India-Myanmar-Thailand Trilateral Highway, face persistent implementation challenges. Geopolitical tensions, divergent threat perceptions, and the increasingly complex strategic environment may also constrain deeper coordination. Furthermore, emerging non-traditional security challenges including climate change, cybersecurity threats, pandemics, and supply-chain disruptions, require stronger institutional mechanisms and greater resource commitments than currently exist.

Looking ahead, the future relevance of the ASEAN-India CSP will depend on its capacity to move beyond traditional forms of cooperation and evolve into a more resilient and adaptive strategic partnership. The analysis in this chapter suggests that seven priorities are likely to shape the next phase of cooperation: preserving ASEAN centrality and strategic autonomy; strengthening maritime governance; building resilient supply chains and economic security; enhancing physical and digital connectivity; advancing digital transformation and technological cooperation; accelerating green transition and climate resilience; and deepening human security and societal connectivity.

Taken together, these priorities indicate that the ASEAN-India CSP is increasingly becoming more than a bilateral or regional partnership. It is evolving into an important mechanism through which ASEAN and India seek to manage uncertainty, strengthen resilience, and contribute to the construction of a stable, inclusive, and rules-based Indo-Pacific order. In an era marked by profound global uncertainty, the success of the ASEAN-India CSP will not be measured solely by trade volumes, investment flows, or institutional meetings, but by its ability to provide strategic stability, foster regional resilience, and generate practical solutions to the complex challenges confronting the Indo-Pacific region in the decades ahead.

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Part II: Dynamics of Economic Relations

5 Dynamics of India's Development Cooperation Partnership with ASEAN

Sushil Kumar and Riddhi Lakhiani

5.I. Introduction

India and ASEAN[1] share deep historical and civilisational ties rooted in centuries of maritime trade, cultural exchange, and movement of people across the Bay of Bengal. India's formal engagement with the ASEAN has evolved significantly since the establishment of dialogue relations in 1992 (RIS, 2019). Beginning as a Sectoral Dialogue Partnership and subsequently upgraded to a full dialogue partnership in 1995, the relationship gradually expanded in scope, with summit-level interactions institutionalised in 2002 (MEA, 2018). Over time, this engagement has matured through important institutional milestones. India–ASEAN relations were elevated to a strategic partnership in 2012 and, more recently, to a Comprehensive Strategic Partnership (CSP) in 2022, which was celebrated as 'ASEAN-India Friendship Year', completing three decades of cooperation (MEA, 2025). The economic relationship has expanded alongside political engagement. Since 1992, bilateral trade has surpassed US$ 131 billion, while cumulative investments have exceeded US$ 173 billion in 2025[2].

In the context of development cooperation, India has extended development assistance to ASEAN member countries through concessional finance, capacity building, grants, and technology transfer. For example, since 2003–04, India has extended US$ 1.22 billion in concessional finance. In terms of capacity building, India has offered 1,260 slots to the members of ASEAN in 2026[3]. The important sectors of India-ASEAN development cooperation include connectivity, energy, agriculture, infrastructure, manufacturing and telecommunications. This reflects the deepening economic ties and expanding cooperation between India and ASEAN (RIS, 2025).

While the early phase of India-ASEAN relations was largely centred on trade and investment and economic engagement, the partnership has progressively broadened into a multidimensional framework with development cooperation emerging as a central pillar. A key turning point in this evolution was the transition from the Look East Policy to the Act East Policy in 2014[4], which signalled a more action-oriented and implementation-focused approach toward Southeast Asia[5]. At the 22nd ASEAN-India Summit held on 26 October 2025, the Indian Prime Minister described ASEAN as the "main pillar of India's Act East Policy" and reaffirmed India's support for ASEAN unity, centrality, and its outlook on the Indo-Pacific. He also noted that the partnership is emerging as a "powerful foundation for global stability and growth"[6].

The dynamics of ASEAN-India relations can be understood from the fact that India and ASEAN together account for nearly 25 per cent of the world's

population. ASEAN accounts for 16.6 per cent of India's global trade and contributed around US$ 156 billion in cumulative FDI to India[7]. In terms of connectivity and people-to-people exchanges, around 5 million Indian tourists visited ASEAN member states in 2025–26[8], and India is granting e-Tourist Visas to ASEAN member countries. Under the ASEAN-India CSP, India is pursuing cooperation in the areas of digital infrastructure and food security. India's Unified Payments Interface (UPI) is already linked with Singapore's PayNow, and similar payment linkages are being developed with Malaysia, the Philippines, and Cambodia. India is also supporting initiatives such as the ASEAN power grid through training and technical cooperation. Furthermore, India has provided over 15,590 ITEC training slots to ASEAN member countries and has implemented nearly 200 QIPs in the Mekong region countries (MEA, 2026). India's engagement with ASEAN is also built upon the Indo-Pacific Oceans Initiative (IPOI), which seeks to strengthen regional cooperation and enhance both physical and digital connectivity. To support cooperation activities between India and ASEAN, India has established four dedicated funds: (i) the ASEAN-India Cooperation Fund (AIF); (ii) the ASEAN-India Green Fund (AIGF); (iii) the ASEAN-India Science and Technology Development Fund (AISTDF); and (iv) the ASEAN-India Fund for Digital Future (AIFDF)[9].

This chapter discusses the scope, sectors, modalities, and impact of India's development cooperation with ASEAN, and traces evolving priorities since the adoption of the Act East Policy. Section 2 analyses the Plan of Action to Implement the ASEAN-India CSP (2026–2030) and its potential for development cooperation. Section 3 examines the flow of development assistance to ASEAN from Development Assistance Committee (DAC) member countries, providing an overview of aid trends and major development partners. Section 4 analyses India's development assistance to ASEAN under the framework of the Global Development Compact, including concessional finance, capacity building, grant assistance, QIPs, and sub-regional cooperation through the Mekong-Ganga Cooperation (MGC). Section 5 examines the potential of triangular cooperation. Section 6 analyses the role of global and regional initiatives and identifies emerging areas for ASEAN-India development cooperation. The final section presents the conclusion and the way forward for deepening the ASEAN-India development cooperation partnership.

5.2. Plan of Action (PoA) to Implement the ASEAN–India Comprehensive Strategic Partnership (2026–2030)

The preceding section showed that ASEAN-India relations have evolved from a sectoral dialogue partnership into a comprehensive and multi-dimensional engagement covering political, economic, strategic, developmental and people-to-people cooperation. The fifth ASEAN–India PoA (2026–2030) provides the guiding framework for cooperation over the next five years. It seeks to further strengthen ASEAN-India cooperation in areas of mutual interest for the benefit of the people of ASEAN and India, while also contributing to peace, stability, prosperity and sustainability in the region. The plan lays out priorities and measures to deepen political-security, economic and socio-cultural ties, and to realise the full potential of the ASEAN-India CSP.

The PoA reaffirms India's support for ASEAN Centrality and contributes to the implementation of *ASEAN 2045: Our Shared Future*. It identifies a broad agenda of cooperation covering trade and investment, finance, energy, transport, food, agriculture and forestry, blue economy, information and communications technology, tourism, science, technology and innovation (STI), digital transformation, artificial intelligence, disaster management and emergency response, environment, climate and biodiversity, public health, education, youth, culture and people-to-people exchanges. It also emphasises connectivity and continued support for ASEAN integration and narrowing the development gap, particularly in the CLMV countries, through human resource development, rural household electrification programmes, information technology, curriculum

development, IT teacher training, and increased fellowships and scholarships. Implementation of the PoA may be supported through the governments of ASEAN member states and India, including the ASEAN-India Fund, ASEAN-India Green Fund, ASEAN-India Science and Technology Development Fund, and ASEAN-India Fund for Digital Future (see Box 5.1).

5.3. Trends in Development Aid to ASEAN Countries

As Section 5.2 analyzed the action plan for the ASEAN-India Development Cooperation Partnership, it is equally important to examine the flow of development aid to ASEAN member states from advanced economies. This analysis becomes particularly significant as many members of the OECD-DAC have recently announced reductions in their aid budgets for the Global South. Analyzing aid flows to ASEAN member states provides insights into two important aspects. First, it helps assess the implications of declining aid and the extent to which ASEAN member states may need to mobilise alternative resources and explore other development financing options. Second, how assistance is distributed across ASEAN member states.

Box 5.1: Key Areas of Development Cooperation under the ASEAN-India Plan of Action (2026–2030)

2.2.1. Strengthen cooperation on the development of sustainable financial infrastructure and capital markets to create strong and robust economic and financial fundamentals for sustainable and balanced growth.

2.1.7. Promote greater financial inclusion through sharing of knowledge and best practices in areas of regulation, financial technology, and digitalisation.

2.3.2. Continue to utilise the ASEAN-India Green Fund and ASEAN-India Science & Technology Development Fund to launch new projects on the green economy, including clean and renewable energy, regional power transmission, and other areas of interest.

2.10.2. Share knowledge, experiences and best practices in the development, implementation and governance of Digital Public Infrastructure (DPI), and explore ways to leverage DPI, including through India Stack, for regional development and integration across sectors through the ASEAN–India Fund for Digital Future (AIFDF).

3.1.1. Support the work of the ASEAN Committee on Disaster Management (ACDM) to enhance the efficiency and effectiveness of ASEAN's disaster management and emergency response instruments, including cooperation on ASEAN's efforts in the provision of Humanitarian Assistance and Disaster Relief (HADR) through ASEAN-led mechanisms.

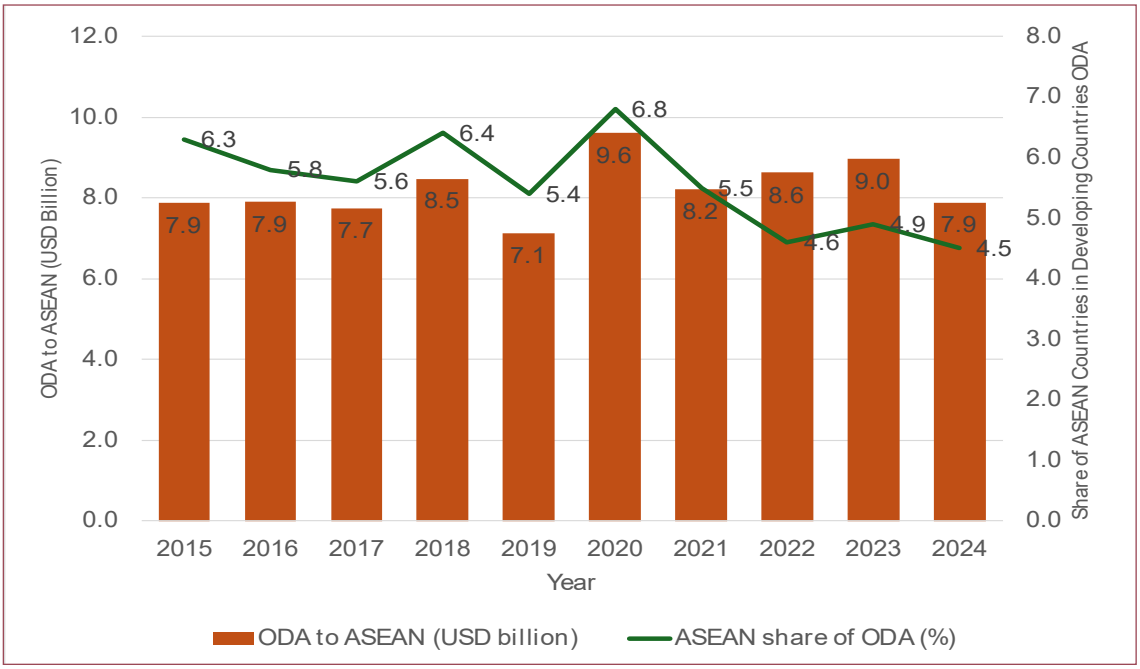
3.1.4. Encourage full implementation of the Memorandum of Intent between the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) and the National Disaster Management Authority of India (NDMA) in all areas of collaboration, including sharing of knowledge and best practices, capacity building, technical assistance, and support for the role of the AHA Centre during large-scale disaster situations.

3.4.3. Continue to support ASEAN capacity building and the digital transformation of education, including Technical and Vocational Education and Training (TVET) aligned with industry needs, through Indian scholarship programmes, short-term courses and training, exchange of teachers, lecturers, skills trainers, instructors and researchers, joint research initiatives, and university and think tank partnerships, in collaboration with the ASEAN University Network (AUN) and other regional higher education networks.

3.4.4. Continue fellowships for ASEAN students and researchers under various programmes, including scholarship programmes offered by Nalanda University, the ASEAN–India Network of Universities (AINU), and ASEAN–India Collaborative Research and Development (R&D).

Source: ASEAN Secretariat, Jakarta.

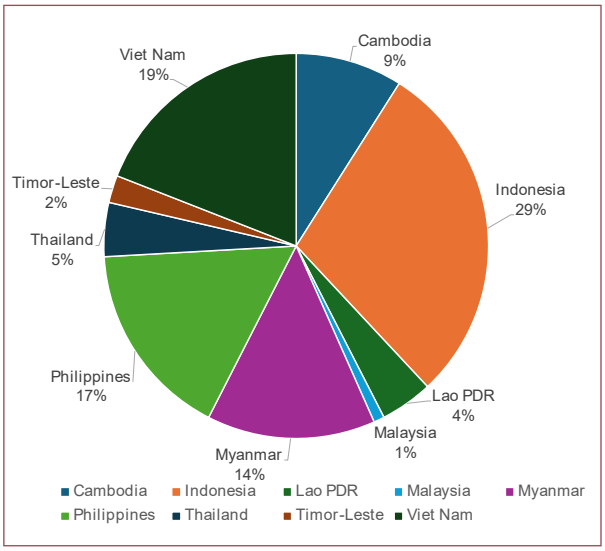
Figure 5.1: ODA to ASEAN and ASEAN's Share in Total ODA to Developing Countries, 2015-2024



Source: Authors' calculations based on OECD DAC data.

As shown in Figure 5.1, Official Development Assistance (ODA) flows from DAC member countries to ASEAN increased from US$ 7.9 billion in 2015 to a peak of US$ 9.6 billion in 2020 before declining to US$ 7.9 billion in 2024. ASEAN's share in total ODA to developing countries decreased from 6.3 per cent in 2015 to 4.5 per cent in 2024, a declining relative importance of the region in overall DAC aid allocations.

Figure 5.2: Distribution of DAC ODA to ASEAN Countries, 2015-2024



Note: Other ASEAN recipients include Cambodia, Lao PDR, Malaysia, Thailand and Timor Leste

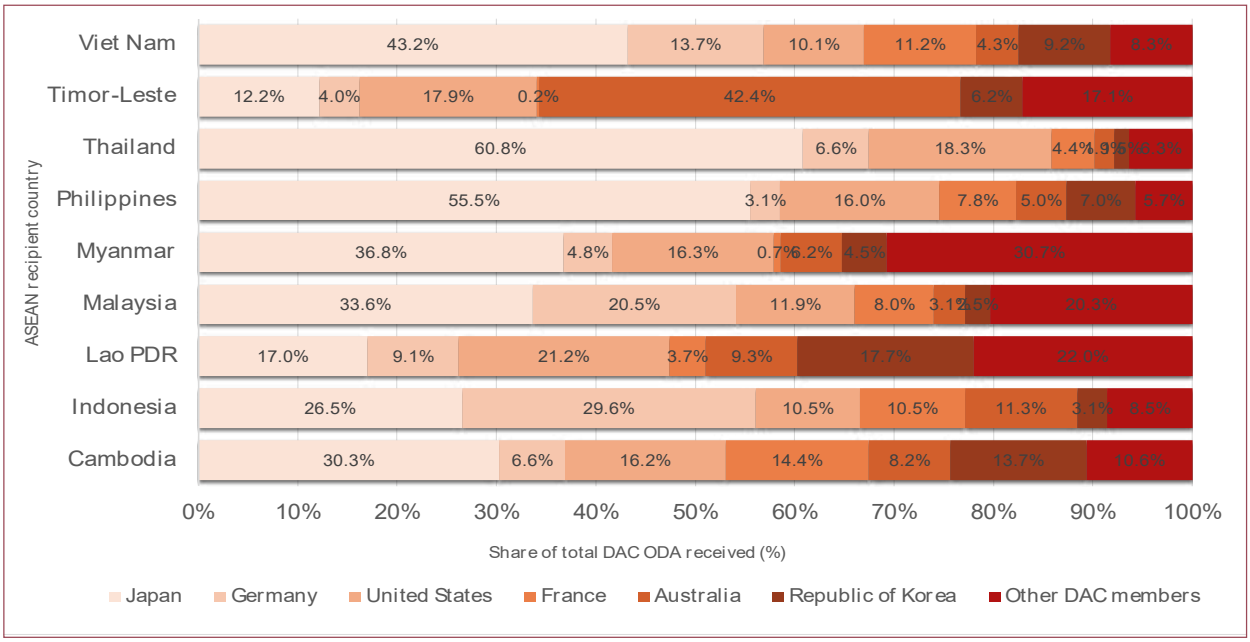
Source: Authors' calculations based on OECD DAC data

As Figure 5.2 shows, Indonesia, Vietnam, the Philippines, and Myanmar together accounted for nearly 79 per cent of the total ODA provided by the DAC members to ASEAN member states during 2015–2024. In absolute terms, over the ten-year period, Indonesia received the largest share, amounting to US$ 23.9 billion, followed by Vietnam US$ 15.7 billion, the Philippines US$ 13.7 billion, and Myanmar US$ 11.7 billion.

Japan was the largest DAC donor to ASEAN, providing US$ 30.6 billion between 2015 and 2024, accounting for around 37 per cent of total DAC assistance to the region. Germany (US$ 11.5 billion) and the United States (US$ 11.3 billion) were the second and third largest donors, respectively. France (US$ 6.9 billion), Australia (US$ 6.6 billion), and Korea (US$ 5.5 billion) also emerged as major development partners. Japan's assistance was concentrated in the Philippines, Vietnam, Indonesia, and Myanmar. Germany's support was primarily directed towards Indonesia

Figure 5.3: Official Development Assistance to ASEAN Member Countries by DAC Member Countries between 2015-2024)

(US$ million)



Source: Authors' calculations based on OECD DAC data

and Vietnam, while the United States focused on Indonesia, the Philippines, Myanmar, and Cambodia. Together, the six largest donors - Japan, Germany, the United States, France, Australia, and Republic of Korea - provided more than four-fifths of total DAC assistance to ASEAN during the period (Figure 5.3).

5.4. Dynamics of India's Development Cooperation Partnership with ASEAN

After having analysed the action plan for strengthening the ASEAN-India partnership over the next five years and the flow of international aid to the region, it is now important to examine India's development cooperation with ASEAN member states. The purpose of this analysis is to provide a way forward for India's development assistance within the framework of the Global Development Compact (GDC). This section seeks to understand how greater synergy can be created among the various modalities of India's development cooperation to enhance the effectiveness of development partnerships. It also examines how India's capacity-building initiatives contribute to strengthening ASEAN-India relations and how the development of India's Northeastern region under the Act East Policy can further deepen regional cooperation and connectivity. Furthermore, this analysis helps to identify the sectoral dimensions of India's development cooperation partnership with ASEAN member states and highlights areas of mutual interest and collaboration.

5.4.1. Global Development Compact

India's development cooperation journey has always been guided by the philosophy of *Vasudhaiva Kutumbakam* - the world is one family. This belief has consistently shaped India's approach to global partnerships. Whether it is humanitarian assistance, technology sharing or capacity building, India has always stood with fellow nations, especially those in the Global South. On 17 August 2024, during the 3rd Voice of Global South Summit, India proposed a comprehensive and inclusive framework for global development cooperation called the Global Development Compact. It draws from India's own development experiences and is shaped by the priorities set by countries of the Global

South themselves. The GDC is a human-centric, multi-dimensional, and multi-sectoral model of engagement. This Compact is built on five broad, interlinked modalities, which can be adapted based on specific needs (RIS, 2024). These include:

- Capacity building for sustainable growth
- Trade for development
- Technology sharing
- Project-specific concessional finance
- Grants

These pillars do not work in isolation. Instead, they support each other, allowing flexibility and balance in how countries approach their development goals. This time-tested model of Indian development cooperation is grounded in the domestic priorities of partner countries. It is not prescriptive; it is participatory. It is important to mention that finance is important, but it is not enough to achieve sustainable development. Many countries in the Global South face other significant challenges-lack of relevant and adaptable technologies, shortage of well-trained human resources, and limited institutional capacities[10]. The GDC is designed to address these challenges in a holistic and practical manner.

India believes that development must be sensitive to debt burdens, respectful of environmental sustainability, and responsive to the real needs of people. This model is now ready to be scaled up and adopted by other countries to implement meaningful and impactful projects. As part of this commitment, India is initiating a trade promotion activity worth US$ 2.5 million to support countries of the Global South. In addition, India is contributing US$ 1 million to build capacity and provide training in trade policy and trade negotiations for these nations. These initiatives reflect unwavering commitment to support development efforts across regions and sectors[11].

5.4.2. Modalities of India's Development Cooperation with ASEAN Member States

India has been providing development assistance to ASEAN member states since 1947. For instance, India in 1946 provided US$ 1 million loan to Myanmar (erstwhile Burma). It is important to mention that India's development cooperation is demand driven and it is based on need and priorities of the partner countries, without conditionality and respecting national sovereignty and mutual gain. This section analyses India's development assistance to ASEAN member countries under the framework of the GDC.

5.4.2.1 Capacity Building for Sustainable Growth

Capacity Building is one of the most important pillars of ASEAN-India development cooperation. India's flagship programme in this area is the Indian Technical and Economic Cooperation (ITEC) Programme, launched in 1964. ITEC is among the world's longest-running structured capacity-building programmes and remains a central component of India's development partnership policy. The programme is demand-driven, partnership-oriented, and focused on addressing the developmental priorities of partner countries. In recent years, India has considerably expanded its global capacity-building initiatives. During 2025–26, India offered nearly 12,000 ITEC training slots for countries of the Global South and allocated approximately US$ 19.24 million towards capacity-building programmes. To date, more than 225,000 officials from over 160 countries have received training in civilian and defence sectors under the ITEC framework[12].

ASEAN member states have been important beneficiaries of India's capacity-building initiatives. Since 2015, ASEAN member states have utilised nearly 5,700 ITEC slots, while the cumulative number of ITEC slots extended to ASEAN member states stands at 15,590. In 2025-26 alone, 1,259 ITEC slots have been allocated to ASEAN member states.

India's engagement with ASEAN member states through capacity building reflects both bilateral cooperation and broader regional partnership objectives. Cambodia, for instance, has extensively benefited from the ITEC programme, with more than

3,000 Cambodian nationals trained between 1981 and 2025. For the year 2025–26 alone, 300 civilian training slots were allocated to Cambodia (see Table 5.1). Similarly, Thailand has been a long-standing partner in India's capacity-building efforts. India annually offers 90 ITEC slots to Thailand, and during the past decade more than 425 Thai officers have participated in various training programmes in India. In addition, Thailand receives seats under the Colombo Plan Technical Cooperation Scheme, while Thai students have also benefited from scholarships offered by the Indian Council for Cultural Relations (ICCR).[13]

India offers 100 ITEC slots annually to Indonesia and provides 20 ICCR scholarships every year for higher studies in India. Beyond training programmes, India has strengthened academic cooperation through the establishment of ICCR chairs in Indonesian universities including at Universitas Udayana in Bali and the University of North Sumatra in Medan (MEA, 2024). These initiatives promote collaboration in fields such as Sanskrit studies, Ayurveda, and Political Science. India's cooperation with Lao PDR also demonstrates the developmental orientation of its capacity-building programmes. Around 1,500 Lao nationals have been trained under ITEC in various sectors (MEA, 2026). India additionally provides scholarships for undergraduate, postgraduate, and doctoral studies under ICCR and MGC frameworks. Lao PDR diplomats and students have also participated in specialised programmes at institutions such as the Sushma Swaraj Institute of Foreign Service and Nalanda University.

Brunei has similarly benefited through both physical and virtual training programmes. Over the years, 37 Brunei nationals have attended ITEC courses in India, while several officials have participated in e-ITEC programmes in recent years. Myanmar represents one of the most extensive examples of India's institutional capacity-building support in ASEAN. India has conducted specialised training programmes for Myanmar's election officials, judicial officers, police personnel, health professionals, and power-sector experts. More than 1,200 Myanmar police officers have undergone civilian-side training since 2017, while judicial cooperation programmes have trained hundreds of officers at Indian institutions such as the National Judicial Academy. India has also supported human resource development through postgraduate education opportunities, including Master's programmes under ITEC.

More than 1,000 Filipino professionals have attended courses in areas such as renewable energy, environmental management, public health, and Ayurveda. Additionally, Filipino students benefit from India's "Study in India" initiative and doctoral fellowship schemes for ASEAN students (MEA, 2025). India's development partnership with Vietnam has similarly focused on training, education, and human resource development. Every year, around 200 Vietnamese nationals participate in ITEC and ICCR programmes, with India offering 130 civilian ITEC slots and 48 ICCR scholarships annually (MEA, 2022). India also extends training and scholarship opportunities to Timor-Leste, including ITEC slots, ICCR scholarships, and diplomatic training programmes through India's foreign service institutions (see Table 5.1).

Table 5.1: Indian ITEC Slots to ASEAN Member States

Sr. No.	Country	Total slots till date	Slots 2025-26
1	Brunei Darussalam	71	6
2	Cambodia	3000	300
3	Indonesia	1001	100
4	Lao PDR	1500	22
5	Malaysia	1067	40
6	Myanmar	5571	500
7	Philippines	1000	75
8	Thailand	370	70
9	Timor-Leste	39	16
10	Vietnam	1971	130
	Total	**15590**	**1259**

Source: Ministry of External Affairs (MEA), *Annual Reports*, various years.

Beyond bilateral cooperation, India has institutionalised several ASEAN-focused educational and research initiatives under the ASEAN-India cooperation framework (see Box 5.2). Scholarships are offered to ASEAN students at Nalanda University for Masters, PhD, and Postgraduate Diploma programmes, funded through the ASEAN–India Fund. India currently provides 80 Masters and 10 PhD scholarships annually under this initiative. It is also important to note that since 2015, more than 300 ASEAN students have been awarded scholarships to pursue higher education at Nalanda University. In addition to ITEC and ICCR programmes, India supports ASEAN member states through a wide range of scholarship and fellowship initiatives, including the ASEAN-India Network of Universities (AINU), ASEAN-India Collaborative Research and Development Programme (AICRD), ASEAN-India Research and Training Fellowships (AIRTF), Quad STEM Fellowship, Quad Infrastructure Fellowship, Mekong-Ganga Cooperation Scholarship Scheme, BIMSTEC Scholarship, and the ASEAN-India Fellowship for Higher Education in Agriculture and Allied Sciences (ASEAN Secretariat, 2024).

Box 5.2: Training of Trainers on Computer Networking Technology

India's capacity-building cooperation with Southeast Asia increasingly includes specialised technical programmes designed to create a multiplier effect through the Training of Trainers model. An example is the first Early Harvest Project under the India–The Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) Development Partnership, titled "Training of Trainers on Computer Networking Technology," conducted by the Centre for Development of Advanced Computing (C-DAC), New Delhi, from 23 September to 4 October 2024. The programme trained participants from Indonesia, Malaysia and Thailand in computer networking technologies while strengthening their ability to further disseminate technical knowledge within their own institutions and countries. The programme focused on enhancing technical skills and capacity building among participants from IMT-GT member countries, highlighting India's contribution to regional development cooperation through knowledge sharing and human resource development (MEA, 2025).

5.4.2.2. Project-Specific Concessional Finance

As discussed in Section 4, concessional finance plays an important role in supporting partner countries for their development activities. Recent data indicates that India has extended more than 300 Lines of Credit (LoCs) worth approximately US$ 32 billion to 68 countries, including those in the ASEAN region. The LoCs are governed by the Indian Development and Economic Assistance Scheme (IDEAS) of the Department of Economic Affairs, Ministry of Finance, Government of India, as amended from time to time[14]. Over the years, India has extended concessional financing to countries such as Cambodia, Lao PDR, Myanmar, and Vietnam, supporting a wide range of projects from irrigation systems and hydropower to telecommunications and railway modernization. These LoCs are an important modality of India's development cooperation policy, aligned with its broader Act East Policy.

India's development cooperation has benefited partner countries. For instance, the Stung Tasal development project in Cambodia was financed under a US$35 million LoC and executed by WAPCOS[15] Limited, a Government of India undertaking. The project was completed, and the utilization of water for irrigation commenced in November 2014 in the downstream area up to the Roleang Chrey Regulator located in Kampong Speu Province. The project provides irrigation to an additional 10,000 hectares of land during the dry season and stands as a long-lasting symbol of friendship between India and Cambodia[16]. Another successful example of India's development cooperation is the irrigation development project in Lao PDR, for which India announced a US$ 17.34 million LoC in 2006[17]. The objective of the project was to increase dry-season rice yields and strengthen food security in the country. The project consisted of three components: the conversion of diesel-driven pump sets to electric-driven pump sets, the improvement of three existing pump service centers, and the installation of ten pump sets delivered to the Government of Laos. The project covered six large irrigation schemes in Champassak province,

Table 5.2: India's Lines of Credit to ASEAN Countries

(US$ million)

Country	Number of LoCs	Total amount, US$ million	Major sectors / project areas
Cambodia	4	102.12	Stung Tasal project, transmission capacity, water resources development
Lao PDR	4	153.83	Irrigation schemes, transmission and distribution, hydropower, electrification, renewable energy
Myanmar	10	475.57	Optical fibre, telecommunications, railway rehabilitation, refinery renovation, vehicle plant, transmission lines, petrochemical complex, farm mechanisation and irrigation
Vietnam	6	491.50	Textile machinery, hydropower support, equipment and supplies, strategic projects
Total	24	1,223.02	Infrastructure, energy, connectivity, irrigation, telecommunications and strategic projects

Sources: EXIM Bank / Ministry of External Affairs / Department of Economic Affairs, Government of India.

developed a command area of 2,676 hectares, and created 65.6 kilometers of canals. It also involved the installation of 10 large pump sets, the conversion of 34 diesel-driven pump sets to electric-driven pump sets across 17 sites, and the improvement of three existing pump service centers located in Pakse, Vientiane, and Savannakhet. The project contributed significantly to increasing agricultural productivity and strengthening food security in Lao PDR[18].

Table 5.2 shows that India has committed US$ 1.22 billion in LoCs to Cambodia, Lao PDR, Myanmar, and Vietnam. Power generation and transmission, particularly hydropower, account for a major share of this assistance, followed by railway and transport infrastructure to enhance regional connectivity. India has also supported agriculture, irrigation, and telecommunications projects, reflecting its commitment to energy security, rural development, food security, and connectivity. However, improving the effectiveness of LoCs requires attention not only to the volume of financing but also implementation. In the context of placing India's development cooperation projects on a faster track, there is need to reduce by reducing cumbersome documentation and bureaucratic procedures, open branches of the EXIM Bank of India in the region and strengthen network of export credit guarantee agencies between India and Southeast and East Asian countries could improve the utilization of LoCs as well as promote trade (De, 2022).

5.4.2.3. Grants

Grant assistance is an important modality of India's development cooperation. At present, around US$ 4.17 billion worth of grant projects are under implementation across the Global South[19], covering various sectors, including infrastructure, power transmission, health, agriculture, hydroelectricity, and education. Unlike projects implemented under concessional finance, grant projects are provided without any repayment obligations and are primarily aimed at supporting community development, social infrastructure, capacity building, healthcare, education, cultural preservation, and livelihood enhancement. Among ASEAN member states, one of the most successful instruments of India's grant assistance is the QIPs programme (see Table 5.3). India's grant assistance has also contributed significantly to improving basic services and quality

of life. In Cambodia, the project titled "Supply and Installation of 1,500 Hand Pumps for Augmentation of Rural Water Supply in Cambodia" was successfully completed in 2021. The project was implemented with grant assistance of US$ 10.41 million provided by India. The hand pumps were installed in the provinces of Tboung Khmum and Banteay Meanchey. The project benefited nearly 400,000 people across 433 villages and contributed to increasing access to safe drinking water, with population coverage rising from 27 per cent to 40 per cent. In Lao PDR, a US$ 1 million food fortification project, funded through the India-UN Development partnership fund, has supported nutrition and food security initiatives. Timor-Leste has also benefited from a US$ 100,000 infrastructure grant, which contributed to local development efforts. A second important dimension of India's grant-funded projects is the preservation of cultural heritage and the strengthening of civilizational linkages. Major grant-supported projects include the restoration of Angkor Wat and Ta Prohm in Cambodia, Vat Phou in Lao PDR, Ananda Pagoda in Myanmar, and the My Son monuments in Vietnam. These projects preserve shared cultural heritage while also supporting tourism, local livelihoods and people-to-people cooperation.

A further dimension of grant assistance is capacity building and technology transfer. This includes the establishment of institutions such as the Centre for Excellence in Software Development and Training (CESDT) in Lao PDR, the Myanmar Institute of Information Technology (MIIT), and entrepreneurship development centres (see Box 5.3).

Box 5.3: Entrepreneurship Development Initiatives in CLMV

India has established Entrepreneurship Development Centres (EDCs) in all four CLMV countries to promote entrepreneurship development and skill enhancement. The first EDC was established in Lao PDR in 2004, with the Ministry of Education and the Department of Higher Technical and Vocational Education serving as the host institutions. In Vietnam, the EDC was established in 2005 under the Ministry of Planning and Investment. Similarly, the EDC in Cambodia was established in 2006 with the Ministry of Labour and Vocational Training as the host ministry, while the Myanmar-India Entrepreneurship Development Centre (MIEDC) was established in 2009 under the Ministry of Education.

These centres have not only helped create an enabling environment for entrepreneurship development but have also introduced training programmes in niche areas. The Entrepreneurship Development Institute of India (EDII), Ahmedabad-an internationally renowned institution in entrepreneurship training, teaching, and research-was entrusted with supporting the governments of these countries in establishing and operationalizing the centres.

The EDC in Cambodia, for example, currently has 96 faculty and staff members. Its trainers are drawn from diverse fields, including finance, agriculture, livestock development, and business administration. The centre currently trains around 450 students through short-duration vocational courses and bachelor's degree programmes[20].

India recently provided grant assistance of US$ 50,000 to the Lao-India Entrepreneurship Development Centre (LIEDC) for infrastructure development. The centre has played an important role in supporting entrepreneurship in Lao PDR. The COVID-19 pandemic adversely affected the Lao economy, resulting in the closure of a large number of businesses and increased unemployment. Individuals trained at LIEDC are better positioned to establish their own enterprises and earn sustainable livelihoods[21].

The Myanmar-India Entrepreneurship Development Centre (MIEDC), Yangon, was inaugurated in 2009 by the then Vice President of India. Since its inception, the centre has trained a total of 6,644 participants. MIEDC has conducted certificate courses in Project Management, Marketing Management, Human Resource Management, Marketing Research, Leadership and Management Skills, Logistics Management, Financial Management, and Strategic Management, among others[22].

Source: Authors' compilation from various sources

Together, these examples show that India's grant assistance in ASEAN operates not only as financial support, but also as a means of strengthening community development, cultural cooperation, technical capacity and long-term institutional linkages.

5.4.3. Quick Impact Projects to CLMV Countries

India's QIPs have emerged as one of the most visible and community-oriented pillars of India's development partnership with ASEAN, particularly with the CLMV countries.[23] It was introduced under the MGC framework in 2012 and got operationalized from 2015 onwards, QIPs reflect India's broader Act East Policy and its emphasis on people-centric regional cooperation.[24] QIPs are designed as short-gestation, high-impact initiatives that directly benefit local communities through rapid delivery of essential social and civic infrastructure.

Each QIP is capped at approximately US$ 50,000 and is generally expected to be completed within one year. The projects primarily focus on sectors such as education, health, sanitation, water supply, renewable energy, agriculture, rural development, civic infrastructure, disaster resilience, and cultural preservation. Through this model, India seeks to deliver tangible developmental outcomes at the grassroots level while simultaneously strengthening people-to-people ties with ASEAN members.[25] The QIP initiative is funded through the India-CLMV Quick Impact Projects Revolving Fund, which initially began with an annual corpus of US$ 1 million. Reflecting the growing importance of the initiative, the fund was subsequently increased to US$ 1.5 million in 2018 and later expanded to US$ 2 million during the India-Vietnam Summit in 2020.[26] Cambodia has received the largest number of projects, followed by Vietnam, Lao PDR, and Myanmar.

5.4.4. Humanitarian Assistance and Disaster Relief (HADR)

Over the years, India has increasingly positioned itself as a dependable "first responder" in the Indo-Pacific, capable of delivering rapid humanitarian support during natural disasters, public health emergencies, food insecurity situations, and maritime crises[27]. Under initiatives such as "Vaccine Maitri[28]," India supplied vaccines, essential medicines, oxygen support systems, and medical equipment to multiple ASEAN member states. In the case of Cambodia, vaccine distribution was undertaken under broader mechanisms like the QUAD Vaccine Initiative, reflecting India's growing coordination with regional and global partners in responding to humanitarian challenges.[29] Indonesia received liquid medical oxygen, oxygen concentrators, and cryogenic tanks during the severe second wave of the pandemic, while Thailand and Vietnam received medical supplies, oxygen support, and emergency healthcare assistance. India extended critical health assistance to

Table 5.3: Quick Impact Projects

Country	Projects Sanctioned	Projects Completed	Under Implementation
Cambodia	72	55	17
Lao PDR	36	30	6
Myanmar	25	NA	NA
Vietnam	65	56	10
Total	198	141	33

Source: Authors' compilation based on various official sources

Table 5.4: India's Humanitarian Assistance to ASEAN Countries

Sl. No.	Country	Year	HADR/Medical/Disaster Relief Supplies
1	Cambodia	2020	15 tons of flood relief material
		2022	3.25 lakh Covishield vaccine doses (under QUAD Vaccine Initiative)
2	Indonesia	2021	Deployment of Deep Submergence Rescue Vessel (DSRV) for submarine KRI Nanggala rescue operation.
			100 MT Liquid Medical Oxygen (LMO) and 300 Oxygen Concentrators and 10 ISO cryogenic tanks
			Cooperation in the maritime domain and Indo-Pacific initiatives under the ASEAN-India frameworks
		2025	Participation in regional disaster management and resilience mechanisms.
3	Myanmar	2020	20,000 relief kits (food + tarpaulin) for displaced people in Rakhine State
			Medical devices, equipment, medicines, oxygen plants, and oxygen tanks
		2021	10000 MT rice and 200 MT wheat
		2022	Two medical Oxygen Plants 40 tonnes of HADR and medical aid
		2023	Deployment of a 10-member medical contingent along with a medical facility under Operation Karuna in the aftermath of Cyclone Mocha
		2024	53 tonnes of HADR supplies under Operation Sadbhav during the outbreak of typhoon Yagi
			22 00 Mt of rice
		2025	52 Tons of relief material after devastating earthquake under Operation Brahma
		2026	625 MT of Humanitarian Aid and Disaster Relief (HADR) material delivered under Operation Brahma.
4	Thailand	2021	1. 200 Oxygen cylinders and 25 Oxygen concentrators
		2022	2. India, along with the Quad countries, jointly provided 2 lakh doses of the Made in India Covovax vaccine.
			3. 52 tonnes of essential relief materials, under Operation Brahma
5	Vietnam	2020	1500 tons of relief material for flood victims in Central Vietnam
			300 Oxygen Concentrators
		2021	35 tons of supplies during Typhoon Yagi under operation Sadbhav
		2024	US$ 1 million worth humanitarian relief assistance to Vietnam under Operation Sadbhav
6	Timor Leste	2022	1. 2000 MT rice in the aftermath of Cyclone Seroja
7	Lao PDR	2022	1. 3 lakh Paracetamol tablets and other supplies
		2023	2. 50,000 doses of Covovax
		2024	3. 10 tonnes of HADR assistance under Operation Sadhbav

Source: Authors' own compilation based on MEA brief with ASEAN member states for various years

Myanmar through the supply of oxygen plants, PPE kits, and nearly 20 million vaccine doses reflecting the humanitarian dimension of its development cooperation (see Table 5.4).

5.4.5. Trade for Development

Another important modality of the Global Development Compact, as discussed in the previous section, is trade. In the context of ASEAN-India relations, the concessional dimension of trade has strengthened economic cooperation by promoting greater trade flows and reinforcing South-South Cooperation. Increased trade between India and ASEAN has also been accompanied by investments, facilitating technology transfer and capacity building, which are essential for integration into global value chains (GVCs) and enhancing the technology intensity of exports. Market access through the Duty-Free Tariff Preference (DFTP) Scheme for Least Developed Countries (LDCs) is an important instrument for generating mutual benefits. Trade finance provided by Southern partners, currency swap agreements, and bilateral investment funds have further strengthened economic cooperation by enabling deeper economic relations. Trade facilitation and trade promotion initiatives also constitute important components of this modality.

In the ASEAN context, the DFTP scheme is relevant to three of the four CLMV countries: Cambodia, Lao PDR and Myanmar, recognised as LDCs in the UN list.[30] The DFTP scheme provides duty-free or preferential access on around 98.2 per cent of India's tariff lines at the HS six-digit level. Under the latest structure, only 97 tariff lines remain on the exclusion list, while 115 tariff lines receive margin-of-preference treatment; all other products outside these categories are eligible for duty-free access. For Cambodia, Lao PDR and Myanmar, this creates potential opportunities to expand exports to India, diversify export destinations and participate more actively in South-South trade linkages.

India also introduced an investment-oriented trade-for-development instrument through the Project Development Fund (PDF) for CLMV countries. The Union Cabinet approved the creation of the Fund on 31 August 2016 with a corpus of US$ 74.42 million. Its stated purpose was to catalyse India's economic presence in Cambodia, Lao PDR, Myanmar and Vietnam. The Fund was housed in the Department of Commerce, operated through the Export-Import Bank of India, and governed by an Inter-Ministerial Committee chaired by the Commerce Secretary.[31]

India's trade-for-development measures with ASEAN demonstrate a layered approach. AITIGA created a reciprocal framework for trade liberalisation; the DFTP scheme provided non-reciprocal market access to ASEAN's LDC members, and the PDF sought to promote investment and regional value-chain integration across all four CLMV countries. Together, these measures show that India's engagement with ASEAN has not been limited to tariff reduction alone. It has also involved attempts to use trade, investment and production networks as instruments of development cooperation. At the same time, the actual developmental impact of these measures depends on preference utilisation, rules of origin compliance, sectoral competitiveness, project implementation and the ability of CLMV economies to translate market access into productive capacity.

5.4.6. Technology Sharing

In the context of science and technology cooperation, formal engagement between India and ASEAN began in 1996 with the establishment of the AIWGST. Initially, ASEAN-India S&T collaborative activities were supported through the ASEAN–India Fund. A major boost to this cooperation came in 2008, when India established a dedicated fund, namely the ASEAN-India Science and Technology Development Fund (AISTDF), to support research and development projects as well as associated project development activities[32]. The fund has a budget of US$ 5 million for development activities, jointly contributed by the Ministry of External Affairs (MEA) and the

Department of Science and Technology (DST). On the Indian side, the Department of Science and Technology (DST) serves as the nodal department for the execution and implementation of ASEAN-India science and technology cooperation.[33]

India has contributed to ICT training and skill development programmes, regulatory dialogues, and the deployment of telecom and ICT solutions across ASEAN member states. A particularly important contribution has been the establishment of Centers of Excellence in Software Development and Training in the CLMV countries. These centers support human resource development and digital capability creation in ASEAN member states. ISRO is also developing a Satellite Tracking and Data Reception Station along with a Data Processing Facility in Vietnam. This facility is designed to acquire and process remote sensing data from Indian satellites for the ASEAN region and disseminate it to member countries. By enabling access to satellite-based data and strengthening regional data-processing capabilities, this initiative reflects India's role in building technological infrastructure and enhancing space-based services for partner countries in Southeast Asia.

5.4.7. Sub-regional Cooperation

5.4.7.1. India's Engagement with ACMECS Countries

The Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS) was established in 2003 as a subregional cooperation framework to promote economic cooperation and development among five countries connected by three major river systems: the Ayeyawady River in Myanmar, the Chao Phraya River in Thailand, and the Mekong River, which flows through Thailand, Lao PDR, Cambodia, and Vietnam (De et al., 2020). It serves as an important platform for enhancing connectivity, narrowing development gaps, and promoting sustainable and inclusive growth across the subregion.

Development partners play a significant role in supporting the implementation of ACMECS initiatives. The current development partners include Australia, China, India, Japan, the Republic of Korea, the United States, and New Zealand, which was formally welcomed as a development partner during the 10th ACMECS Summit in November 2024. Cooperation with development partners includes resource mobilization, human resource development and capacity building, sustainable development, water-resource management, energy and food security, climate resilience, and the implementation of prioritized projects under the ACMECS Master Plan (MFA Thailand, 2022).

5.4.7.2. India's Engagement with Mekong-Ganga Cooperation (MGC)

Established in 2000, the MGC is one of the oldest sub-regional mechanisms in the Mekong sub-region. The initiative seeks to strengthen cooperation between India and the five Mekong countries-Cambodia, Lao PDR, Myanmar, Thailand, and Vietnam (MEA, 2017). Initially focused on culture, tourism, education, and transport and communication, the scope of cooperation has gradually expanded to include MSMEs, public health and traditional medicine, agriculture and allied sectors, water resources management, science and technology, skill development and capacity building, conservation of rice germplasm, and QIPs[34]. One of the most visible outcomes of MGC cooperation is the MGC Museum of Traditional Asian Textiles at Siem Reap, Cambodia, established with Indian assistance in April 2014. The museum serves as a platform for preserving and promoting the shared textile heritage of the Mekong countries and India[35].

Education and capacity building constitute a major pillar of MGC cooperation. Since 2005, India has offered 50 MGC scholarships annually to students from Mekong countries for diploma and degree programmes in history and culture, tourism, information technology, vocational training, engineering, management, teacher training, film direction, and other fields. In addition, under the ASEAN-India Cooperation Fund, India has provided six scholarships for students from Cambodia, Lao

PDR, Myanmar, and Vietnam to pursue Master's programmes at Nalanda University, covering tuition fees, boarding, lodging, and travel expenses. Furthermore, 10 MGC scholarships are offered annually to Cambodia (MEA, 2025).

The 12th MGC Foreign Ministers' Meeting, held in Bangkok on 16 July 2023, reaffirmed the commitment of member countries to deepen cooperation across the ten identified areas of collaboration. To improve implementation, the ministers agreed to adopt a lead-country approach for each sector and endorsed the establishment of the MGC business council to strengthen trade and business linkages. In 2024, India organised the first meetings of the working group on education and the working group on water resource management, both chaired by India, while the MGC business council was formally established[36].

A distinctive feature of MGC cooperation is the implementation of QIPs, which are short-gestation, community-oriented development projects designed to generate immediate and visible benefits. Since 2016, each CLMV countries has been eligible for up to 10 projects annually, with a maximum funding ceiling of US$ 50,000 per project. A total of 121 QIPs have been sanctioned under the MGC framework. In Vietnam alone, 27 Quick Impact Projects have been completed to support local community infrastructure development across different provinces. Through scholarships, institutional cooperation, cultural initiatives, working groups, business engagement, and community-level development projects, the MGC framework continues to serve as an important instrument for strengthening India's partnership with the Mekong sub-region and advancing regional connectivity, capacity building, and sustainable development[37].

5.5. Potential of ASEAN-India Triangular Cooperation in Global South

Triangular cooperation has gained significance as it allows developing countries to combine their own development experience with the financial, technical and institutional capacities of third partners. In the traditional understanding, triangular cooperation involves a partnership between a beneficiary country, a pivotal southern partner and a facilitating partner such as a developed country, multilateral organisation or development agency. However, in the Indo-Pacific and ASEAN context, this model is becoming more flexible. Countries such as India, Indonesia, Malaysia and Thailand are no longer only recipients of development cooperation; they are increasingly acting as providers of knowledge, technical expertise and capacity-building support to other developing countries.

India's approach to triangular cooperation has historically emphasised solidarity, mutual benefit, respect for national sovereignty, demand-driven engagement and non-conditionality. In recent years, India has sought to expand this approach through new platforms such as the Global South Centre of Excellence. In practice, India's triangular cooperation model combines Indian expertise with multilateral or third-country implementation capacity. For instance, the India-UN development partnership fund established in 2017 as a US$ 150 million fund led by the Government of India and implemented in collaboration with the UN system, it supports Southern-owned, demand-driven projects, especially in least developed countries and Small Island Developing States.[38] In Southeast Asia, this model is visible in Timor-Leste, where India supported the project "Leveraging ICT to Improve Education and Skills in Timor-Leste" through the India-UN Development Partnership Fund. The project provided more than US$ 880,000 to improve ICT skills and knowledge for over 5,000 primary and secondary school students in the Oé-Cusse region.[39]

India's participation in the IBSA[40] fund also demonstrates its triangular cooperation approach. In Vietnam, the IBSA Fund supported an innovative e-learning project for health, implemented with WHO, Hai Phong University of Medicine and Pharmacy and Vietnam's Ministry of Health. The project trained

134 district-level and 160 commune-level staff in remote areas during the pilot, with an additional 600 students enrolled in the e-learning system, which was later used for COVID-19 training.[41]In Timor-Leste, the IBSA-funded project at a cost of US$ 1.4 million on conservation agriculture, permaculture and sustainable fisheries management supported food security, sustainable livelihoods and climate resilience, with FAO and local partners involved in implementation under the supervision of Timor Leste's Ministry of Agriculture and Fisheries.[42]

India's partnerships also indicate the possibility of scaling such cooperation. Under the UN-India Global Capacity-Building Initiative launched in 2025 under MEA-UN cooperation, Indian institutions such as C-DAC, the National Health Authority and the National Institute of Health and Family Welfare are linked with UNDP to share Indian development practices and providing technical support. One of the first projects includes a digital health platform initiative in Lao PDR (and Zambia).[43] It illustrates a distinct channel through which Indian digital public infrastructure and health-governance experience can be transferred through multilateral triangular channels.

India's triangular cooperation with ASEAN should be understood within the wider transformation of South-South Cooperation, this is particularly relevant in the ASEAN context, where countries such as Indonesia, Malaysia and Thailand have developed their own approaches to triangular cooperation through partnerships with Japan, Germany, Korea, UN agencies and other development actors. Their experience creates an important basis for rethinking ASEAN-India cooperation not simply as India extending development initiatives to ASEAN member states, but as a potential partnership among Southern actors with complementary strengths.[44]

ASEAN can be seen as a platform through which India and selected ASEAN member states jointly design and deliver development solutions. In such a model, India and ASEAN member states would act as co-providers, while third partners such as Japan, Germany, France, Australia, Korea, the UN or other multilateral agencies that could provide finance, technology, institutional support or implementation networks. This would create a more horizontal form of triangular cooperation, consistent with the principles of South-South Cooperation while also benefiting from the resource-mobilising capacity of traditional and multilateral partners.

This approach is especially relevant for less-developed ASEAN members and other countries of the Global South because ASEAN already possesses institutional models for triangular capacity-building. For instance, Malaysia's Third Country Training Programme (TCTP) demonstrates how a Southern country can work with external partners to train officials and professionals from other developing countries, thereby, combining Malaysian development experience with the financial and technical support of partners such as JICA[45], GIZ[46] and the Islamic Development Bank. Similarly Thailand's model, implemented through TICA[47], uses training programmes, scholarships, expert exchanges and trilateral partnerships to support capacity-building in neighbouring countries.[48] India could contribute its strengths in digital public infrastructure, health systems, agriculture, renewable energy and development finance, while ASEAN partners could provide regional training platforms, local implementation experience and sector-specific expertise.

5.6. Advancing ASEAN-India Development Cooperation through Global and Regional Initiatives

India is a member of several multilateral and plurilateral platforms, including the G20, the United Nations, and BRICS. In addition, India has established and promoted a number of international initiatives such as the International Solar Alliance (ISA), the Coalition for Disaster Resilient Infrastructure (CDRI), and the Global Biofuels Alliance. Through these

platforms, India has articulated its perspectives on global development challenges and development cooperation. Across international forums, India has consistently advocated inclusive and equitable growth, greater representation of the Global South in international financial decision-making, and reforms in global governance institutions (MEA, 2025).

During its G20 Presidency, India highlighted the priorities and concerns of developing countries and positioned itself as a leading voice of the Global South. As the chair of BRICS in 2026, India has continued to advocate reforms in international institutions and supported the expansion of BRICS membership, including the inclusion of Indonesia as a full member and Thailand and Malaysia as partner countries. Through these engagements, India has promoted low-cost and scalable development solutions in areas such as digital public infrastructure, healthcare, start-up ecosystems, and skill development. At the same time, India has launched several important regional initiatives, including the Neighbourhood First Policy, Act East Policy, Mutual and Holistic Advancement for Security and Growth Across Regions (MAHASAGAR), the Indo-Pacific Oceans Initiative (IPOI), and the India-Middle East-Europe Economic Corridor (IMEC). In this context, it is important to examine ASEAN-India development cooperation through multilateral platforms that provide opportunities for collaboration and policy convergence.

5.6.1. International Solar Alliance (ISA)

The International Solar Alliance has emerged as an important platform for promoting ASEAN-India cooperation in renewable energy. Through ISA, India supports cooperation with ASEAN member states in solar energy deployment, technical assistance, capacity-building, and renewable energy integration. This cooperation was reflected in the ASEAN-India High-Level Conference on Renewable Energy in 2022, where India and ASEAN discussed knowledge-sharing, capacity-building, technical assistance, renewable-energy manufacturing, and grid integration (ASEAN, 2022). During the conference, ISA also presented its vision and highlighted the potential benefits of engagement with ASEAN partners. A notable ASEAN-linked example is Cambodia's ISA-supported project to solarise three schools in Koh Rong City through the installation of solar photovoltaic systems and battery energy storage facilities[49]. The project seeks to improve access to reliable electricity in educational institutions while also providing training for local communities in the operation and maintenance of the systems. Although modest in scale, the initiative demonstrates how ISA can facilitate decentralised clean-energy solutions and strengthen local capacities in ASEAN member countries[50].

5.6.2. Coalition for Disaster Resilient Infrastructure (CDRI)

The CDRI provides another important platform for India–ASEAN cooperation. It focuses on strengthening the resilience of infrastructure systems against climate and disaster-related risks. This is particularly relevant for ASEAN, where many countries are highly vulnerable to floods, cyclones, earthquakes, tsunamis, sea-level rise, and other climate-induced hazards[51]. The 2024 ASEAN-India Joint Statement recognised the importance of enhancing the resilience of infrastructure systems through knowledge-sharing, exchange of best practices, capacity-building, and technical assistance, including through CDRI[52]. The statement also highlighted cooperation between the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) and India's National Disaster Management Authority (NDMA) (MEA, 2024). Through such engagements, CDRI can contribute to strengthening regional preparedness and resilience while supporting ASEAN's broader sustainable development objectives[53].

5.7. Potential Areas for Future Development Cooperation

As Table 5.5 shows, the sector-wise development cooperation is based on India's development partnership with ASEAN member states. The table

Table 5.5: Country-wise Potential Areas of Cooperation with ASEAN

Country	Existing Sectors of Cooperation	Potential Sectors for Future Development Cooperation
Malaysia	Capacity building, Higher Education, Cultural Cooperation, Traditional Medicine, Scholarships, Skill development and language Promotion	Digital Public Infrastructure, Artificial Intelligences, Digital health, Fintech, UPI, Skill development, renewable energy
Thailand	Connectivity, Capacity building, Tourism, Education, Culture, Buddhist Heritage and Health	Renewable Energy, Public Health, Finance, Supply Chain Integration, Connectivity and smart logistics, DPI and digital economy
Indonesia	Cultural cooperation, Space cooperation, Science and technology, Higher Education	Maritime Cooperation, Blue Economy, Disaster Management, AI, Renewable Energy, Community Development
Myanmar	Infrastructure, Connectivity, Transport, Capacity building, Health Care, Entrepreneurship development, Agriculture	Trade facilitation, Renewable Energy, Digital Public Infrastructure, Agriculture value chain, Skill development, Humanitarian, Connectivity and Transport
Singapore	Fintech, DPI, Space Cooperation, Cyber Security, Green Economy, Trade Facilitation	AI, Semiconductor Cooperation, Quantum Technologies, Digital trade, Green Finance, Advanced Manufacturing
Lao PDR	Capacity Building, Irrigation, Entrepreneurship Development, Agriculture, Heritage Conservation and Telecom Infrastructure	Hydropower Cooperation, Skill development, Renewable energy, Digital governance, Climate smart agriculture, Tourism Infrastructure and food processing
Cambodia	Drinking Water, Power Transmission, Water resources, Irrigation, Heritage Conservation, IT, Local development	Digital Skill, Smart agriculture, Renewable energy, Vocational education, Women entrepreneurship development, public health
Vietnam	Hydropower, Agriculture, Cultural cooperation, Capacity building, Industrial development, Railways	Semiconductor manufacturing, Green energy Transition, digital economy, Innovation partnerships, Blue economy, AI, Supply chain resilience
Philippines	FinTech, Agriculture, Space Cooperation, Science and Technology, Capacity building, Health and Tourism	Digital payments Integration, Disaster Risk Management, Renewable Energy, Maritime Security, Blue Economy, Digital health
Brunei	Capacity building, Skill Development, Space cooperation	Energy Transition, Digital economy, Cyber Security, Finance, Renewable Energy and Higher education
Timor Leste	Healthcare, ICT, Agriculture, entrepreneurship development, Infrastructure development	Renewable Energy, Fisheries Development, Digital education, rural development, Food Security, Climate adaptation and health

Source: Author's own compilation based on Various Sources

also identifies potential future areas of cooperation based on mutual benefits. It clearly highlights the diversity and evolving nature of India's development cooperation. As discussed in the previous section of this chapter, India's cooperation with ASEAN member states has gradually expanded from traditional areas such as education, capacity building, agriculture, healthcare, and cultural cooperation to emerging sectors including UPI, Digital Public Infrastructure (DPI), Artificial Intelligence (AI), FinTech, renewable energy, and climate resilience.

Table 5.5 also highlights several future areas of cooperation that are important for sustainable growth. These sectors are equally important from the perspective of India's own developmental priorities and comparative advantages. Potential areas include artificial intelligence, semiconductors, renewable energy, climate resilience, digital governance, smart agriculture, blue economy, and cyber security. These emerging sectors provide significant opportunities for deepening India–ASEAN development cooperation and strengthening long-term strategic partnerships.

5.8. Conclusion, Policy Recommendations and Way Forward

India's vision is to become a developed country by 2047 and ASEAN in 2045. Our shared future provides an important strategic context for deepening the ASEAN-India partnership and expanding development cooperation. This chapter has shown that India's engagement with ASEAN has evolved into a broad and multi-dimensional development partnership, shaped by the Act East Policy and implemented through a combination of capacity building, concessional finance, grant assistance, Quick Impact Projects, technology cooperation and infrastructure development. Since 2015, India has provided around 15,000 capacity-building and ITEC training slots, approximately US$ 1.22 billion in Lines of Credit for development projects, around 200 Quick Impact Projects in Mekong sub-region countries, and grant assistance across ASEAN member states. The growing emphasis on localisation through QIPs has been particularly significant in translating broader development objectives into visible community-level outcomes.

The analysis also demonstrates the diversity of India's development cooperation. Major initiatives include the Kaladan Multimodal Transit Transport Project in Myanmar, the Stung Tasal Dam in Cambodia, irrigation projects in Lao PDR, and industrial and agricultural projects in Vietnam, alongside cooperation in digital technologies, health, renewable energy, space, cultural heritage and human resource development. Connectivity remains a central pillar of the partnership, while emerging platforms such as the International Solar Alliance, the Coalition for Disaster Resilient Infrastructure and the Global Biofuels Alliance provide additional avenues for cooperation in energy transition, climate resilience and sustainable development.

The chapter also highlights several areas where cooperation can be strengthened further. These include improving the implementation and operationalisation of connectivity projects, expanding capacity-building programmes, scaling up community-level development initiatives, deepening digital and technological cooperation, strengthening coordination across multiple regional mechanisms, and mobilising more innovative forms of development finance and triangular cooperation. The following section, therefore, sets out a series of recommendations aimed at addressing these gaps and translating the growing strategic convergence between India and ASEAN into a more coordinated, scalable and outcome-oriented development partnership.

5.8.1. Expand Capacity Building Programmes

The establishment of Indian Institute of Technology (IIT) campuses in Malaysia and Thailand represents a significant advancement in educational cooperation.

In 2024, India launched the ASEAN-India Fellowship for Higher Education in Agriculture and Allied Sciences to strengthen expertise in agriculture and allied sectors across ASEAN. As this chapter analyses, greater emphasis should be placed on expanding capacity-building programmes. The current number of ITEC training programmes and specialised professional courses for ASEAN member states should be increased. Similarly, the ICCR scholarships should be expanded to further strengthen India-ASEAN relations.

5.8.2. Strengthen Digital Public Infrastructure (DPI) Cooperation

India's experience with Digital Public Infrastructure (DPI) provides an important model for ASEAN member states. Sharing best practices in digital payments, digital identity systems, e-governance platforms, and fintech solutions can significantly strengthen existing cooperation and support digital transformation across ASEAN member states.

5.8.3. Scale up Quick Impact Projects (QIPs)

Localization of development is essential. In this context, scaling up Quick Impact Projects (QIPs) represents an important way forward. Increasing both the number of QIPs and the financial allocation for ASEAN member states would enable greater community-level impact. Future projects should focus on healthcare, education, water management, women's empowerment, and climate adaptation.

5.8.4. Prioritise Connectivity Projects

Connectivity should remain a central pillar of ASEAN–India development cooperation. India should prioritise the timely completion of the India-Myanmar-Thailand Trilateral Highway and its proposed extension to Cambodia, Lao PDR, and VietNam (De, 2021). Existing Lines of Credit and other development financing instruments should continue to support transport corridors, border infrastructure, and logistics networks. India should also explore multimodal and digital connectivity initiatives linking Northeast India with mainland Southeast Asia to strengthen economic integration under the Act East Policy.

5.8.5. Deepen Cooperation in Agriculture and Food Security

Agriculture and food security represent another important area where India and ASEAN can deepen their partnership. Building on successful initiatives such as irrigation projects in Lao PDR and Cambodia and support to the Cuulong Delta Rice Research Institute in Vietnam, India can replicate similar successful models in other ASEAN partner countries.

5.8.6. Renewable Energy and Sustainable Development Cooperation

Renewable energy is another important area of cooperation. Several ASEAN member states are members of the International Solar Alliance (ISA). ASEAN member states possess solar energy potential that is nearly one hundred times greater than their existing installed capacity, creating significant opportunities for cooperation in solar energy deployment, decentralized renewable energy systems, technical assistance and capacity building. India has also successfully achieved 20 per cent ethanol blending, which offers another important area of cooperation between ASEAN and India in the biofuel sector. Development cooperation through the International Solar Alliance (ISA), the Coalition for Disaster Resilient Infrastructure (CDRI) and the Global Biofuels Alliance can further strengthen collaboration in renewable energy, climate resilience and sustainable development.

5.8.7. Strengthen Cooperation in Traditional Medicine and Health

Traditional medicine and healthcare provide another promising sector for enhanced ASEAN-India cooperation. The establishment of regional centres

for traditional medicine research and training across ASEAN member states would further strengthen development cooperation in the health sector.

5.8.8. Expand Space and Technology Cooperation

Science and technology cooperation has also expanded through the ASEAN-India Green Fund and the ASEAN-India Science and Technology Development Fund. India contributed US$ 1 million to the ASEAN Development Fund, increased the contribution to US$ 5 million in 2016, and made an additional contribution of US$ 5 million in 2022 (ASEAN, 2026). These initiatives support research, technology development, innovation, and climate-related cooperation.

Existing cooperation in space technology should be further strengthened. India's successful partnerships with Indonesia and Brunei in satellite tracking and space technology provide a strong foundation. Greater emphasis should be placed on capacity-building programmes in satellite applications, remote sensing, disaster monitoring, and increasing the number of ITEC training slots in these specialised sectors.

5.8.9. Promote Cultural Heritage Conservation

The continuation of restoration projects at important cultural and religious heritage sites remains essential for strengthening development cooperation. Such initiatives will also promote tourism between India and ASEAN member states. Greater emphasis should also be placed on promoting Buddhist circuits and cultural exchange programmes.

5.8.10. Promote Innovative Partnership Models through Triangular Cooperation

Triangular Cooperation can enhance the flow of development assistance by bringing together donor countries, multilateral institutions, pivotal partners, and beneficiary countries (Kumar & Lakhiani, 2026). India and ASEAN should develop a structured framework for triangular cooperation, with third partners contributing finance, technology, and implementation support. Initial pilot projects could focus on Digital Public Infrastructure, digital health, agriculture and food security, renewable energy, climate resilience, skills development, and capacity building, with particular attention to less-developed ASEAN members countries.

5.8.11. Establish an ASEAN-India Development Cooperation Platform

The chapter recommends establishing a dedicated ASEAN-India Development Cooperation platform to coordinate capacity building, grant assistance, development finance, knowledge sharing, and monitoring of development outcomes. The platform should align development cooperation with the ASEAN Community Vision 2045 and India's Vision 2047 of becoming a developed country.

5.8.12. Leverage the Global South Centre of Excellence (DAKSHIN)

The Global South Centre of Excellence (DAKSHIN), launched by India on 17 November 2023 during the Second Voice of Global South Summit, provides a dynamic platform for addressing the developmental challenges of the Global South[54]. By facilitating a two-way exchange of knowledge and experiences, DAKSHIN works with stakeholders to identify and disseminate sustainable solutions capable of transforming economies and societies across the Global South. At present, DAKSHIN has signed Letters of Association (LoAs) with 163 think tanks from 94 countries, including eight think tanks from ASEAN member states. By fostering the exchange of knowledge, evidence-based policy frameworks, and peer learning, DAKSHIN can support sustainable and inclusive development.

Endnotes

1 The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967 in Bangkok. It currently comprises 10 member states: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. Timor-Leste was granted observer status and admitted in principle as ASEAN's 11th member in November 2022 (MEA, 2025)

2 The ASEAN–India Trade in Goods Agreement (AITIGA) was signed in August 2009 and entered into force in January 2010. By August 2011, all ASEAN member states had become parties to the Agreement.

3 Refer, MEA (2026)

4 The objective of Act East Policy is to promote economic cooperation, cultural ties and develop strategic relationships with countries in the Indo-Pacific region through continuous engagement at bilateral, regional and multilateral levels (MEA, 2022) and it was announced at the 12th ASEAN-India Summit in 2014.

5 In January 2015 set up a separate Indian Mission to ASEAN in Jakarta to strengthen engagement with ASEAN and ASEAN-centric processes (MEA, 2025).

6 https://www.mea.gov.in/speeches-statements?dtl/40229/English_Translation_of_Prime_Ministers_opening_remarks_during_the_22nd_ASEANIndia_Summit_October_26_2025

7 https://www.mea.gov.in/Portal/ForeignRelation/BRIEF-ON-ASEAN-INDIA.pdf

8 https://www.mea.gov.in/speeches-statements?dtl/41060/Remarks_by_Secretary_East_at_Inaugural_Ceremony_Centre_for_Southeast_Asian_Studies_Nalanda_University_Rajgir_Bihar

9 Refer MEA (2025)

10 https://www.ris.org.in/sites/default/files/Publication/Global_Development_Compact.pdf

11 https://www.mea.gov.in/press-releases?dtl/38550/Prime_Minister_addresses_G_20_session_on_Sustainable_Development_and_Energy_Transition

12 https://embindpp.gov.in/press?id=dJNDd

13 Embassy of India, Bangkok, 2022.

14 https://www.mea.gov.in/lines-of-credit-for-development-projects

15 Water and Power Consultancy Services

16 https://www.wapcos.co.in/media/docs/Publication/WAPCOS_Stung_Tasal_Dam.docx.pdf

17 https://kpl.gov.la/EN/detail.aspx?id=73

18 https://www.wapcos.co.in/media/docs/Publication/WAPCOS_CTB_21st_Aug_2024_compressed.pdf

19 https://www.mea.gov.in/grant-in-aid-projects-development-projects

20 https://embindpp.gov.in/pages?id=penRe&subid=QdJ2d

21 https://kpl.gov.la/en/detail.aspx?id=67430

22 https://embassyofindiayangon.gov.in/public_files/assets/pdf/Yangon_DC_080126.pdf

23 Cambodia, Lao PDR, Myanmar, and Vietnam

24 https://presoffministry.gov.mm/en/article/21485

25 https://mgc.gov.in/qip

26 https://mgc.gov.in/qip

27 https://www.icwa.in/show_content.php?lang=1&level=1&ls_id=14390&lid=8807

28 During the COVID 19

29 https://www.mea.gov.in/press-releases.htm?dtl/35188/Inaugural_delivery_of_Covid_Vaccines_under_the_Quads_Vaccine_Partnership

30 https://unctad.org/topic/least-developed-countries/list

31 https://www.pib.gov.in/newsite/PrintRelease.aspx?relid=149378&reg=48&lang=2

32 Department of Science and Technology [DST], n.d.

33 https://dst.gov.in/sites/default/files/ASEAN-India%20Collabortive%20R%26amp%3BD%20_Annoucement__0.pdf

34 Refer, MEA (2015)

35 Refer, MEA (2019)

36 MEA (2024)

37 MEA (2023, 2022)

38 https://unsouthsouth.org/indiaunfund/

39 https://unsouthsouth.org/2019/07/01/improving-ict-skills-of-students-in-oe-cusse-region-timor-leste/

40 India-Brazil-South Africa (IBSA)

41 https://southsouth-galaxy.org/solutions/detail/innovative-e-learning-approach-for-health/

42 https://www.indembassydili.gov.in/page/bilateral-relations/

43 https://www.mea.gov.in/press-releases.htm?dtl%2F39933%2FLaunch_of_Projects_under_India_UN_Global_Capacity_Building_Initiative=

44 https://www.ris.org.in/sites/default/files/Publication/southern-perspective-on-triangular-cooperation.pdf

45 Japan International Cooperation Agency

46 Deutsche Gesellschaft für Internationale Zusammenarbeit

47 Thailand International Cooperation Agency

48 https://www.ris.org.in/sites/default/files/Publication/southern-perspective-on-triangular-cooperation.pdf

49 https://isolaralliance.org/uploads/docs/52e970d74272c9079053d966043b80.pdf

50 https://www.pib.gov.in/PressReleasePage.aspx?PRID=1796246&reg=3&lang=2

51 https://ndmindia.mha.gov.in/ndmi/leadership-initiatives

52 https://www.mea.gov.in/images/CPV/G20-New-Delhi-Leaders-Declaration.pdf

53 http://asean.org/wp-content/uploads/2024/10/82024J1.pdf

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6 India-ASEAN Trade under AITIGA: Progress, Imbalances and Untapped Potential

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6.1. Introduction

India and the Association of Southeast Asian Nations (ASEAN) share deep historical and cultural linkages. Over centuries, the two regions have witnessed extensive exchanges of ideas, people, religions, and traditions, creating a rich legacy of shared cultural values and civilisational heritage. Despite these longstanding connections, economic integration between India and ASEAN remained limited until the early 1990s. This was largely attributable to the inward-looking economic policies pursued by India and several ASEAN member states, as well as the prevailing geopolitical environment. The end of the Cold War and India's economic liberalisation in 1991 fundamentally altered this landscape, creating new opportunities for deeper economic and strategic engagement with Southeast Asia. Against this backdrop, India launched its Look East Policy (LEP) in 1991, aimed at strengthening economic ties, expanding trade and investment, and enhancing political and strategic cooperation with East and Southeast Asian economies. This renewed engagement led to the gradual institutionalisation of India-ASEAN relations. India became an ASEAN Sectoral Dialogue Partner in 1992, a Full Dialogue Partner in 1996, and a Summit-level Partner in 2002. The relationship was subsequently elevated to a Strategic Partnership in 2012, and Comprehensive Strategic Partnership (CSP) in 2022, reflecting the growing breadth and depth of relations.

The deepening of political and institutional ties provided an important foundation for expanding economic engagement between India and ASEAN. A major milestone in this process was the signing of the ASEAN-India Trade in Goods Agreement (AITIGA) in 2009, which entered into force on 1 January 2010. By establishing a framework for preferential tariff liberalisation, the agreement sought to promote bilateral trade and advance regional economic integration. Since its implementation, bilateral merchandise trade has expanded significantly, rising from approximately US$ 53 billion in 2010 to more than US$ 123 billion in 2025 (refer Figure 6.1). At the same time, India's merchandise trade deficit with ASEAN has widened from approximately US$ 7 billion in 2010 to US$ 51 billion in 2025. The coexistence of rapid trade expansion and a widening trade imbalance have generated important policy concerns regarding the distribution of gains from trade liberalisation, the effectiveness of preferential market access, and the structural determinants of bilateral trade patterns.

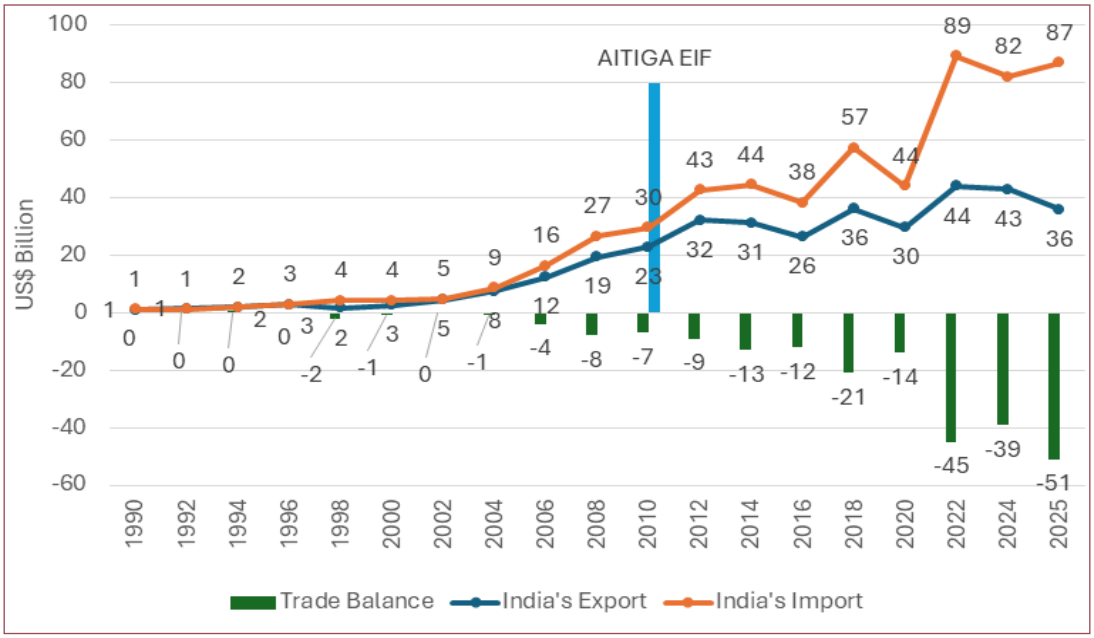
In view of the above, this chapter examines the evolution of India-ASEAN merchandise trade under AITIGA, identifies the factors contributing to India's widening trade deficit, and assesses the scope for expanding bilateral trade, particularly Indian exports to ASEAN markets. The chapter is organised into six sections. Following the introduction, Section 6.2 analyses the evolution and changing composition of bilateral merchandise trade, with particular attention to tariff-liberalisation commitments under AITIGA. Section 6.3 investigates the factors underlying India's widening trade deficit. Section 6.4 evaluates unrealised trade potential, especially opportunities for expanding Indian exports to ASEAN. Section 6.5 examines the principal constraints to realising this potential, focusing on tariff barriers, non-tariff measures, and logistics costs. Section 6.6 concludes and outlines policy priorities for strengthening AITIGA in the context of its ongoing review.

6.2. Evolution of ASEAN-India Trade

India's sectoral dialogue partnership with ASEAN, enacted in 1992, marked the beginning of structured economic cooperation between the two regions. Over the next one decade, both regions established dedicated institutional mechanisms to promote economic cooperation. The establishment of ASEAN-India Joint Sectoral Cooperation Committee (AIJSCC) in 1993 was one of the first such mechanism which provided an institutional platform for advancing this engagement in three priority areas, namely trade, investment and tourism. During its initial years, the AIJSCC focused primarily on trade promotion and facilitation through the exchange of trade information, greater interaction between business communities and cooperation on trade-related matters. These initiatives, together with the economic liberalisation undertaken by India and several ASEAN member states, helped create a conducive environment for bilateral trade expansion. Consequently, India-ASEAN merchandise trade, which stood at approximately US$ 2 billion in 1990, began to gain momentum around the turn of the century (Figure 6.1).

The growing economic engagement encouraged both sides to move beyond trade promotion towards deeper economic integration. A significant development in

Figure 6.1: Trends in India's Trade with ASEAN



Source: Drawn by authors based on UN Comtrade database

this direction was the establishment of the ASEAN Economic Ministers-India Consultations in 2002. It provided a dedicated ministerial platform for advancing trade and investment cooperation and led to the signing of the Framework Agreement on Comprehensive Economic Cooperation in 2003, marking a shift towards formal trade liberalisation. The subsequent negotiations culminated in the signing of the ASEAN-India Trade in Goods Agreement (AITIGA) in August 2009, which entered into force in January 2010. The implementation of AITIGA marked a new phase in India-ASEAN trade relations. It introduced a comprehensive, rules-based framework for preferential tariff liberalisation. Unlike the earlier period, when trade expansion was driven largely by domestic economic reforms and trade facilitation initiatives, AITIGA provided for the phased elimination and reduction of customs duties on a substantial proportion of tariff lines.

Under the AITIGA, India committed to eliminate 74.18 per cent of its tariff lines and reduce tariff on additional 15.16 per cent tariff lines (Table 6.1). ASEAN member states, on average, committed to eliminating tariffs on 76.40 per cent of their tariff lines. However, this average conceals considerable differences in the extent of liberalisation across member states. ASEAN's average of 76.40 per cent was statistically inflated by members like Singapore, which already had around 100 per cent duty-free access even before signing AITIGA. Notably at the country level, major ASEAN member states made relatively limited tariff elimination commitments. For example, Indonesia committed to eliminate tariffs on only 46.60 per cent of its tariff lines while Vietnam committed to eliminate tariffs on 68.10 per cent of its tariff lines. Though smaller economies such as Cambodia, Brunei Darussalam and Lao PDR offered more extensive tariff elimination, their limited shares in India's trade with ASEAN reduced the immediate commercial significance of these commitments. Moreover, several ASEAN member states maintained relatively large exclusion lists (EL), including Vietnam (19.10

Table 6.1: Tariff Liberalisation Commitment of India and ASEAN Member States under AITIGA

Country	Tariff Commitments under AITIGA			Total Tariff Lines at EIF	MFN Duty Free Tariff Lines at EIF (%)
	Tariff Elimination (NT1 + NT2) (%)	Tariff Reduction (ST + SP+HST) (%)	Exclusion List (EL) (%)		
India	74.18	15.16	10.66	12,169	3.20
Brunei	79.40	7.70	12.90	10,689	75.40
Cambodia	84.85	13.14	2.01	8,300	13.70
Indonesia	46.60	46.20	7.20	8,738	24.00
Laos PDR	77.50	19.70	2.80	8,300	0.00
Malaysia	76.80	14.40	8.80	10,396	63.80
Myanmar	69.00	14.70	16.30	11,109	4.10
Philippines	75.60	11.20	13.20	13,923	5.10
Thailand	75.60	11.80	12.60	8,307	18.30
Vietnam	68.10	12.80	19.10	10,716	32.80
Singapore	All tariff lines zero duty on EIF				99.99

Note: NT1 = Normal Track 1; NT2 = Normal Track 2; ST = Sensitive Track; HST = Highly Sensitive Track; EL = Exclusion List; EIF = Entry into Force

Source: Authors' compilation from AITIGA and WTO documents

Table 6.2: India-ASEAN Bilateral Trade Profile

	India's Imports from ASEAN		India's Exports to ASEAN	
Year	2009	2025	2009	2025
Number of Products (HS 6-digit level)	3337	3677	3625	3958
Share of Top 10 Commodities (% of total)	47.50	31.53	48.46	35.79

Source: Authors' calculation based on WITS Database

per cent), Myanmar (16.30 per cent), the Philippines (13.20 per cent) and Thailand (12.60 per cent), thereby restricting the scope of preferential market access[1] (ASEAN Secretariat, 2009; World Trade Organization [WTO], n.d.). India also maintained an exclusion list covering 10.66 per cent of tariff lines, indicating that liberalisation remained incomplete on both sides.

Following the implementation of AITIGA, India-ASEAN bilateral trade expanded substantially, although the pace and composition of growth varied across exports and imports. Two-way trade increased from US$ 42 billion in 2009 to over US$ 123 billion in 2025, registering an average annual growth rate of around 7 per cent. The trade volume crossed the US$ 100 billion mark for the first time in 2021 and continued to rise steadily, even in the face of global headwinds such as the COVID-19 pandemic and subsequent widespread supply chain disruptions. However, the post-AITIGA surge in bilateral trade has been lopsided, primarily driven by India's rising imports from ASEAN (Figure 6.1).

In 2009, India imported goods worth US$ 24 billion from ASEAN on 3337 tariff lines at the HS 6-digit level, with the top 10 commodities accounting for 47.50 per cent of total imports (Table 6.2). Notably, the import basket was heavily skewed toward primary and resource-based products, including crude palm oil (11 per cent), coal (10 per cent), crude petrol oil (7 per cent), petrol oil with medium preparations (6 per cent), etc. (Table 6.3). Among manufactured goods, only parts and accessories regarding automatic data processing machines featured in the top ten imported items, indicating India's limited exposure to ASEAN's industrial output at the time. Post AITIGA, India's imports from ASEAN rose sharply to reach US$ 87 billion in 2025, marking a nearly three-fold increase in 16 years. This surge also coincided with a significant diversification of the import basket. The numbers of products imported at 6-digit tariff lines increased to 3677 and the share of the top 10 commodities declined to 31.53 per cent in 2025. More importantly, the nature of imports shifted toward precious metals and technology-intensive products. ASEAN has emerged as a key supplier of high-value manufactured goods to India, including Electronic integrated circuits (3 per cent), platinum (2 per cent), parts of communication apparatus (2 per cent), gold (2 per cent), television cameras (1 per cent), parts of telephone sets (1 per cent). This transition highlights not only ASEAN member states (like Vietnam, Malaysia and Thailand) rising industrial capability and competitiveness in sectors such as electronic, electrical components, precision engineering and precious metals, but also signals a deeper integration of India and ASEAN into global value chains.

In comparison to imports, the performance of India's exports to ASEAN, post-AITGA has remained a mixed bag. In 2009, India exported goods worth US$ 18 billion under 3625 tariff lines (HS 6-digit level) to ASEAN. The exports were concentrated in a few products, with the top ten items accounting for around 48.46 per cent of total exports. These included medium petrol oil (10 per cent), light petrol oil (7 per cent), telephone sets (5 per cent), Diamond (5 per cent), Cruise ships (5 per cent), oil-cakes (4 per

Table 6.3: India's Top 10 Imported Products from ASEAN

(Percentage share in total)

HS Code	Product Code	2009	HS Code	Product Code	2025
151110	Crude palm oil	11	270119	Coal (excl. anthracite and bituminous coal)	10
270119	Coal (excl. anthracite and bituminous coal)	10	151110	Crude palm oil	8
270900	Petroleum oils and oils obtained from bituminous minerals	7	854231	Electronic integrated circuits as processors and controllers	3
271019	Medium oils and preparations, of petroleum or bituminous minerals	6	711019	Platinum, in semi-manufactured forms	2
260300	Copper ores and concentrates	3	847150	Processing units for automatic data-processing machines	2
151190	Palm oil and its fractions	3	710812	Gold, incl. gold plated with platinum	2
071331	Dried, shelled beans of species "Vigna mungo	2	851762	Machines for the reception, conversion and transmission	2
440399	Wood in the rough, whether or not stripped of bark or sapwood	2	721891	Semi-finished products of stainless steel	1
847330	Parts and accessories of automatic data-processing machines	2	852589	Television cameras, digital cameras and video camera recorders	1
071390	Dried, shelled leguminous vegetables	1	851779	Parts of telephone sets, telephones for cellular networks	1

Source: Authors' compilation from UN Comtrade Database

cent) and frozen meat of bovine animals (3 per cent) (Table 6.4). Over the last 16 years, Indian exports to ASEAN have indeed diversified as the number of exported goods has increased and share of top ten commodities in total exports has declined sharply (Table 6.2). The changing composition of India's top exports also reflects a qualitative upgrade, and the export composition has shifted toward a more diverse and value-added mix. While the medium oils (10 per cent), light oils (5 per cent) and frozen bovine meat (5 per cent) remains the top export items, new categories such as turbo-jets (4 per cent), medicaments (3 per cent), jewellery articles (2 per cent), aluminium (2 per cent), vessels (1 per cent), unwrought lead (1 per cent) have also emerged as important exports (Table 6.4). However, despite diversification, the overall growth in exports have remained relatively low, leading to a sharp surge in trade deficit.

Table 6.4: India's Top 10 Exported Products to ASEAN

(Percentage share in total)

HS Code	Product Code	2009	HS Code	Product Code	2025
271019	Medium oils and preparations	10	271019	Medium oils and preparations	10
271011	Light oils and preparations	7	271012	Light oils and preparations	5
851712	Telephones for cellular networks "mobile telephones	5	020230	Frozen, boneless meat of bovine animals	5
890110	Cruise ships, excursion boats and similar vessels	5	841112	Turbojets of a thrust > 25 kN	4
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	5	300490	Medicaments consisting of mixed or unmixed products for therapeutic	3
230400	Oilcake and other solid residues,	4	711319	Articles of jewellery and parts thereof	2
020230	Frozen, boneless meat of bovine animals	3	760110	Aluminium, not alloyed, unwrought	2
890590	Light-vessels, fire-floats, floating cranes and other vessels, the navigability of which is ...	3	890690	Vessels, incl. lifeboats (excl. warships, rowing boats and other vessels)	1
890190	Vessels for the transport of goods and vessels for the transport of both persons and goods ...	2	780110	Unwrought lead, refined	1
890400	Tugs and pusher craft	2	100630	Semi-milled or wholly milled rice, whether or not polished or glazed	1

Source: Authors' compilation from UN Comtrade Database

6.3. Widening Trade Deficit: Understanding the Underlying Factors

At the time of AITIGA's signing in 2009, India-ASEAN bilateral trade was relatively balanced. India's exports to ASEAN stood at US$ 18 billion against imports of US$ 24 billion, resulting in a deficit of around US$ 6 billion. However, the volume of the deficit increased to US$ 51 billion in 2025. This growing imbalance has emerged as a major concern in India's trade relations with ASEAN and has raised important questions about the distribution of gains from AITIGA. Therefore, it is important to understand whether widening deficits primarily reflect structural differences between the two economies, or has it also been influenced by the design and implementation of AITIGA? A closer examination of bilateral trade patterns suggest that several interrelated factors may have contributed to the growing imbalance.

First, and perhaps most important, is asymmetric tariff liberalisation under AITIGA. As discussed earlier, tariff-elimination commitments under AITIGA varied considerably across ASEAN member states. Although ASEAN member states, on average, committed to eliminating tariffs on approximately 76 per cent of tariff lines, several major economies, particularly Indonesia and Vietnam, either maintained relatively large exclusion lists or offered limited tariff elimination. Moreover, several ASEAN economies already had relatively high shares of MFN duty-free tariff lines before AITIGA entered into force. Consequently, the additional tariff preferences generated by AITIGA were relatively limited in some ASEAN markets, whereas India, with a much lower initial share of MFN duty-free tariff lines, undertook more substantial preferential liberalisation. In practical terms, this asymmetry created relatively greater additional market-access opportunities for ASEAN exporters than for Indian exporters. This partly explains why India's imports from ASEAN expanded more rapidly than its exports following AITIGA. Indeed, some studies with ex-ante simulation had anticipated adverse implications of AITIGA for India's trade balance even before its implementation (see, Bhattacharyya and Mandal, 2010; Ahamed, 2010).

Asymmetric tariff liberalisation alone, however, does not fully explain India's widening trade deficit with ASEAN. The growing deficit also reflects structural differences in domestic demand, resource endowments and production capabilities. India's imports from ASEAN witnessed a marked increase beginning in 2017, rising from US$ 45.29 billion in 2017 to US$ 57.51 billion in 2018, and further to US$ 87.19 billion in 2025. This represents an increase of approximately US$ 41.90 billion over the eight-year period. A closer examination of the composition of imports surge since 2017 suggests that a significant proportion of this surge is driven by India's domestic consumption needs and industrial requirements. Use-based classification of imports shows that intermediate goods accounted for approximately 45 per cent of the increase in India's imports from ASEAN between 2017 and 2025, while capital goods contributed another 41 per cent (Table 6.5). Together, these two categories accounted for nearly 86 per cent of the overall increase (Table 6.5).

Within intermediate goods, the imports of electrical machinery, equipment & parts thereof and mechanical machinery, appliances and parts thereof have witnessed highest increase. Notably, these imports are going into the manufacturing of smartphone and computing equipment's such as laptops, which have been witnessing remarkable growth. In other words, surge in imports of ASEAN is partly driven by emergence of new industrial sectors in India. Similarly, imports of essential commodities, particularly coal and palm oil, are largely driven by India's domestic demand and resource requirements. Mineral fuels and vegetable oils, the two broader product categories that include these commodities, together accounted for approximately one-fifth of India's total imports from ASEAN in 2025. India's dependence on these imports reflects the persistent mismatch between domestic production and consumption requirements, while ASEAN remains an important regional supplier. Therefore, a part of India's widening trade deficit with ASEAN reflects underlying structural characteristics of the Indian economy, including its expanding manufacturing requirements and dependence on essential imported commodities.

Third, and perhaps most contentious, is the possible circumvention of Rules of Origin (RoO) under AITIGA. Seshadri (2022) and Singh (2025) have raised concerns that the sharp increase in India's imports from certain ASEAN economies, particularly Singapore and Vietnam, may partly reflect the routing of third-country goods through ASEAN to obtain preferential tariff treatment. However, an increase in imports at the aggregate level cannot, by itself, be taken as evidence of RoO circumvention. In order to examine this concern more closely, we undertake a preliminary product-level screening of ASEAN exports to India, focusing on three indicators: sudden increases in ASEAN's exports of

Table 6.5: Dissecting India's Import Surge

Products	2017 (US$ billion)	2025 (US$ billion)	Difference (US$ billion)
Import Surge by Use base Classification			
Raw Material	11.57	13.48	1.91
Intermediate Goods	17.61	36.35	18.74
Capital Goods	9.19	26.35	17.16
Consumer Goods	6.89	11.01	4.12
Important Products at HS 2 Digit Level			
Electrical machinery and equipment and parts thereof (HS Chapter 85)	5.30	15.20	9.89
Mineral fuels including Coal and crude oil (HS Chapter 27)	9.09	10.54	1.45
Mechanical Machinery, Appliances and parts (HS Chapter 84)	3.68	9.59	5.91
Vegetable Oils Including Palm oil (HS Chapter 15)	6.88	8.20	1.31

Source: Author's Compilation from UN Comtrade database

selected products, India's share in ASEAN's global exports of these products, and the preferential tariff margins available under AITIGA. The screening identifies products exhibiting unusually rapid export growth from a low initial base, high concentration in the Indian market and positive preferential tariff margins. Although these indicators cannot establish whether individual shipments violate RoO requirements, their combination provides a useful basis for identifying products that warrant closer examination.

Our analysis reveals some striking patterns (Table 6.6). There are ten products for which ASEAN's reported global exports increased sharply from levels in 2017, with India emerging as the main destination, accounting for 85-90 per cent of these exports. More importantly, some of the products exhibiting these unusual trade patterns also feature in documented cases of origin misdeclaration. For example, ASEAN's global exports of stainless-steel waste and scrap increased from US$ 340.37 million in 2017 to more than US$ 575 million in 2025, with India accounting for 90 per cent of these exports. Singapore and Malaysia were the major ASEAN suppliers to India. Interestingly, Singapore Customs reported a case involving false origin declarations for Chinese scrap metal re-exported to India, resulting in a fine of S$ 558,000 (ASEAN Customs Knowledge-Based Service, 2023). Similarly, exports of raw silk increased from US$ 40 million in 2017 to approximately US$ 100 million in 2023 and US$ 106 million in 2025, with India accounting for 95 per cent of ASEAN's global exports of this product in 2025. Vietnam emerged as the principal ASEAN supplier to India. This pattern is particularly noteworthy in light of a case reported by Vietnamese authorities in 2020 involving Chinese silk being relabelled as Vietnamese-origin merchandise for export to India (Viet Nam News, 2020).

An even more striking pattern is observed in precious metals, particularly platinum. ASEAN's reported global exports of unwrought platinum (HS 711011) increased from just US$ 25 million in 2017 to US$ 1.87 billion in 2025, with India's share rising from virtually zero to 97 per cent. Thailand emerged as the principal supplier.

A similar trend is observed for semi-manufactured platinum (HS 711019), where ASEAN's exports increased from US$ 19 million to US$ 854 million, with India accounting for 82 per cent in 2025. Notably, these products also enjoy preferential tariff treatment under AITIGA, with tariff rates of 2.5 and 5 per cent, respectively, compared with an MFN rate of 10 per cent.

We observe similar patterns for several other products, including cold-rolling mills (HS 845522), glassine paper and palladium. For instance, ASEAN's exports of cold-rolling mills increased US$ 3 million in 2017 to US$ 97 million in 2025, with India accounting for 98 per cent of these exports, predominantly supplied by Malaysia. Taken together, these unusual trade patterns, particularly where substantial preferential tariff margins coincide with rapid export growth and exceptionally high concentration in the Indian market, raise legitimate concerns about possible RoO circumvention[2].

Table 6.6: Product-Level Screening of Potential Circumvention under AITIGA

HS Code	Description	ASEAN Global Exports		India's Share in ASEAN Global Exports		Major ASEAN Supplier to India	India: MFN (M) and AITIGA (A) Rate (%)
		2017 (US$ million)	2025 (US$ million)	2017 (%)	2025 (%)		
711011	Platinum, unwrought or in powder form	25.32	1872.53	0	97	Thailand	M: 10 A : 2.5
711019	Platinum, in semi-manufactured forms	18.62	854.42	0	82	Thailand	M: 10 A : 5
720421	Waste and scrap of stainless steel	340.07	575.28	43	90	Malaysia Singapore	M: 2.5 A : 0
390490	Polymers of vinyl chloride or other halogenated olefins, in primary forms	5.65	138.07	6	87	Thailand	M: 5 A : 0
500200	Raw silk "non-thrown"	40.61	106.29	94	95	Vietnam	M: 15 A : 0
845522	Cold-rolling mills for metal	3.81	97.32	0	98	Malaysia	M: 7.5 A : 0
380510	Gum, wood or sulphate turpentine oils	51.76	90.37	84	90	Indonesia Vietnam	M: 7.5 A : 0
711029	Palladium in semi-manufactured forms	1.29	72.37	0	88	Thailand	M: 10 A : 5
480640	Glassine and other glazed transparent or translucent papers	11.31	50.48	54	98	Thailand	M: 10 A : 0
600192	Pile fabrics of man-made fibres, knitted or crocheted	27.9	87.25	0	82	Malaysia	M: 10 A : 5

Source : Author's compilation from UN Comtrade database

6.4. Unrealised Trade Potential

The previous section clearly shows that bilateral trade between India and ASEAN has expanded considerably after the implementation of the AITIGA. Despite this growth, the true potential of trade has not been fully realised. Readily available estimates suggest that against the current actual trade of US$ 123 billion, the bilateral trade potential between India and ASEAN stands at US$ 194 billion (Table 6.7). It implies that only two third of true trade potential has been realised. Notably, unrealised potential lies significantly more in case of Indian exports to ASEAN vis-a vis Indian import from ASEAN. A comparison actual to potential import and export ratio suggest that more than 68 per cent of Import potential has been realised while in case of Indian exports this ratio stands at 54 per cent.

Our own estimates corroborate the existence of high unrealised trade potential. We estimate India's export potential in ASEAN markets using the Trade Possibility Approach[3] (TPA). The TPA estimates bilateral trade potential at the product level by comparing the exporting country's global export supply with the importing country's global import demand, taking the lower of the two as the potential trade value (for details refer, Vashisht, 2024). Unrealised trade potential is then calculated as the difference between estimated potential and actual bilateral trade. To make our estimates more realistic, we apply three competitiveness filters before estimating export potential. First, we use revealed comparative advantage (RCA) to identify products in which India possesses demonstrated export competitiveness. Second, we employ a relative export-price ratio to identify products where Indian exports are potentially price competitive in ASEAN markets. Third, we apply a relative market penetration ratio to exclude products in which India already enjoys a relatively high share of ASEAN's total imports, thereby focusing the analysis on products where significant scope for further market expansion exists. Combining export competitiveness, price competitiveness and existing market penetration with the supply-demand framework of the TPA, this approach provides a more targeted assessment of India's unrealised export opportunities in ASEAN markets.

Our estimates suggest that India's export potential to ASEAN stands at around US$ 77 billion as compared to actual exports of US$ 35.96 billion in 2025. This indicates unrealised export potential of approximately US$ 41 billion, roughly US$ 11 billion more than the gravity-based estimate reported by ITC Trade Map. Nearly two-thirds of the estimated additional potential is concentrated in four sectors. Electrical and mechanical machinery accounts for the largest share at US$ 8.91 billion, followed by chemical and allied products at US$ 7.31 billion, base metals

Table 6.7: India's Export Potential in ASEAN

(US$ billion)

	Actual 2025	Gravity Model Estimates*			Trade Possibility Approach Estimates$	
		Potential	Unrealised	Actual to Potential Ratio	Potential	Unrealised
Exports to ASEAN	35.96	66	30.04	0.54	76.96	41
Imports from ASEAN	87.19	128	40.81	0.68	--	---
Total Trade	123.15	194	70.85	0.63	---	---
Import to Export Ratio	2.42	1.94	1.36	---	---	---

Notes: * ITC trade potential Map, $ Authors' own estimates

Source: Authors' calculation based on data from UN Comtrade

and articles at US$ 5.17 billion, and motor vehicles and parts at US$ 4.97 billion (Table 6.8). Prepared foodstuffs, plastics and rubber, textiles, and animal products also offer sizable opportunities.

6.5. Barriers to Trade

Section 6.4 clearly shows that the volume of actual trade between India and ASEAN has remained way lower than the potential, with particularly significant opportunities for expanding Indian exports to ASEAN in pharmaceuticals, machinery, transport equipment, metals, chemicals, plastics and selected agricultural and food products. The unrealised trade potential could be attributed to a combination of tariff and non-tariff barriers, regulatory requirements and logistics-related challenges which have continued to limit market access despite AITIGA. Some of the major barriers to ASEAN-India trade are listed as follows.

i. Tariff Barriers

Although AITIGA has significantly reduced tariffs on bilateral trade, a substantial proportion of tariff lines remains subject to partial tariff reductions or exclusion from liberalisation. As discussed in Table 6.1, ASEAN member states collectively eliminated tariffs on approximately 76 per cent of tariff lines, with considerable variation across individual economies. Major ASEAN economies such as Indonesia, Vietnam, the Philippines and Thailand have retained relatively large exclusion lists or placed substantial numbers of products under tariff-reduction categories. India has also maintained exclusion lists and other categories

Table 6.8: Sector-wise Distribution of India's Export Potential in ASEAN Markets

Sectors	No. of Tariff Lines at 6-Digit Level	Indicative Additional Export potential (US$ million)
Electrical and Mechanical Machinery	17	8914.86
Products of the Chemical or Allied Industries	19	7309.07
Base Metals and Articles	25	5165.20
Motor Vehicles	4	4968.75
Prepared Foodstuffs	7	3699.39
Plastics and Rubber	10	2764.90
Textiles and Textile Articles	7	2523.38
Live Animals and Animal Products	4	2357.84
Vegetable Products	6	1225.80
Pearls and Precious Stones	3	527.32
Mineral Products	2	508.25
Pulp of Wood	3	373.49
Optical, Photographic, Cinematographic	1	321.79
Footwear	1	259.94
Glass and Glassware	1	109.66
Total	110	41029.64

Source: Authors' calculation based on data from UN Comtrade

of limited tariff liberalisation. Consequently, a significant number of products traded between India and ASEAN continue to face positive tariffs despite the preferential agreement. Notably, the extent of tariff liberalisation under AITIGA has remained relatively limited compared with several other FTAs, India and ASEAN member states, have signed in the recent past. Thus, tariffs continue to constitute an important barrier to realising the full potential of bilateral trade. The implications of these remaining tariff barriers become evident when India's estimated export potential is examined alongside the tariff commitments of Indonesia and Vietnam. In the case of Indonesia, 74.8 per cent of tariff lines in plastics (HS 39) and 91.9 per cent in articles of iron and steel (HS 73) fall under tariff-reduction categories. Similarly, in Vietnam, 73.3 per cent of tariff lines in iron and steel (HS 72) and 90.9 per cent in vehicles and parts (HS 87) remain on the exclusion list. These sectors offer significant unrealised export opportunities for India, but remaining tariffs continue to constrain their realisation. Likewise, India's exclusion lists also restrict ASEAN exports in products where the region possesses considerable export potential.

ii. Non-Tariff Measures

Apart from tariffs, non-tariff barriers (NTBs) also constitute an important constraint to realising the full potential of India-ASEAN trade. Both India and ASEAN member states maintain a range of non-tariff measures (NTMs), including sanitary and phytosanitary requirements, technical regulations, product standards and certification procedures. However, the incidence of these measures varies considerably across countries and sectors. As shown in Tables 6.9 and 6.10, India's overall NTM import coverage ratio stands at 45.52 per cent, compared with 84.76 per cent in the Philippines, 82.76 per cent in Cambodia, 68.95 per cent in Indonesia, 60.24 per cent in Myanmar and 54.96 per cent in Malaysia. The frequency ratios also indicate a relatively higher incidence of NTMs in several ASEAN economies, particularly Cambodia, the Philippines and Indonesia. Nevertheless, some ASEAN economies, including Thailand, Vietnam and Singapore, have lower overall coverage ratios than India. Thus, while NTMs are prevalent on both sides, their incidence is substantially higher in several ASEAN markets.

More importantly, NTM coverage in several ASEAN economies is particularly high in sectors where India possesses significant unrealised export potential. For instance, in machinery and electrical products, coverage ratios reach 100 per cent in Cambodia, 92.78 per cent in the Philippines and 72.77 per cent in Malaysia, compared with 14.40 per cent in India. Similarly, chemicals face coverage ratios of 86.05 per cent in Cambodia, 77.55 per cent in Myanmar and around 69 per cent in Indonesia and the Philippines, against 28.52 per cent in India. In agricultural and food products, NTM coverage is generally high on both sides, often approaching 100 per cent. Although not all NTMs are necessarily trade-restrictive, differences in regulatory standards, certification requirements and compliance procedures can increase transaction costs and undermine the benefits of preferential tariff access under AITIGA. Therefore, addressing non-tariff barriers on both sides, particularly in sectors where India has substantial unrealised export potential, is essential for translating preferential market access into greater bilateral trade.

iii. Logistics Costs

Logistics costs and maritime connectivity constitute another important constraint to realising the full potential of India-ASEAN trade. High freight charges, inefficient port handling, inadequate connectivity and delays in customs clearance increase transaction costs and weaken the competitiveness of traded products, even where preferential tariff access is available under AITIGA. These challenges affect trade in both directions by increasing the delivered cost of goods and reducing the reliability of supply chains. Although India's logistics performance has improved, it continues to lag behind several major economies in the region. According to the World Bank's Logistics Performance Index (LPI) 2023, India ranked 38th among 139 economies, compared with Japan (13th), the Republic of Korea (17th), and China and Australia (19th) (World Bank, 2023). The significance of

Table 6.9: Sector-wise NTM Import Coverage Ratio (CR) in ASEAN Member States and India

(%)

Sector	Brunei	Cambodia	Indonesia	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	India
Animal	98.15	100	100	100	100	100	99.22	98.29	79.17	86.01
Vegetable	99.99	100	99.27	99.58	100	100	96.72	76.14	99.98	99.88
Food Products	100	92.42	98.82	99.31	100	100	95.36	89.36	100	99.83
Fuels	98.6	94.8	96.64	92.05	100	100	99.77	31.12	78.17	75.4
Transportation	52.78	99.92	82.65	28.37	95.41	96.53	36.11	5.11	30.1	40.63
Textiles and Clothing	1.34	100	80.57	14.01	1.57	49.16	1.96	0.38	98.52	100
Hides and Skins	—	18.71	77.82	59.28	4.14	78.59	0.02	0	0	48.8
Chemicals	57.75	86.05	69.64	32.62	77.55	69.23	63.87	39.81	52.97	28.52
Footwear	—	92.08	63.34	25.04	—	98.38	0.03	0	3.49	3.86
Mach and Elec	22.25	100	61.94	72.77	37.95	92.78	7.41	17.71	4.39	14.4
Metals	0.13	0.26	40.46	4.07	3.81	49.61	0.56	14.32	50.58	29.19
Miscellaneous	5.7	50.63	37.53	30.54	7.84	89.34	30.47	13.89	16.13	5.77
Minerals	84.39	0.11	37.41	2.1	100	100	1.92	93.81	33.41	16.49
Stone and Glass	19.24	66.72	29.18	0.59	1.95	67.63	7.77	84.52	42.51	33
Wood	21.36	81.38	25.17	26.92	11.42	67.83	0.94	30.61	51.61	34.83
Plastic or Rubber	4.97	20.39	17.56	0.22	0.55	52.27	13.65	78.98	10.19	10.77
All Import Products	44.47	82.76	68.95	54.96	60.24	84.76	39.3	31.09	37.99	45.52

Source: Authors' own based on the WITS

Table 6.10: Sector-wise NTM Frequency Ratio (FR) in ASEAN Member States and India

(%)

Sector	Brunei	Cambodia	Indonesia	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	India
Animal	97.25	100	100	100	100	100	93.08	95.36	95	87.16
Vegetable	99.02	100	91.77	99.42	100	100	84.76	83.98	99.07	96.86
Food Products	99.46	94.21	99	99.04	100	100	92.65	90.48	100	99.46
Fuels	13.79	86.36	28.21	46.15	100	97.22	41.18	44.74	7.69	13.16
Transportation	44.34	94.44	58.91	14.96	63.87	92.91	36.97	15.75	17.74	62.4
Textiles and Clothing	1.79	100	78.16	11.86	3.2	48.43	0.71	1.14	98.98	100
Hides and Skins	—	62.96	76.56	81.25	44	82.26	1.85	0	0	31.34
Chemicals	22.44	76.57	54.49	28.06	73.39	54.47	50	22.15	33.24	37.62
Footwear	—	63.04	53.19	31.91	—	87.23	2.13	0	25.53	25.53
Mach and Elec	7.56	100	46.04	40.86	15.81	95.46	12.43	6.74	3.37	14.9
Metals	1.27	3.46	30.47	7.04	18.59	47.8	3.99	14.85	35.57	18.28
Miscellaneous	7.53	54.21	36.65	33.9	9.85	77.34	17.49	13.28	13.6	8.29
Minerals	29.69	9.26	13.4	4.85	98.84	100	11.25	86.73	40.86	28.13
Stone and Glass	4.05	12.16	35.6	5.76	17.39	51.08	4.26	22.92	37.7	21.05
Wood	38.42	88.6	46.35	45.92	29.86	70.82	2.69	36.05	47.64	9.48
Plastic or Rubber	1.02	32.16	27.01	0.95	11.54	60.19	7.11	65.88	8.53	16.59
All Import Products	25.18	72.85	56.33	36.6	38.44	71.86	27.79	29.63	47.04	43.71

Source: Authors' own based on WITS

transport costs is also evident from the ad valorem sea freight estimates presented in Table 6.11. Across ten product chapters with substantial unrealised trade potential, the average freight-cost ratio for shipments from India to ASEAN stood at 14.48 per cent in 2021, compared with 10.47 per cent for Japan, 11.35 per cent for the Republic of Korea, 9.45 per cent for Hong Kong and 9.99 per cent for Taiwan. The differences are particularly pronounced in pharmaceuticals, machinery and electrical equipment. For example, India's freight-cost ratio for electrical machinery was 31.80 per cent, compared with 22.40 per cent for Japan and 14.50 per cent for the Republic of Korea. Although these estimates capture only one direction of bilateral trade and are influenced by product values and shipment characteristics, they illustrate that transport costs between India and ASEAN continue to be higher than other competitors, thereby hampering the trade flow between India and ASEAN.

6.6. Conclusion and Way Forward

India-ASEAN merchandise trade has expanded substantially since the implementation of AITIGA, rising from US$ 53 billion in 2010 to over US$ 123 billion in 2025. Nevertheless, this expansion has been uneven, resulting in a marked increase in India's merchandise trade deficit. The analysis in this chapter suggests that this widening deficit reflects both structural economic factors and limitations in the design and implementation of AITIGA. While India's growing dependence on essential imports from ASEAN, particularly palm oil and coal, has contributed significantly to the imbalance, limited effective market access for Indian exports has also shaped bilateral outcomes. Furthermore, concerns regarding the potential circumvention of Rules of Origin underscore the need to strengthen implementation and monitoring mechanisms.

Despite these challenges, substantial opportunities

Table 6.11: Ad Valorem Sea Freight Costs of Exports to ASEAN from India and Selected Competing Economies across High-Potential Product Chapters

2-digit HS	Description	Ad Valorem Freight Costs (%) (2021)					
		India	Japan	South Korea	Australia	Hong Kong	Taiwan
30	Pharmaceutical Products	20.60	9.20	13.90	11.80	13.00	14.80
84	Nuclear Reactors and Boilers	23.90	18.00	17.40	18.60	13.60	17.60
87	Vehicles Other Than Railway	8.20	8.50	10.70	9.30	7.00	6.20
10	Cereals	8.00	4.30	5.90	11.40	3.50	5.50
73	Articles of Iron or Steel	14.70	14.80	17.10	16.10	11.20	14.90
72	Iron and Steel	7.60	7.50	6.80	11.70	10.60	6.40
39	Plastic and Articles thereof	8.30	7.30	7.60	9.00	8.50	7.50
85	Electrical Machinery and Equipment and Parts Thereof	31.80	22.40	14.50	22.80	15.80	14.60
28	Inorganic Chemicals	15.80	10.60	14.20	19.70	8.30	10.60
2	Meat and Edible Meat	5.90	2.10	5.40	4.40	3.00	1.80
Average Ad Valorem Freight Costs of Top 10 chapters (%)		**14.48**	**10.47**	**11.35**	**12.08**	**9.45**	**9.99**

Source: Authors' compilation based on UNCTAD Trade-and-Transport Dataset. Latest data refers to 2021.

remain. Available estimates indicate that India-ASEAN trade potential stands at approximately US$ 194 billion against actual trade of US$ 123 billion in 2025. Unrealised potential is particularly significant for Indian exports, with product-level estimates identifying additional export opportunities worth roughly US$ 41 billion concentrated in machinery, chemicals, metals, motor vehicles, and processed food products. However, realizing this potential requires addressing persistent barriers. Although AITIGA has reduced tariffs substantially, many lines remain subject to partial liberalisation or exclusion, and non-tariff measures remain widespread in sectors where India holds export potential. These barriers, compounded by high logistics costs, require urgent policy attention.

The ongoing review of AITIGA presents an important opportunity to address these shortcomings and establish a more balanced, commercially meaningful framework for the ASEAN-India trade:

Deeper Tariff Liberalisation: The review should pursue deeper tariff cuts in sectors characterised by substantial unrealised trade potential.

Strengthened Rules of Origin: The RoO framework should be reinforced to facilitate legitimate trade while preventing misuse. Enhanced origin verification procedures, wider adoption of electronic certification systems, stronger customs cooperation, and product-specific rules can improve agreement integrity.

Regulatory Cooperation and NTM Reduction: AITIGA 2.0 should move beyond tariff reductions to establish effective mechanisms for regulatory transparency, harmonisation of standards, conformity assessment, mutual recognition arrangements, and import simplification particularly in pharmaceuticals, food products, machinery, and electrical equipment.

Trade Facilitation and Logistics: Enhancing cooperation in port modernisation, maritime connectivity, customs digitisation, and electronic trade documentation will help reduce transaction costs and improve supply-chain efficiency. Economic and technical cooperation provisions should also promote business matching, supplier development, industrial partnerships, and MSME participation in regional production networks.

Ultimately, the review of AITIGA should be viewed not merely as an exercise in tariff reform, but as an opportunity to address the broader structural, regulatory, and operational constraints that have limited the agreement's effectiveness.

Endnotes

1 It should be noted that several major ASEAN economies already maintained a relatively high proportion of MFN duty-free tariff lines when AITIGA entered into force. For instance, 63.80 per cent of Malaysia's tariff lines were already duty-free, followed by Vietnam (32.80 per cent), Indonesia (24.00 per cent) and Thailand (18.30 per cent). In comparison, only 3.20 per cent of India's tariff lines were MFN duty-free. This means India got no new market access on those tariff lines which were already MFN duty free at the time of AITIGA EIF. (ASEAN Secretariat, 2009; WTO, n.d.).

2 These findings should be interpreted as indicators of potential risk rather than direct evidence of violations. Nevertheless, the analysis highlights the need for stronger origin verification and customs cooperation under AITIGA

3 The TPA estimates are restricted to India's exports to ASEAN. A corresponding estimation of import potential has not been undertaken due to limitations in the availability and comparability of product-level trade data for certain ASEAN Member States, particularly differences in quantity measurement units that constrain the calculation of comparable unit values. The two approaches employ different methodologies, and their estimates should be interpreted accordingly.

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7

Deepening Value Chains: Strategies for FTAs and ASEAN–India GVC Integration in an Era of Overlapping Trade Architectures

Rahul Sen and Sadhana Srivastava

7.1. Introduction

The density of bilateral economic relations between ASEAN and India have intensified in its strength and dimensions[1] since 1991, with India launching its Look East policy (LEP) and subsequently, the Act East Policy (AEP) in 2014.[2] Having progressed from dialogue partners to summit-level partners and, in 2012, strategic partners, ASEAN and India have gained further momentum over the past decade through two important bilateral agreements. These include the ASEAN India Trade in Goods Agreement (AITIGA) that has been in effect since 2010, and more recently, the ASEAN-India Trade in Services and Investment Agreements (AITSIA) that has been in force since July 2015.[3]

Despite more than three decades of institutionalised dialogue and fifteen years of trade liberalisation under the AITIGA, the bilateral economic relationship over the past five years has grown modestly, with bilateral trade growing from 110 billion to US$ 128 billion since 2021-22. India's exports to ASEAN reached US$ 38.4 billion in FY2025–26 while its imports from the same were US$ 90 billion, a deficit of nearly US$ 51.6 billion[4]. This represents a structural asymmetry in this important bilateral trade relationship that has widened, since AITIGA entered into force in 2010.

As international trade becomes increasingly fragmented across global value chains (GVCs)[5] with countries participating in specific stages of production, free trade agreements (FTAs) have taken on greater importance in deepening GVC trade. Zhang et al. (2021) find that the depth of an FTA matters: its core clauses have a positive effect on GVC trade. Their study also shows that differences in development levels among FTA members, and in the structure of the agreements themselves, can produce asymmetric and heterogeneous effects on GVC exports. In particular, WTO-X clauses, which address behind-the-border measures, tend to have a stronger impact on members' GVC exports.

Empirically, Asia's rapid GVC expansion since 2000 correlates strongly with the proliferation of FTAs/PTAs. ADB (2025) noted that the number of intraAsian PTAs rose from 4 in 1990 to 77 in 2023, driven partly by the need for higher policy coordination required by GVCs. These agreements reduce trade costs, harmonize rules of origin, liberalize services, and facilitate investment, enabling firms to fragment production across borders and embed ASEAN economies into wider East Asian production networks.

In the Indian context, Mohanty (2024) tracking GVC structure across India's 15 major trade agreements over 2000 and 2023, revealed that FTA partners have performed only marginally better than non-FTA partners in terms of GVC participation, technology-intensive trade, and market access for small and medium enterprises. This, therefore, raises fundamental questions about the design adequacy of India's existing trade architecture with ASEAN especially with respect to its impact on facilitating GVC and supply chain led trade.

The above challenge is compounded by the profound transformation of the regional trade architecture since 2019 in Asia. Three developments have reshaped the trade architecture landscape in which ASEAN–India economic relations have evolved. First, the Regional Comprehensive Economic Partnership (RCEP), which India chose to opt out from in November 2019, entered into force in January 2022, creating the world's largest trade bloc encompassing 15 member states and accounting for approximately 30 per cent of global GDP and world population. Second, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) has deepened and expanded, welcoming the UK in 2024, consolidating a high-standards agreement covering digital trade, services, investment, and competition policy. Third, ASEAN has advanced negotiations on the Digital Economy Framework Agreement (DEFA), projected to be the world's first region-wide binding agreement on digital economy governance, with ASEAN's digital economy forecast to reach US$ 2 trillion by 2030.

The cumulative effect of these developments requires a strategic assessment for India. As its regional partners deepen mutual commitments through RCEP, CPTPP, and DEFA, India risks operating from outside an increasingly integrated regional production architecture. The strategic stakes are not merely economic. NITI Aayog, has more recently acknowledged that India has not captured this opportunity to the extent possible a candid admission that domestic policy distortions, tariff structures, and negotiating postures have constrained the country's GVC ascent.[6]

This strategic reckoning has been accelerated by a broader transformation of the global trading environment. The rising trade tensions involving US and China, the COVID-19 pandemic's exposure of concentrated supply chain dependencies, escalating US tariff actions in 2025 that raised import duties on India to 50 per cent in 2025 (but later deemed illegal in US courts in 2026, and the effective marginalisation of the WTO's dispute settlement function have collectively elevated supply chain resilience to the top of both corporate and governmental agendas.[7]

In this environment, FTAs have acquired a strategic function that extends well beyond conventional trade liberalisation: they serve as risk mitigation instruments, providing firms and governments with the predictable, rules-based market access that unilateral tariff volatility cannot offer. India has responded accordingly. Having approached FTAs with notable caution for much of the preceding decade, New Delhi has since 2022 concluded agreements with the UAE, Australia, EFTA, the UK, Oman, and New Zealand. This strategic move signals a fundamental reorientation, with FTAs increasingly deployed as instruments of geopolitical confidence-building, supply chain diversification, and strategic influence in a fragmenting world order (Bhowmick, 2025).[8]

The cumulative result of this FTA proliferation produces a configuration that demands explicit analytical attention. By end of 2025, India has concluded preferential trade agreements with all fifteen RCEP member states except China, creating a "RCEP minus China" architecture. This network encompasses AITIGA covering all 10 ASEAN members, bilateral comprehensive economic partnership agreements with Japan and South Korea, the Economic Cooperation and Trade Agreement with Australia, and the recently signed New Zealand FTA in April 2026. With India's share of total trade with its eight post-2020 FTA partners rising from 22.4 per cent in FY2020–21 to 28.7 per cent in FY2024–25, and growing more rapidly

than India's total exports, the early aggregate signals are encouraging (Sharma, 2026).[9]

Against the above backdrop, this chapter examines the evolution and deepening of value chain networks between ASEAN and India since 2019, assessing sectoral complementarities and India's participation in regional and global value chains under the existing FTA framework. It provides a strategic evaluation of how overlapping trade architectures, such as RCEP, CPTPP, and DEFA, influence ASEAN–India value chain integration, before identifying policy options for India and the challenges and opportunities they present. The analysis is grounded in value-added trade data, GVC participation indices, and sector-specific case studies across electronics, pharmaceuticals, automotive, textiles, and digital services (ERIA, 2024).

The chapter proceeds as follows. Section 7.2 establishes the analytical framework linking FTA design to GVC participation, drawing on value-added trade theory and the distinction between deep and shallow integration. Section 7.3 provides a brief data analysis and overview of ASEAN–India GVC trade since 2019, including country-level analysis of where integration has strengthened and where it has stagnated. Section 7.4 maps the overlapping trade architecture and India's strategic position within it, with focused treatment of RCEP, CPTPP, IPEF, and DEFA. Section 7.5 presents sector-specific case studies. Section 7.6 diagnoses structural bottlenecks; regulatory, infrastructural, and political economy constraints. Section 7.7 proposes policy options and strategic recommendations and concludes the chapter.

7.2. Analytical Framework: FTAs, GVCs, and the Trade Architecture

Can FTAs old and new, bilateral and regional serve as architecture for deeper GVC integration, and what does this mean for India's current trade architecture? The foundational GVC framework, developed by Koopman, Wang, and Wei (2014) and refined by Borin and Mancini (2019), disaggregates gross exports into domestic value added absorbed abroad, re-exported value added, and double-counted terms, distinguishing pure GVC trade from conventional trade in final goods.

Two modes of participation matter for the ASEAN–India relationship. Forward participation occurs when a country exports inputs incorporated into another country's exports (upstream positioning). Backward participation occurs when a country uses imported inputs in its own export production (downstream positioning).

India's GVC profile compared to that of ASEAN, has been predominantly forward oriented, with its participation rate at 16.3 per cent compared to 13.9 per cent for ASEAN as of 2024. While its backward participation rose from roughly 8 per cent to 17 per cent of gross exports between the early 2000s to 2024, it remains well below ASEAN levels (around 30 per cent), where economies are deeply embedded in production networks centred on China and, increasingly, intra-ASEAN chains (Banga, 2022[10]; Tewari and Veeramani, 2016). Critically, greater backward participation generates higher gross exports, domestic value added, and employment than domestic-content or forward-only strategies. Veeramani and Dhir (2022) analysing 112 Indian sectors confirmed that restrictions on imported intermediates directly cost India's GVC competitiveness, at the cost for protecting domestic producers.

Prakash (2024) offered the most comprehensive bilateral assessment. It found that India is gaining ground, adding more value while reducing reliance on foreign inputs, driven by sustained FDI. ASEAN remains more deeply integrated overall but heavily dependent on China, particularly for imports. India has steadily improved its position, albeit unevenly across sectors[11]. There is greater evidence of progress in global service value chains, especially in the information and communication technology (ICT) sector, where India has created more than 7 per cent of global value added, only behind China in emerging markets.

7.2.1. From Shallow to Deep Integration: The FTA Design Spectrum

Not all FTAs drive GVC integration equally. Shallow/deep distinction is the core lens for understanding AITIGA's limitations (Lawrence, 2000). Shallow agreements remove border barriers (tariffs, quotas) but leave behind-the-border policies those shaping investment, production costs, and market access intact. Deep agreements address the regulatory, services, investment, and IP frameworks that determine whether firms can profitably fragment production across borders. Baldwin (2013) framed this historically: the first unbundling separated consumption from production via falling transport costs; the second unbundling underpins the GVC revolution, which separated production into tasks coordinated via ICT, requiring deep regulatory convergence that shallow agreements were never built for.

Along this spectrum, CPTPP represents Asia's deepest integration architecture, with binding commitments on services, investment, IP, procurement, competition, SOEs, labour, and digital trade (including a permanent ban on e-transmission customs duties and strong data-flow protections). RCEP sits in the middle: broader membership, lower tariff liberalisation, no labour/environment chapters, and e-commerce provisions exempted from dispute settlement. AITIGA, governing ASEAN–India goods trade, sits at the shallow end goods-only, with no services, investment, or digital trade chapters, reflecting a design that predates both the GVC revolution and digital services as a coordination mechanism.

7.2.2. Rules of Origin as GVC Enablers or Inhibitors

Rules of Origin (RoOs) are the primary mechanism through which FTA design enables or inhibits GVC integration. Restrictive RoOs requiring high domestic/bilateral content discourage sourcing from the most competitive global suppliers; permissive RoOs with broad cumulation enable optimal regional sourcing while preserving preferential access.

The proliferation of overlapping Asian FTAs has produced Bhagwati's "spaghetti bowl"—the Asian "noodle bowl". Each ASEAN+1 agreement carries distinct RoOs and certification requirements (Basu Das et al., 2016). ADB (2011) found only 22 per cent of exporters in Japan, Korea, Singapore, and Thailand used preferential arrangements at all, reflecting compliance costs that, for SMEs, can exceed the value of tariff preferences.

RCEP's key contribution is a partial fix: a common RoO platform across fifteen economies, with ~40 per cent regional value content thresholds and self-certification, permits cumulation across the bloc, letting a Vietnamese manufacturer source from China, Japan, or Malaysia and still qualify for duty-free access. As India has opted out of this agreement, the implications are that Indian inputs don't qualify for the RoO cumulation; an ASEAN manufacturer using Indian components must separately satisfy AITIGA rules while managing RCEP requirements for RCEP markets, leading to additional costs of compliance[12].

7.2.3. GVC Governance Frameworks and Their FTA Implications

Gereffi and Fernandez-Stark's governance framework distinguishes buyer-driven from producer-driven chains, and five governance types from market-governed to hierarchical (Gereffi and Fernandez-Stark, 2019). In buyer-driven chains (apparel, electronics assembly), RoOs, standards harmonisation, and tariff-free component access are the key levers. In producer-driven chains (automotive, aerospace, semiconductors), investment protection, IP commitments, and supply-chain digitalisation matter as much as tariffs.

A third category, digital value chains, is where AITIGA's gaps are most acute. Park et al. (2021) attributed much of RCEP's projected income gains to regulatory convergence rather than tariff liberalisation itself. ASEAN's DEFA negotiations, covering cross-border data flows, digital payments,

e-invoicing, and digital identity, represent the region's most advanced GVC-enabling architecture. The Asia Foundation (2024) assessment of digital trade notes that CPTPP's digital trade text has become the de facto regional standard, making AITIGA's absence of digital provisions increasingly anachronistic.[13]

The framework yields a clear proposition: an FTA's capacity to deepen GVC integration depends on four dimensions, services/investment provisions, facilitative ROOs, digital trade provisions, and regulatory harmonisation. AITIGA scores poorly across all four.

7.2.4. Geopolitical Disruption and the New Strategic Logic of FTAs

A final dimension, growing since 2018, is geopolitical transformation. Hyper-globalisation has given way to "slowbalisation" (European Commission, 2024[14]); exhausted gains from China's manufacturing integration, GFC fallout, rising protectionism, and pandemic-exposed supply chain fragility. This has produced measurable structural change. Gopinath et al. (2024) analysis found roughly 12 per cent declines in trade flows and 20 per cent in FDI flows between geopolitically distant blocs since the Russia–Ukraine war, through "connector" countries,several ASEAN members, India, Turkey, are gaining importance without necessarily reducing strategic dependence. UNCTAD (2025) identified 2025 as the century's highest point of trade policy uncertainty, with US tariff actions threatening to slow global growth to 2.3 per cent[15].

FTAs are now evaluated less as efficiency instruments than as tools for supply chain resilience, geopolitical alignment, and investment attraction. WTO (2026)[16] analysis confirms that countries with deep trade agreement networks attract more supply-chain investment.

Three implications follow: FTA depth matters as much as FTA count, given India's shallow-to-medium "RCEP minus China" network; the noodle bowl actively constrains India–ASEAN GVC integration, a problem RCEP membership would substantially ease; and the geopolitical conjuncture is both threat and opportunity; diversification away from China-centric chains creates demand India could capture, but only with deeper GVC-enabling institutional architecture.

Table 7.1: India's Trade with ASEAN, FY 2019–20 to FY 2025–26

	Exports (US$ billion)	Imports (US$ billion)	Total Trade (US$ billion)	Trade Balance (US$ billion)	Share of ASEAN in India's Exports (%)	Share of ASEAN in India's Imports (%)
2019-20	31.5	55.4	86.9	-23.82	10.1	11.7
2020-21	31.5	47.4	78.9	-15.94	10.8	12.0
2021-22	42.3	68.1	110.4	-25.8	10.0	11.1
2022-23	44.0	87.6	131.6	-43.6	9.8	12.2
2023-24	41.2	79.7	120.9	-38.5	9.4	11.7
2024-25	39.0	84.2	123.1	-45.2	8.9	11.7
2025-26	38.4	90.0	128.4	-51.6	8.7	11.6

Source: Government of India (2026), Ministry of Commerce and Industry TRADESTAT database https://tradestat.commerce.gov.in/

7.3. Evolution of ASEAN–India GVC Trade Since 2019: An Overview

7.3.1. Aggregate Trade Flows: Expansion Without Integration

ASEAN–India trade since 2019 while showing aggregate expansion, has been accompanied by asymmetries. As observed in Table 7.1 bilateral trade expanded from US$ 86.9 billion in FY2019–20 to US$ 128.4 billion in FY2025–26, at a CAGR of about 8.1 per cent. However, this trade expansion has been accompanied by a trade deficit widening from US$ 23.8 billion to US$ 51.6 billion over the same period, meaning that for every additional dollar of trade generated, approximately US$ 1.5 accrued to ASEAN as surplus. ASEAN's share of India's export basket, at 8.7 per cent in FY2026, has declined since 2019. The COVID-19 shock during FY2020–21 caused a sharp decline, with total trade fell declined to US$ 78.9 billion, followed by a strong recovery to US$ 110 billion in FY2021–22, as regional supply chains were partially re-routed and India's strong rebound in pharmaceutical exports and commodities drove growth.

The composition of trade flows in Tables 7.2 and 7.3 by top 10 products of exports and imports reveals the asymmetry further. India's top ten exports to ASEAN consist of fuels, machinery, meat, ships and boats, organic chemicals, and vehicles which collectively account for nearly 62 per cent of its total exports to the region, a concentration that reflects shallow diversification. On the import side, ASEAN's exports to India are dominated by fuels, electronics, vegetable oils, machinery, and iron and steel, reflecting ASEAN's role as a supplier of both

Table 7.2: Top 10 Exports of India to ASEAN: 2025-26

HS Code	Commodity	2025-26 (US$ million)	Growth (%)	Share in Total Exports to ASEAN (%)
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	6.61	-25.03	17.2
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.	4.72	3.80	12.3
02	Meat and edible meat offal.	2.10	20.37	5.5
29	Organic chemicals	1.75	-16.36	4.6
89	Ships, boats and floating structures.	1.70	-21.34	4.4
87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof.	1.55	-4.33	4.0
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers,and parts.	1.55	14.45	4.0
71	Natural or cultured pearls,precious or semiprecious stones,pre.Metals,clad with pre.Metal and artcls thereof;imit.Jewlry;coin.	1.46	12.78	3.8
30	Pharmaceutical products	1.42	9.14	3.7
76	Aluminium and articles thereof.	1.15	41.19	3.0
	Total	38.42	-1.40	62.5

Source: Government of India (2026), Ministry of Commerce and Industry TRADESTAT database https://tradestat.commerce.gov.in/

Table 7.3: Top 10 Imports of India from ASEAN: 2025-26

HS Code	Commodity	2025-2026 (US$ million)	Growth (%)	Share in Total Imports from ASEAN (%)
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers,and parts.	16.0	21.36	17.8
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.	10.6	-16.67	11.8
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.	10.1	15.98	11.3
15	Animal or vegetable fats and oils and their cleavage products; pre. Edible fats; animal or vegetable waxes.	9.5	14.61	10.6
71	Natural or cultured pearls,precious or semiprecious stones,pre.Metals,clad with pre.Metal and artcls thereof;imit.Jewlry;coin.	6.2	18.95	6.9
39	Plastic and articles thereof.	4.1	7.69	4.5
72	Iron and steel	3.7	-5.02	4.1
29	Organic chemicals	3.3	-8.22	3.7
90	Optical, photographic cinematographic measuring, checking precision, medical or surgical inst. and apparatus parts and accessories thereof;	2.2	7.38	2.4
38	Miscellaneous chemical products.	2.0	5.99	2.2
	Total	90.0	6.91	75.3

Source: Government of India (2026), Ministry of Commerce and Industry TRADESTAT database https://tradestat.commerce.gov.in/

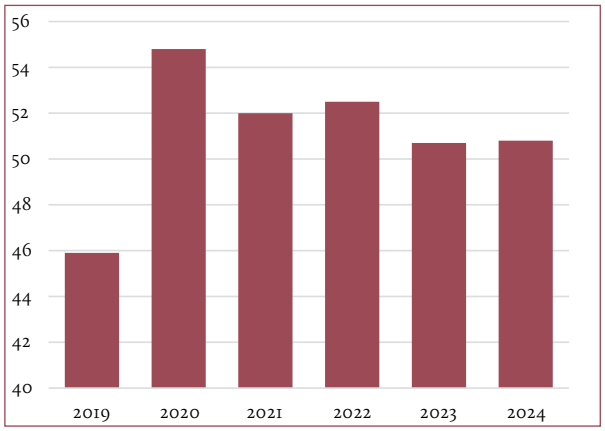
commodities and manufactured intermediates to the Indian economy[17]. While there's evidence of GVC linkages through exports and imports in three HS 2 category manufacturing exports (27, 84 and 85), the value of imports from ASEAN are far higher in these categories than that of exports to that region, largely contributing to the increasing bilateral trade deficit.

7.3.2. GVC Participation: What the Value-Added Data Reveals

Gross trade statistics obscure more than they reveal about GVC integration. The appropriate lens is value-added decomposition, which evaluates how much of each country's exports consist of domestically generated value, foreign inputs, and what share of domestic output is embedded in other countries' export supply chains. Figures 7.1 and 7.2 summarise the shares of GVC related value-added exports for both India and ASEAN. This separates out the component of exports of both countries that are not related with direct consumption.

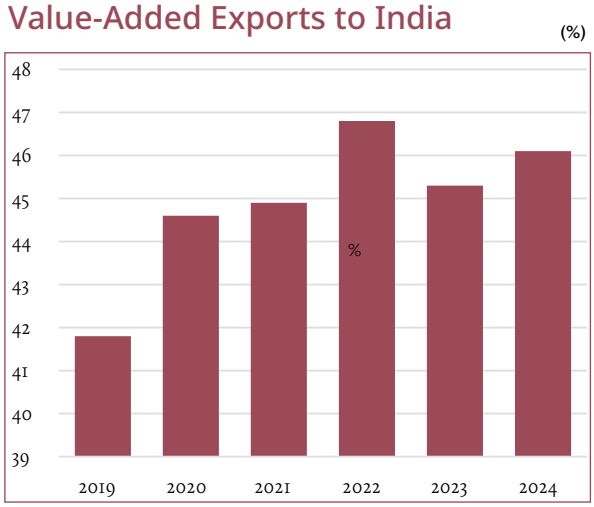
Compared to 46 per cent in 2019, 50.8 per cent of India's gross exports to ASEAN was attributable to GVCs in 2024 (Figure 7.1). More than half of this (28.2 per cent) was accounted for by India's DVA embedded in ASEAN's re-exports of intermediate exports to third economies (or forward linkages), followed by 12.5 per cent that reflected FVA embedded in India's gross exports to ASEAN (backward linkages). 8.9 per cent were the Double-counted Value due to repeated border crossings, while 1.2 per cent was India's DVA embedded in South-East Asia's re-exports of intermediate exports back to India (returned domestic value added). This confirms that over 2019-

Figure7.1: Share of India's GVC-Related Value-Added Exports to ASEAN



Source: UNESCAP (2026)

Figure 7.2: Share of ASEAN's GVC-Related Value-Added Exports to India



Source: UNESCAP (2026)

2024, India's GVC related exports to ASEAN have increased its share, and it has been largely dominated by forward linkages.

Compared to 42 per cent in 2019, 46.1 per cent of ASEAN's gross exports to India was attributable to GVCs in 2024. About 11.8 per cent was accounted for by ASEAN's DVA embedded in India's re-exports of intermediate exports to third economies (forward linkages). 28.5 per cent reflected FVA embedded in ASEAN's gross exports to India (backward linkages). Here, 5.7 per cent were the Double-counted Value due to repeated border crossings. Therefore, in contrast to India, ASEAN's GVC related exports to India were dominated by backward linkages.

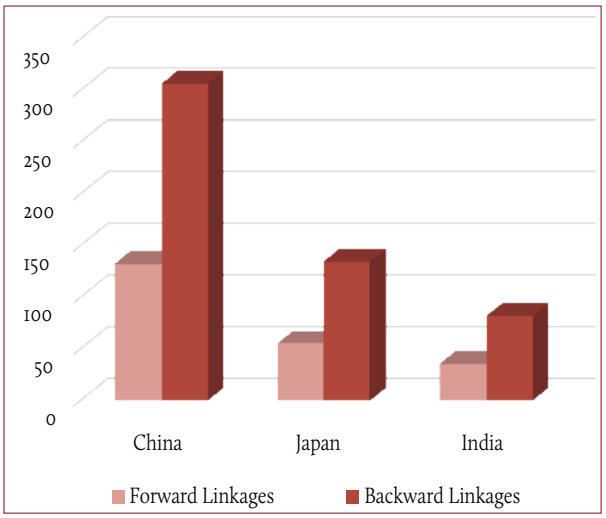
Table 7.4: GVC Participation (as per cent of Gross Exports)

	Forward Linkages (%)		Backward Linkages (%)	
	India	ASEAN	India	ASEAN
2019	14.4	13.6	15.1	27.8
2020	16.7	13.5	13.8	28.9
2021	15.9	13.6	16.8	30.9
2022	15.0	13.6	18.4	30.9
2023	16.5	13.8	16.5	29.3
2024	16.3	13.9	17.0	29.6

Source: UNESCAP (2026)

Table 7.4 compares the forward and backward GVC participation rates for both ASEAN and India over 2019-2024. India's forward participation as a share of its gross exports increased from 14.4 per cent to 16.3 per cent over this period, while its backward participation, also increased marginally to about 17 per cent. Compared with ASEAN, India's backward GVC participation has been lower by around 12 per cent over the entire period, suggestive of the fact that ASEAN sources a significant amount of imported intermediate inputs in its exports compared to India. Figure 7.3 shows that ASEAN's value-added trade

Figure 7.3: GVC Linkages of ASEAN with its Major Trading Partners



Source: UNESCAP (2026)

involving backward linkages with India was worth US$ 82.3 billion, a quarter of that of its strongest GVC linked trading partner, China. A similar trend is also observed in case of forward linkages.

How have ASEAN and India contributed to each other's export production in terms of forward linkages over 2019-2024? India's contribution to export production in ASEAN-6 was greater than that of ASEAN-6 in India and nearly doubled in value over 2019-2024 to 18.6 billion (13.6 per cent of the total). In contrast, ASEAN's contribution to export production in India as of 2024 was 11.1 billion (3.6 per cent of the total) (Table 7.5). This confirms that India's forward linkages in terms of its inputs being used by ASEAN-6 in their global exports was stronger. The data also shows that even through the ASEAN-India FTA was in force during this period, did not lead to a strong expansion in bilateral forward linkages in terms of GVC trade. Figure 7.4 shows the individual country contributions, which shows that India's forward linkage led GVC trade as of 2024 was primarily driven by Singapore, with a value of US$ 9.5 billion (51.1 per cent), followed by Thailand with a value of US$ 3.2 billion (17.2 per cent) and Vietnam (value US$ 2.2 billion (11.8 per cent).

How have ASEAN and India contributed to each other's foreign value added (FVA) and use of imported intermediate inputs in terms of backward

Table 7.5: Contribution in GVC to Export Production for Third Parties

(%)

Year	ASEAN's Contribution to Export Production in India (FL)		Year	India's Contribution to Export Production in ASEAN-6 (FL)	
	(US$ billion)	Share (%)		(US$ billion)	Share (%)
2019	7.3	3.3	2019	8.96	11.6
2020	5.2	2.6	2020	15.35	18.3
2021	8.2	3.4	2021	13.03	12.1
2022	14.4	5.0	2022	16.36	13.9
2023	10.7	3.8	2023	17.8	13.7
2024	11.1	3.6	2024	18.6	13.6

Source: UNESCAP (2026)

Table 7.6: Contribution in GVC in terms of Foreign Value-Added

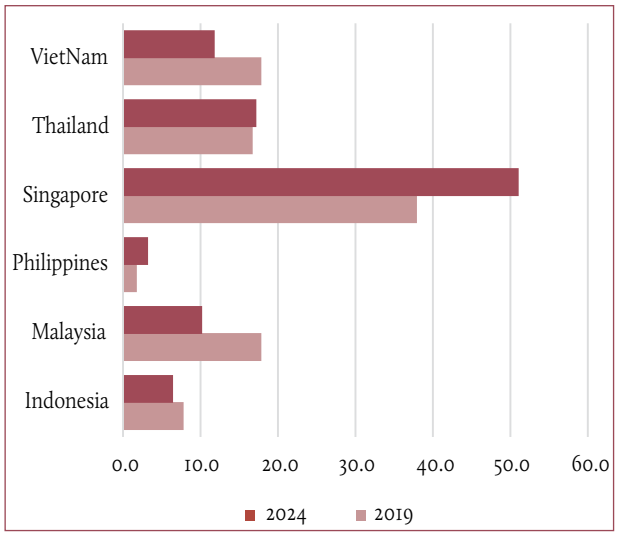
(%)

Year	ASEAN's Contribution to FVA in India		Year	India's Contribution to FVA in ASEAN-6	
	(US$ billion)	Share of ASEAN-6 in India's FVA (%)		(US$ billion)	Share of India in ASEAN FVA (%)
2019	6.1	8.2	2019	8.8	2.0
2020	4.4	7.0	2020	13.6	3.3
2021	6.9	6.4	2021	12.9	2.4
2022	11.4	8.4	2022	16.2	2.6
2023	8.6	7.3	2023	16.6	2.9
2024	9.1	7.0	2024	17.5	2.8

Source: UNESCAP (2026)

Figure 7.4: Share of Individual Countries in India's Contribution to Export Production in ASEAN-6

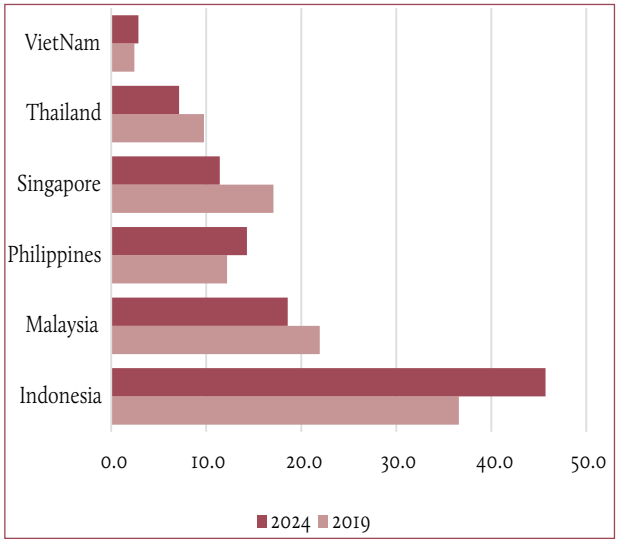
(%)



Source: Compiled by authors from UNESCAP (2026)

Figure 7.5: Share of Individual Countries in their Contribution to India's FVA

(%)



Source: Compiled by authors from UNESCAP (2026)

linkages over 2019-2024? Table 7.6 shows that India's contribution to FVA in ASEAN-6 was also higher than that of ASEAN-6 in India and nearly doubled in value over 2019-2024 to 17.5 billion, although it was only 2.8 per cent of the total. In contrast, ASEAN's contribution to FVA in India as of 2024 was 9.1 billion (7 per cent of the total). This confirms that India's backward linkages in terms of its inputs being used by ASEAN-6 in their global exports was also stronger. Although ASEAN-India FTA was in force during this period, it led to a moderate expansion in backward linkages in favour of India's contribution to ASEAN's GVC trade. Figure 7.5 shows the individual country contributions, which shows that India's backward linkage led GVC trade as of 2024 was primarily driven by Indonesia, with a value of US$ 4.2 billion (45.7 per cent), followed by Singapore with a value of US$ 1.7 billion (18.6 per cent) and Thailand (US$ 1.3 billion (11.4 per cent).

7.3.3. Sector-Level Analysis: GVC Positioning of India and ASEAN

Sector 1: Electronics and Semiconductors: Assembly Integration Without Component Depth

India's electronics sector, one of the top products in its bilateral trade with ASEAN (Tables 7.2 and 7.3) has been on a rising export trajectory since 2019. Total electronics exports grew from approximately US$ 11 billion in FY2019–20 to US$ 29.1 billion in FY2023–24 and a record US$ 38.6 billion in FY2024–25, with smartphone exports growing 45 per cent year-on-year driven by Apple and Samsung's PLI-backed expansions. In the April–November 2024 period, electronics exports surged 27.4 per cent, moving the sector from sixth to third place in India's export rankings. However, this growth masks a structural GVC limitation. ASEAN's electronics ecosystems[18], is deeply integrated with each other and with East Asia, including RCEP members, whose key feature is common rules of origin. India's electronics sector, by contrast, remains predominantly an assembler of final devices, sourcing semiconductors, displays, passive components, and camera modules from ASEAN members who are themselves operating within the RCEP architecture. India's semiconductor consumption is projected at US$ 70 billion by 2026, almost entirely import-dependent, while its own chip fabrication capacity remains in early stages.

Sector 2: Pharmaceuticals — India's Strongest Forward GVC Linkage, Undermined by Upstream Dependency

Pharmaceuticals represent India's one of the stronger forward GVC integration sectors with ASEAN. India's total pharmaceutical exports grew from US$ 19.1 billion in FY2018–19 to US$ 27.9 billion in FY2023–24, a 46 per cent increase, with India's share of global generic drug supply stable at 20 per cent. The ASEAN pharmaceutical market, valued at US$ 43.9 billion in 2023 and projected at US$ 65.6 billion by 2028 at an 11 per cent CAGR, provides a natural destination for Indian APIs and generic formulations, both driven by cost competitiveness and by post-pandemic shifts in procurement policy toward source diversification.

However, India also imports approximately US$ 4.5 billion in APIs and bulk drugs annually, of which approximately 70 per cent originates from China. India's forward GVC participation in pharmaceuticals is therefore partially constructed on backward dependency on China for key starting materials and intermediates; a vulnerability exposed sharply during the COVID-19 pandemic and one that warrants a bilateral India–ASEAN API supply chain diversification strategy. This would require India's FTAs to focus on regulatory harmonisation, intellectual property, and standards convergence in pharmaceuticals.

Sector 3: Automotive — A Five-Fold Rise in Parts Trade, but GVC Opportunities in EV Market

The automotive sector presents the starkest illustration of GVC potential constrained by FTA design in the India-ASEAN context. ASEAN produces approximately 4 million vehicles annually, centred on Thailand's hub (over US$ 18.4 billion in domestic auto parts demand annually), Indonesia's growing OEM base, and Malaysia's components sector. Japan accounts for 49 per cent of Thailand's auto parts imports, China 24.9 per cent and Germany 7.5 per cent. India does not register among major suppliers. Yet at the aggregate level, ASEAN's imports of parts and components from India in the vehicles, aircraft and vessels sector experienced a nearly five-fold increase between 2011 and 2022. However, a significant portion of India's "machinery" and "vehicle" exports consist of capital goods and components that feed into ASEAN's assembly industries, rather than finished consumer goods competing in ASEAN markets.

The strategic opportunity lies in the EV transition. Indonesia's Hyundai–LG battery plant (online 2024) and Thailand's EV incentive package are restructuring ASEAN's automotive GVC. India's PLI scheme for Advanced Chemistry Cell batteries, its growing domestic EV market, and its nascent critical minerals partnership with Indonesia create a potential new entry point. The FTA structure, therefore, requires provisions that attract supply chain investment, skills development, and EV-specific content rules.

Sector 4: Textiles and Garments — India as Upstream Supplier in Vietnam's Export Machine

The India–Vietnam textile GVC is another potential area where FTAs can promote GVC linkages. Vietnam is one of the world's largest garment exporters, with textile and apparel exports reaching approximately US$ 44 billion annually. Critically, more than 64 per cent of Vietnam's apparel exports in 2022 contained foreign-made content, primarily yarns and fabrics sourced from India, China, and South Korea. India is a major beneficiary of this structure, with Indian cotton yarn, woven fabrics, and dye chemicals supplying Vietnam's spinning mills and garment factories. India's yarn exports to Vietnam grew from US$ 118 million in 2022 to US$ 151 million in 2023 and US$ 173 million in 2024, a 47 per cent increase over two years, attributing part of this growth to AITIGA's tariff reductions on yarn.

However, there remains a structural risk. Between 2015 and 2022, Chinese value-added content in Vietnam's apparel exports rose by 6 percentage points, reflecting China's deliberate expansion of its presence in ASEAN garment supply chains through FDI, Belt

and Road investment in Vietnamese spinning mills, and RCEP's liberal textile rules of origin[19]. India's decision to opt out of RCEP does not prevent Indian yarn from being used in Vietnamese factories, but it does mean that Indian exporters do compete against RCEP-origin suppliers without the advantage of common standards and origin certification.

Sector 5: Digital Services — Singapore as GVC Infrastructure Anchor

Singapore constitutes a distinct category within the ASEAN–India GVC landscape, as it functions not as a production partner but as a financial, digital, and logistics intermediary connecting Indian firms to regional GVCs. Cumulative FDI from Singapore into India reached US$ 174.9 billion between April 2000 and December 2024, accounting for approximately 24 per cent of India's total FDI inflows and making Singapore India's single largest foreign investor. Singapore was also India's top source of FDI equity in FY2023–24. This capital, flowing primarily into services, computer software, hardware, and trading, enabled India's IT sector to participate in ASEAN's digital economy as a service supplier rather than a manufacturing GVC participant.

India's GVC integration with ASEAN is predominantly driven by this forward integration through Singapore's financial and services ecosystem as observed in the previous section. The February 2023 UPI–PayNow linkage, the world's first real-time cross-border payment system connection, is the most concrete digital GVC infrastructure outcome of the AITIGA-plus CECA framework involving Singapore. India's IT services GVC is substantial. India now creates 7 per cent of global value added in the ICT sector, second only to China among emerging markets. However, this forward GVC participation remains structurally mediated through Singapore and is vulnerable to regulatory divergence as ASEAN advances DEFA and India develops its own data governance framework under the Digital Personal Data Protection Act 2023.

In spite of these evolving sectoral GVC opportunities, ERIA (2024) analysis observes that ASEAN remains heavily dependent on China, confirmed through Figure 7.4. The implication for India's GVC strategy is that deepening ASEAN–India integration requires more than preferential tariffs on bilateral trade. It requires a deliberate strategy to position India as the upstream alternative supplier of inputs that ASEAN currently sources from China. In pharmaceuticals, this means building API capacity and regulatory equivalence; in textiles, developing cotton processing and yarn quality; in electronics, developing semiconductor packaging and testing capacity that complements Malaysia's and Vietnam's assembly operations. Technology exports constituted 52.3 per cent of ASEAN's total exports compared to India's 29.7 per cent in 2022, this is the gap in technology intensity that presents the structural challenge AITIGA has not addressed and that deeper GVC-enabling agreements must target.

7.4. The Overlapping Trade Architecture: Mapping India's Strategic Position

Amidst the overlapping trade architecture for India that encompasses, AITIGA, RECP, CPTPP, IPEF and DEFA, which ones have deep integration provisions across Indo-Pacific that can facilitate GVC linkages? Appendix Table A1 maps these deep integration provisions across AITIGA (2010), RCEP (2022), CPTPP (2018; expanded 2024), IPEF (2022), and ASEAN DEFA (under negotiation) against their relevance to GVC facilitation. The comparison focuses on behind-the-border and regulatory provisions that determine whether an FTA generates production-sharing and value chain integration, not merely trade in final goods. India's status is shown in the final data row.

At the outset, AITIGA's design reflects the trade policy orthodoxy of the early 2000s, as it is a goods-only agreement, with no services chapter,

no investment chapter, no digital trade provisions, and rules of origin that have proved both complex and susceptible to circumvention by third-country goods, routed through ASEAN to access the Indian market at preferential rates. In September 2022, both sides tasked the AITIGA Joint Committee to undertake a comprehensive review, establishing eight sub-committees covering market access, rules of origin, standards and technical regulations, customs procedures and trade facilitation, sanitary and phytosanitary measures, trade remedies, and legal and institutional provisions.

First, a critical observation in Table A1 is that even an ambitious AITIGA 2.0 will remain a goods agreement, as the review's agreed scope does not include services, investment, or digital trade provisions. This will structurally limit AITIGA's ceiling as a GVC-enabling instrument.

Second, as Table A1 confirms, RCEP substantially exceeds AITIGA on every GVC-relevant dimension. These include a unified rules of origin framework with full diagonal cumulation across fifteen economies; an investment chapter with performance requirement prohibitions; a services chapter covering approximately 65 per cent of sectors; and an e-commerce chapter, even if the latter is weak in terms of legally binding provisions (Lee, 2026) explicitly excluded from dispute settlement at entry into force. India's absence from all these provisions is a structural GVC disadvantage that can compound over time as RCEP's architecture deepens.

The above implies that an Indian component exporter supplying a Vietnamese assembler must comply with AITIGA's rules of origin, while a South Korean supplier operating under RCEP uses the same rulebook as every other RCEP member in the supply chain. This creates a compliance asymmetry, invisible in tariff schedules but commercially significant for multinational sourcing decisions, creating a potential structural cost India might pay for its RCEP absence, especially in the context of GVC linkages between India and ASEAN.

CPTPP represents the current regulatory frontier of FTA design in the region. Table A1's comparison makes the depth differential unambiguous. This is so as the CPTPP achieves approximately 99 per cent tariff elimination (versus RCEP's 92 per cent and AITIGA's 75 per cent); it includes binding investor-state dispute settlement that RCEP explicitly excludes; it imposes mandatory commercial-considerations disciplines on state-owned enterprises for which RCEP has no dedicated chapter; and its e-commerce chapter, covering free cross-border data flows, prohibition on data localisation, source code protection, and consumer protection. These provisions are fully subject to dispute settlement, unlike RCEP's. CPTPP further includes entire chapters on labour rights and the environment, which RCEP omits entirely. With twelve members as of 2024, including seven Indo-Pacific economies such as Australia, Japan, New Zealand, Singapore, Malaysia, Vietnam, Brunei, plus the United Kingdom, Canada, Chile, Mexico, and Peru, CPTPP also constitutes a geopolitically attractive network, that aligns with India's broader strategic positioning.

However, a CPTPP accession is not a near-term realistic option for India. CPTPP's mandatory prohibition on data localisation conflicts with India's Digital Personal Data Protection Act 2023; its negative list approach to services liberalisation demands regulatory preparedness that India has not yet achieved; and its SOE disciplines and ISDS provisions are not aligned with India's current policy framework. However, the strategic value of CPTPP for India lies not exclusively in membership but in a possible alignment. This could involve progressively converging India's data governance, competition policy, investment rules, and IP framework with CPTPP standards preserving future accession optionality, building the regulatory credibility that attracts GVC-linked FDI, and reducing the compliance divergence costs that Indian firms face in CPTPP-member markets. This is the "regulatory stepping-stone" strategy that India can consider in deepening its GVC linkages through FTAs.

Finally, India's engagement with the remaining two architectures reflects a consistent strategic pattern: participation where commitments are non-binding or supply chain-focused; abstention where binding trade rules are involved. In IPEF, India has joined the Supply Chain Resilience Pillar[20], while abstaining from Pillar 1 (Trade). This is a pragmatic choice that extracts supply chain resilience benefits without accepting the labour, environmental, digital, and agricultural binding commitments of the Trade Pillar. In DEFA, India is not a negotiating party. As DEFA is expected to establish binding rules on cross-border data flows, digital payments interoperability, and e-commerce that will govern ASEAN's US$ 2 trillion digital economy by 2030, India's absence carries direct commercial implications for the thousands of Indian IT firms embedded in ASEAN's digital service supply chains.

The summary analysis of the deep FTA provisions in Table A1 confirms that India operates within the shallowest of the five frameworks examined, participates partially in a non-binding forum, and remains external to the three architectures most consequential for GVC facilitation. The depth-of-integration gradient, CPTPP at the regulatory frontier, RCEP as a broad but shallower middle ground, AITIGA as a minimalist goods agreement, provides the institutional landscape that India's firms navigate currently. As this gradient steepens over the coming decade, with RCEP deepening its e-commerce chapter and potentially adding ISDS, and DEFA creating new digital GVC infrastructure from which India is currently excluded, the ability of India's FTAs in ASEAN to deepen GVC linkages will increasingly become more challenging.

The above analysis implies that India's strategic challenge in terms of creating an FTA architecture with ASEAN that aligns with GVC linkages, cannot be resolved by any single policy choice. Completing an ambitious AITIGA review remains necessary but insufficient. Re-engaging with RCEP, considering CPTPP regulatory alignment, and DEFA-adjacent digital agreements are important to improve India's position within a framework whose ceiling is structurally below the level at which its ASEAN partners operate. The next section examines the sector-level and structural bottlenecks that constrain India's ability to move up this gradient.

7.5. ASEAN's Digital Economy Framework Agreement (DEFA): Implications for India

7.5.1. DEFA: An Overview

On 29 May 2026, at the Second Meeting of the 57th ASEAN Senior Economic Officials Meeting in Manila, ASEAN member states formally concluded negotiations on the ASEAN Digital Economy Framework Agreement. The agreement is targeted for formal signing at the 49th ASEAN Summit in November 2026, under the Philippines' ASEAN chairmanship. For the purposes of this chapter, DEFA's conclusion, effectively simultaneous with the chapter's preparation, represents the most significant development in ASEAN's digital trade architecture since the bloc's formation, and one whose implications for India's GVC strategy are immediate and substantial.

DEFA is, by design and in substance, a genuinely novel form of trade agreement. Unlike the digital provisions embedded in broader trade frameworks such as RCEP's Chapter 12 (excluded from dispute settlement at entry into force) or CPTPP's Chapter 14 (comprehensive but confined to goods and services trade), DEFA is a dedicated regional framework focused exclusively on digital economy governance, the world's first of its kind at regional scale. It covers digital trade and cross-border e-commerce, data governance and privacy, digital identity systems and electronic authentication, electronic payments and fintech, online safety and cybersecurity, competition policy in digital markets, emerging technology governance including artificial intelligence, and digital talent mobility. The agreement builds on and consolidates existing ASEAN digital initiatives,

including the ASEAN Single Window, cross-border digital payment connectivity, the ASEAN Unique Business Identification Number, providing them for the first time with a unified, binding legal architecture.

7.5.2. The Economic Stakes: ASEAN's Digital Economy and Why It Matters for India

The scale of the opportunity that DEFA addresses, and from which India is currently excluded, is of economic significance. ASEAN's digital economy was valued at approximately US$ 300 billion in 2024, projected to reach US$ 1 trillion by 2030 on current growth trends; DEFA's successful implementation could potentially double this to US$ 2 trillion. Indonesia, the region's largest digital economy, alone is projected to triple its digital economy to US$ 360 billion by 2030 with e-commerce contributing US$ 150 billion. The digital economy's share of GDP has already reached 23.4 per cent in Malaysia, 18.6 per cent in Singapore, and 18.3 per cent in Vietnam. Power demand for ASEAN's data centres is forecast to quadruple from 2.6 GW to 10.7 GW between 2025 and 2035 as hyperscalers including Amazon Web Services, Google, and Microsoft commit multi-billion-dollar investments across the region.

DEFA's practical economic value is equally concrete. Divergent digital regulations currently cost ASEAN businesses US$ 15–US$ 20 billion annually in compliance overhead. DEFA's unified digital customs system and interoperable e-invoicing are projected to cut cross-border transaction costs by 30 per cent, enabling the 71 million ASEAN SMEs, 70 per cent of which currently lack resources to navigate conflicting national digital rules, to compete across the region. Binding DEFA commitments could attract an additional US$ 30–US$ 50 billion in annual FDI by signalling regulatory stability and aligning regional policies with global digital trade norms. These are not hypothetical gains; they constitute the architecture of a US$ 2 trillion digital market that will be governed by rules India did not participate in drafting and from which India's firms will operate as external participants.

7.5.3. What DEFA Contains and What It Means for India: Domain-Level Analysis

Table 7.7 maps DEFA's concluded domains against India's current digital trade exposure in each. The analysis draws on the ASEAN Senior Economic Officials' May 2026 statement, the BCG/ASEAN DEFA study, the Tech For Good Institute's structural analysis, and techUK's post-conclusion assessment.

As observed in Table 7.7, two structural contradictions are immediately apparent. First, India's Digital Personal Data Protection Act 2023, whose implementation rules were finally notified in November 2025 after two years of delay, establishes a data governance framework that diverges from DEFA's anticipated mutual recognition regime on at least two dimensions: data localisation provisions and the treatment of cross-border data flows. Where DEFA bans 'unnecessary' data localisation and establishes a regional mutual recognition regime modelled on the EU's adequacy mechanism, India's framework includes localisation requirements for sensitive personal data and grants government access powers that are unlikely to qualify for adequacy status under ASEAN's criteria. Indian IT exporters managing data flows to and from ASEAN clients will face a compliance architecture shaped by DEFA rules they had no part in negotiating. Second, India's UPI-based payments expansion[21], while technically sophisticated and operationally impressive, is proceeding through a bilateral architecture that cannot match the systemic coherence of DEFA's interoperable payments framework[22]. India's bilateral linkages, however well-designed, will be DEFA-adjacent rather than DEFA-integrated, operating alongside the regional architecture rather than within it. The risk is not exclusion from individual bilateral payment flows but structural marginalisation from the systemic payments infrastructure that will underpin ASEAN's digital GVC ecosystem.

Table 7.7: DEFA's Concluded Domains and India's Strategic Exposure (as on June 2026)

DEFA Domain	Key Provisions (concluded May 2026)	India Exposure / Strategic Implication
Digital Trade & E-Commerce	Ban on import duties on electronic transmissions; paperless trade facilitation; ASEAN Single Window integration; unified digital customs procedures.	India excluded from duty-free digital transmission disciplines; Indian SaaS and digital goods exporters face compliance asymmetry vs. RCEP-origin competitors.
Cross-Border Data Flows	Trusted data flow framework; ban on 'unnecessary' data localisation (not absolute prohibition); mutual recognition of national data protection frameworks modelled on EU adequacy mechanism.	India's DPDP Act 2023 (rules notified November 2025) includes data localisation provisions that may diverge from DEFA's mutual recognition regime, creating compliance friction for Indian IT exporters.
Digital Payments & Fintech	Interoperable digital payments infrastructure; enhanced connectivity among ASEAN fast payment systems; consumer protection in digital financial services.	UPI bilateral linkages (Singapore, Thailand/ PromptPay under Project Nexus) are DEFA-adjacent but outside the binding framework. DEFA could create a coherent regional payments zone from which India's bilateral approach is structurally excluded.
Digital Identity & Authentication	Mutually recognisable and interoperable digital identity framework; electronic authentication standards across ASEAN.	India's Aadhaar-based digital identity stack is one of the world's most advanced but lacks formal mutual recognition with ASEAN. DEFA's identity framework creates a regional standard India may need to align with for e-commerce and service exports.
Cybersecurity	ASEAN-wide cybersecurity cooperation; consistent standards; strengthened CERT coordination; protections against online fraud and scams.	Indian IT firms operating in ASEAN will face DEFA-aligned cybersecurity standards; compliance costs will rise for those operating under divergent national frameworks.
Artificial Intelligence	Governance framework for AI deployment; safe and trusted AI standards across ASEAN digital markets.	India's emerging AI governance framework (draft National AI Policy 2025) diverges from ASEAN's DEFA-based AI standards, potentially creating market access barriers for Indian AI service exporters to ASEAN.
Competition Policy	Transparent environment for business competition and consumer choice; anti-monopoly principles in digital markets.	Indian digital platforms entering ASEAN markets will need to comply with DEFA-based competition rules, adding regulatory layers beyond AITIGA's goods-only framework.

Sources: Compiled by authors from ASEAN SEOM Statement (May 2026); BCG (2023); Khanna (2026)

7.5.4. Strategic Options for India: From Observer to Partner

DEFA's conclusion significantly narrows India's available strategic options in the digital domain. Three pathways in the current context merit consideration, each calibrated to India's current domestic digital governance framework and political economy constraints. The first and most immediately actionable is to accelerate bilateral Digital Economy Agreements with Singapore and Malaysia. Singapore has concluded DEAs with Australia, Chile, South Korea, and the United Kingdom, each providing a binding digital trade framework that goes substantially beyond RCEP's e-commerce chapter. An India–Singapore DEA, building on the foundation of CECA and the UPI–PayNow precedent, would create a high-standard bilateral digital framework whose provisions could progressively be extended to other

ASEAN members, functioning as a DEFA-compatible bridge rather than a parallel architecture.

The second pathway is to align India's Digital Personal Data Protection Act's implementation rules with DEFA's mutual recognition framework. This does not require India to abandon data sovereignty principles: DEFA itself bans only 'unnecessary' data localisation, preserving national security carve-outs. Calibrating India's implementation of the DPDP Act to minimise unnecessary divergence from DEFA's data governance baseline would substantially reduce the compliance friction facing Indian IT exporters in ASEAN markets without requiring legislative revision.

The third pathway is to formalise India's engagement with DEFA as an accession-eligible or observer partner, building on India's status as ASEAN's dialogue partner. ASEAN's practice with ATIGA and ACIA allows for external participation mechanisms; a comparable mechanism for DEFA would give India a structured channel to shape implementation without full membership obligations.

DEFA's conclusion in May 2026 constitutes a strategic inflection point in ASEAN–India digital relations. With DEFA's signing anticipated for November 2026, alongside the ASEAN Trade in Goods Agreement Upgrade and ASEAN–China FTA 3.0, the institutional architecture within which India's ASEAN relationships operate will shift in a single multilateral moment, as ASEAN will have a binding goods framework (ATIGA upgraded), a binding digital framework (DEFA), and a deepened arrangement with China (ACFTA 3.0), while its framework with India (AITIGA, under review) remains a goods-only instrument from 2010, although a separate services and investment agreement has been in force. The distance between the architecture India operates within and the architecture its ASEAN partners are deepening will widen sharply in November 2026 unless India moves decisively to close it through the strategic options identified above. The structure and scope of digital engagement between India and ASEAN remains 'relatively underexplored in the policy literature'[23], and is a gap that India's negotiators must urgently close in practice.

7.6. Bottlenecks, Regulatory Challenges, and Structural Constraints

The preceding sections have established that ASEAN–India GVC integration has grown but remains shallow; that the overlapping trade architecture disadvantages India structurally; and that DEFA's conclusion creates a new and urgent digital frontier. This section examines why, identifying the specific bottlenecks, regulatory failures, and structural constraints that have prevented the full potential of the ASEAN–India economic relationship from being realised, and that will constrain the policy options examined in Section 7.7.

Table 7.8 provides a consolidated severity assessment; summarizing it into a severity-ranked matrix for GVC integration between India and ASEAN. The analysis reveals that the four 'critical' constraints, rules of origin misuse, persistent NTBs, low FTA utilisation, and the inverted duty structure, are mutually reinforcing. The inverted duty structure that increases effective rate of protection, depresses domestic manufacturing capability, which reduces the value-added content available to meet rules of origin thresholds, which in turn lowers FTA utilisation, and limits pressure to remove NTBs.

For India's SME exporters, who account for approximately 40 per cent of India's total exports but operate with fragmented supply chains, limited documentation infrastructure, and common use of imported inputs that complicate origin certification, the compliance barriers to FTA utilisation are disproportionate. The implication for GVC linkages is direct. Low FTA utilisation rates mean that even a successfully renegotiated AITIGA, with improved tariff schedules and tighter rules of origin, will fail to generate GVC integration unless accompanied by a parallel programme of trade facilitation,

Table 7.8: Bottlenecks and Structural Constraints in ASEAN–India GVC Integration: Severity Assessment

Constraint Category	Key Evidence / Data	Policy Implication	Severity
Rules of Origin misuse & circumvention	China-origin goods routed via ASEAN exploit AITIGA preferential rates; import growth from ASEAN post-2010 outpaced export growth 2:1; India's global imports from ASEAN grew 120 per cent (2010–21) vs. 63 per cent overall	Tighter product-specific ROOs and enhanced verification essential; RCEP's common ROO framework reduces this risk for members but India remains outside	Critical
Non-tariff barriers (NTBs)	NTB incidence highest for India's exports to Indonesia, Philippines, Malaysia, Thailand; SPS and TBT measures dominate; standards vary significantly across ASEAN (e.g. peanuts, basmati rice pesticide limits); Indian pharma and auto face quotas and import regulations	MRAs on standards and certifications urgently needed; country-specific NTB monitoring desks and joint FTA committee redressal mechanisms required	Critical
Low FTA utilisation rates	India's FTA utilisation rate: 5–25 per cent; global average for developed economies: 70–80 per cent; complex ROOs, documentation burdens, and marginal tariff benefits below 10 per cent deter SME use	Self-certification of origin, digitisation of certificates, rationalised product-specific rules; FTAs are ineffective without utilisation architecture	Critical
Logistics & infrastructure costs	India's logistics cost: 7.97 per cent of GDP (FY2024–25 government estimate); Vietnam and Thailand operate port-led industrial clusters at substantially lower effective cost per unit; IMT Trilateral Highway incomplete	PM Gati Shakti NMP addresses this partially; land-based connectivity to mainland ASEAN remains the critical missing link for GVC integration	High
Inverted duty structure	Importing finished goods cheaper than importing components under AITIGA; affects ferro alloys, aluminium, copper pipes, textile staple fibres, chemical preparations; manufacturing's share of GDP fell from 15.4 per cent (2020) to 14.3 per cent (2023)	Tariff rationalisation essential; inverted duties simultaneously create the deficit anxiety that blocked RCEP and the manufacturing weakness that limits GVC participation	Critical
Atmanirbhar Bharat / PLI design tension	PLI target: raise manufacturing's share of GDP to 25 per cent by 2025 — not achieved (14.3 per cent in 2023); PLI successful in mobiles and pharma but delivered assembly operations rather than deep GVC integration in textiles, solar cells, auto components	PLI schemes need explicit GVC-linkage conditionality: incentivise integration into ASEAN supply chains, not just domestic production volume	High

Digital regulatory divergence (DPDP Act vs. DEFA)	India's DPDP Act (2023; rules notified Nov 2025) includes data localisation and access provisions diverging from DEFA's 'unnecessary localisation' ban and mutual recognition regime; NPCI 30 per cent market-share cap on foreign payment providers (on hold till Dec 2026)	DPDP Act implementation rules must be calibrated to minimise divergence from DEFA; NPCI cap extension is a recurring signal of digital market access friction	High
Political economy: MSMEs and agriculture	MSMEs: 40 per cent of India's exports; politically vocal opponents of import liberalisation; Dairy/agriculture: core constituency reason for RCEP withdrawal; 2025 AITIGA negotiations saw India exclude agriculture from liberalisation scope	Sectoral safeguards, adjustment assistance, and phased liberalisation with transition periods required to build domestic political coalitions for deeper integration	High
Weak GVC data infrastructure	India lacks firm-level GVC participation data comparable to OECD TiVA at sectoral granularity; negotiating teams lack real-time intelligence on where Indian firms are embedded in ASEAN supply chains	Investment in GVC data infrastructure (firm surveys, TiVA-comparable input-output tables at state level) is a precondition for evidence-based FTA negotiation	Moderate
Negotiating capacity & speed	AITIGA review: 10 JC meetings across 3 years (2023–2025) with conclusion outstanding; India-UK FTA: 14 rounds over 3 years; compare Vietnam's EVFTA: concluded in 18 months	India's Ministry of Commerce needs dedicated trade negotiating capacity — experienced trade lawyers, economists, and GVC analysts — beyond the current generalist cadre	Moderate

Sources: Compiled by authors from GTRI (2023); ORF (2024, 2025); ERIA (2024)

self-certification of origin, digitised certificates, simplified product-specific rules, and dedicated FTA implementation support for SMEs. These provisions are now increasingly observed in India's new age bilateral FTAs, including the one recently concluded with New Zealand.

The 'high' severity constraints, logistics costs, PLI design tension, digital regulatory divergence, and political economy resistance, share a common characteristic: they are amenable to domestic policy reform without requiring India to make FTA concessions that carry political risk. Reducing logistics costs through GatiShakti, redesigning PLI schemes with explicit GVC conditionality, calibrating DPDP Act implementation toward DEFA compatibility, and building MSME-adjustment support mechanisms are all domestic actions that would improve India's GVC competitiveness regardless of the outcome of any external negotiation. This is a key policy insight. India's GVC integration problem is substantially a domestic competitiveness problem. Fixing the domestic constraints is, therefore, an essential pre-condition to better FTA design, not a complement.

7.7. Policy Options and Strategic Recommendations

The analysis across the preceding sections confirms that India's relationship with ASEAN is one of expanding trade but contracting strategic leverage in terms of connectivity with GVCs, with only three

ASEAN members (Singapore, Indonesia and Thailand) increasing their GVC linkages with India since 2019. This section attempts to provide a set of policy recommendations, structured as a differentiated and sequenced strategy rather than a single policy choice. The recommendations are ordered by the combination of urgency and feasibility, and each is grounded explicitly in the analytical findings of the preceding sections.

7.7.1. Recommendation 1: Complete an Ambitious AITIGA 2.0 — India's Most Immediately Actionable Step

The AITIGA review, with its tenth Joint Committee meeting completed in August 2025 and seven sub-committees actively engaging, represents the most immediately actionable policy lever available to India. A genuinely ambitious AITIGA 2.0 must go significantly beyond improving tariff schedules and tightening rules of origin, to address the structural gaps that Table A1 shows. Three additions are essential to transform AITIGA 2.0 from a goods agreement into a GVC-enabling instrument.

First, a digital trade chapter, even on a provisional or best-efforts basis pending conclusion of the full review, would address the single most consequential design gap in AITIGA's current architecture. Given DEFA's conclusion, ASEAN negotiators now have a common digital governance template to work from; India should propose aligning AITIGA's digital provisions with DEFA's baseline rather than negotiating from first principles.

Second, a binding non-tariff barrier redressal mechanism, with time-bound resolution procedures and a joint monitoring function, is essential to address the systematic NTBs constraint identified in Table 7.8. Third, product-specific rules of origin modelled on RCEP's framework, would simultaneously prevent Chinese goods circumvention and reduce the compliance divergence cost that currently disadvantages Indian component exporters relative to RCEP-member competitors.

7.7.2. Recommendation 2: A Calibrated RCEP Re-engagement Strategy

The political economy obstacle, RCEP re-entry perceived as a China FTA, can be managed through careful strategic framing and concrete safeguard design. India should approach re-engagement not as accepting the 2019 agreement but as negotiating "RCEP Plus Services": making a services chapter, addressing India's long-standing demand for services mobility and professional recognition, a precondition for re-entry, thereby transforming RCEP from a goods-focused deficit risk into a services-opportunities-plus-goods agreement. Sector exclusions for dairy, paddy, and sensitive agriculture, phased tariff reduction schedules with automatic safeguard triggers for critical industries, and China-specific rules of origin in sensitive sectors can be negotiated within the RCEP framework. Critically, the strategic reframing matters: RCEP re-engagement should be presented domestically as a vehicle for capturing the China Plus One supply chain shifts, a narrative that resonates with both the manufacturing community and the strategic community.

7.7.3. Recommendation 3: CPTPP-Compatible Regulatory Alignment — The Stepping-Stone Strategy

Full CPTPP accession is not a near-term realistic policy option, but regulatory alignment with CPTPP standards is both achievable and strategically valuable independent of accession. The analytical case is grounded in three observations from the preceding sections. First, India already has bilateral FTAs with Australia, Japan, Singapore and now New Zealand, all CPTPP members. Extracting CPTPP-comparable commitments in digital trade, investment, and services from these agreements upgrades their effective depth without formal CPTPP accession. Cambodia's CPTPP accession process (application filed December 2025) demonstrates that developing economies with significant regulatory gaps can use CPTPP accession as a structured reform programme rather than simply a market access exercise.

The stepping-stone strategy has four domestic components. The Finance Bill 2025's removal of seven customs tariff categories and EV/mobile manufacturing duty exemptions is directionally consistent with CPTPP-compatible tariff reform and should be extended systematically. The announced revision of India's 2015 Model BIT provides an opportunity to adopt investor-friendly provisions that approach CPTPP's investment chapter standards while preserving regulatory safeguards. The DPDP Rules 2025, if implemented with minimal unnecessary data localisation, can be calibrated toward CPTPP's data flow provisions and India's competition law framework, strengthened by the Competition (Amendment) Act 2023, provides a foundation for the SOE and competition chapter alignment that CPTPP requires.

7.7.4. Recommendation 4: A DEFA-Adjacent Digital Strategy

DEFA's conclusion makes a proactive India digital strategy with ASEAN urgently necessary. The Lowy Institute (2026) analysis of the multiplying digital trade rules in the Indo-Pacific makes the strategic logic clear: The region no longer has a single digital order but "multiple sets of rules operating in parallel." India's optimal strategy is to use bilateral Digital Economy Agreements to establish compatibility with the highest common denominator of these rules, CPTPP Chapter 14 and DEFA, rather than defaulting to the lowest, RCEP's e-commerce chapter whose dispute settlement inapplicability makes it the weakest enforceable digital framework in the region.

The India–Singapore Digital Economy Agreement (DEA) is the most immediately actionable instrument. Singapore's established DEA template, built on CPTPP digital standards and already applied with Australia, Chile, South Korea, and the UK, provides India with a negotiating starting point, and the UPI–PayNow precedent demonstrates both the technical feasibility and political willingness of the bilateral relationship to pioneer digital GVC infrastructure. An India–Singapore DEA should cover cross-border data flows and a mutual recognition arrangement for data protection frameworks (the critical step toward DEFA compatibility); digital payments interoperability building on UPI–PayNow; digital identity mutual recognition (Aadhaar-to-SingPass); electronic invoicing and paperless trade; and cybersecurity cooperation. This agreement, once concluded, should be extended bilaterally to Malaysia and Vietnam, progressively building a network of DEFA-compatible bilateral digital agreements. India should simultaneously seek formal observer status in DEFA's implementation governance structure, leveraging its ASEAN dialogue partner status to gain a structured voice in DEFA's evolving standards without full membership obligations.

7.7.5. Recommendation 5: Domestic Competitiveness as the Precondition for All External Strategies

The four external recommendations above will generate limited GVC gains unless they are accompanied by a systematic domestic reform programme that addresses the binding constraints identified in Table 7.8. Four domestic interventions are critical.

First, PLI schemes must be redesigned with explicit GVC-linkage conditionality: incentives should be conditional not merely on domestic production volume but on demonstrated integration into ASEAN supply chains, measured by intermediate goods exports, backward linkage with ASEAN component suppliers, and participation in regional certification frameworks. PLI schemes that incentivise assembly for the domestic market without GVC integration perpetuate the Atmanirbhar paradox[24].

Second, India's FTA utilisation infrastructure requires dedicated institutional investment. A national FTA Utilisation Support Programme modelled on Vietnam's EVFTA utilisation architecture, providing self-certification of origin, digitised certificates, SME advisory services, and firm-level GVC mapping tools.

Table 7.9: Strategic Roadmap: India–ASEAN GVC Integration Policy Recommendations (2026–2030)

Recommendation	Priority Actions	Timeframe	Key Domestic Prerequisite	Primary References
R1: Complete Ambitious AITIGA 2.0	Conclude ROO reform with product-specific rules; digital trade chapter (provisional); MRAs on pharma/auto standards; binding NTB redressal; expanded agricultural access; services investment trigger clause	Near-term 2026–27	Tariff rationalisation to address inverted duty structure; digitise certificates of origin; self-certification rollout for SMEs	ASEAN Secretariat (2025); GTRI (2023); ICRIER WP165; ADB ROO Assessment (2023)
R2: Calibrated RCEP Re-engagement	Seek observer status initially; negotiate sector exclusions for dairy/agriculture with phased review; push for services chapter as condition of re-entry; utilise Japan–Singapore fast-track provision; frame as 'RCEP Plus Services'	Medium-term 2027–29	Domestic consensus-building; safeguard mechanism design; MSME adjustment support fund; address China-routing via strict ROOs in re-entry terms	Das (2023); Petri & Plummer PIIE WP20-9; Outlook Business (2025); ADB ROO Assessment (2023); ORF (2025)
R3: CPTPP Regulatory Alignment (Stepping-Stone Strategy)	Progressive alignment of data governance (DPDP Act calibration), competition law, BIT revision, and IP framework with CPTPP standards; leverage bilateral FTAs with AU, JP, SG (all CPTPP members) to extract CPTPP-comparable digital commitments	Medium-term 2026–30	DPDP Rules recalibration; revised Model BIT (2025 Budget commitment); SEBI/RBI regulatory convergence; remove NPCI 30 per cent FPS cap permanently	CRS IF12078 (2023); Asia Foundation (2024); UKTPO (2026); CSIS (2026); India Briefing (2026)
R4: DEFA-Adjacent Digital Strategy	Negotiate bilateral DEA with Singapore (building on CECA/UPI-PayNow); pursue DEA with Malaysia; align DPDP Rules with DEFA mutual recognition regime; formalise India–ASEAN observer/dialogue status in DEFA implementation; scale Project Nexus	Near-term 2026–27	DPDP Rules calibration toward DEFA adequacy standards; Government data-sharing access provisions reviewed; Aadhaar interoperability framework for ASEAN	ASEAN/BCG DEFA Study (2023); Lee et al. (2025); LKYSPP (2026); Asia Foundation (2024); Lowy Institute (2026)
R5: Domestic Competitiveness Prerequisites	Redesign PLI with explicit GVC-linkage conditionality; complete GatiShakti NMP priority corridors; FTA utilisation programme for SMEs; GVC data infrastructure investment; accelerate IMT Highway completion; dedicate trade negotiating capacity	Immediate & Ongoing	Finance Bill 2025 tariff reforms as starting point; National Manufacturing Mission 2.0 integration; MSME adjustment support scheme	ERIA (2024); Federal (2025); Atlantic Council (2020); Policy Circle (2026); World Bank WDR 2020

Sources: Author's compilation based on ERIA (2024); Crivelli et al. (2023); BCG (2023); Petri & Plummer (2020); Das (2023); GTRI (2023); CRS (2021, 2023); Lee et al. (2025); Khanna (2026); World Bank WDR 2020; ORF (2025).

Vietnam's EVFTA utilisation rate above 60 per cent demonstrates what systematic utilisation support can achieve, compared to India's 25 per cent rate.

Third, physical connectivity to mainland ASEAN through the IMT Trilateral Highway, the Kaladan Multimodal project, and the associated Northeast industrial corridor development, should be treated as a GVC infrastructure priority rather than a development assistance project, with dedicated project completion timelines and contingency planning for Myanmar's political instability.

Fourth, India needs to invest substantially in GVC data infrastructure: firm-level GVC participation surveys, TiVA-comparable input–output tables at the state level, and a dedicated GVC intelligence function within the Ministry of Commerce to provide trade negotiators with real-time data on where Indian firms are embedded in ASEAN supply chains and where the most commercially significant opportunities lie.

Table 7.9 summarises the above recommendations in a sequenced strategic roadmap. The sequencing is deliberate: Recommendation 1 (AITIGA 2.0) and 4 (DEFA-adjacent digital strategy) are near-term because they operate within existing bilateral frameworks where political will is established and implementation infrastructure exists. Recommendation 2 (RCEP re-engagement) and 3 (CPTPP regulatory alignment) are medium-term because they require either multilateral negotiation or domestic regulatory reform that takes time to build. Recommendation 5 (domestic competitiveness) is both immediate and ongoing because it is the precondition for realising gains from all external strategies.

The overarching strategic logic that unifies the five recommendations is what this chapter terms the "simultaneous reform imperative." Each recommendation reinforces the others: completing AITIGA 2.0 with RCEP-modelled rules of origin reduces the ROO compliance gap that RCEP re-engagement would fully close; CPTPP regulatory alignment creates the domestic framework that makes both RCEP re-engagement less threatening and DEFA compatibility more achievable; a DEFA-adjacent digital strategy builds the digital GVC infrastructure that makes India's IT and services sector less vulnerable to DEFA's architecture and more attractive to ASEAN digital investment; and domestic competitiveness reforms provide the manufacturing depth that makes all external agreements commercially consequential rather than merely institutionally present.

In conclusion, India's trade strategy to date has been to treat these as sequential choices, to seek domestic reform before external engagement, or to engage externally while deferring domestic reform. The evidence from Section 3's GVC data, Section 5's DEFA analysis, and Section 6's constraint diagnosis in Table 7.8 collectively demonstrates that this sequencing has generated fifteen years of trade expansion without GVC deepening.

The simultaneity of reform, external engagement and domestic competitiveness reform pursued in parallel, mutually reinforcing each other, is an observable pattern of every successful GVC integration story in Asia, from Korea's POSCO-anchored steel GVC to Vietnam's Samsung-led electronics transformation. India's GVC trajectory with ASEAN will be determined by whether it can sustain this simultaneity learning lessons from its Southeast Asian neighbours.

Endnotes

1 See, Sen, et al (2004).

2 The AEP has given a new direction to further strengthening the bilateral economic relations between India and ASEAN. The AEP has a broader economic and geo-strategic engagement vision involving the wider Indo-Pacific region, that comprises countries bordering the Indian and Pacific oceans, thereby including ASEAN (Sen, 2022).

3 These agreements have established measures for ensuring transparency, protection, domestic regulations, mutual recognition, market access, and dispute settlement pertaining to bilateral trade and investment flows (Sen, 2022)

4 Ministry of Commerce and Industry, "Export Import Data Bank: Region-wise Exports and Imports," Accessed 10 July 2026.

5 The World Bank's World Development Report (2020) defines GVC trade as "involving at least two border crossings" which is a fundamental shift in how production is organised globally. Rather than exporting finished products, GVC participants export tasks: the design of a component, its fabrication, its assembly, its quality certification, or its distribution. This "fragmentation of production" across national borders, coordinated by lead firms through investment, technology transfer, and contractual relationships, is the defining organisational feature of the contemporary global economy. GVC participation is measured through value-added decomposition of gross exports, a methodology that separates domestic value added from foreign value added embodied in a country's exports.

6 See https://timesofindia.indiatimes.com/business/india-business/india-should-be-part-of-rcep-cptpp-niti-ceo/articleshow/115064454.cms

7 UNCTAD's Global Trade Update of January 2026 noted that nearly two-thirds of global trade now takes place within value chains being actively reshaped by geopolitical tensions, industrial policy, and new technologies, with frequent policy shifts increasing uncertainty and discouraging long-term investment

8 See India's Trade Recalibrations in the Age of Uncertainty – The Diplomat

9 See https://www.indiastat.com/Socio-Economic-Voices/India-Ink-FTAs-Strong-Bilateral-Trade-Trajectories

10 See https://www.ids.ac.uk/opinions/opportunities-risks-and-realities-of-indias-participation-in-global-value-chains/

11 The study shows that in the intervening period between 2009 and 2024 (the respective years of the signing and review of AITIGA), India has improved its GVC participation in several industries, such as chemicals, pharmaceuticals, machinery, and automobile parts and engines. However, India has lagged other ASEAN emerging markets such as Malaysia and Viet Nam when it comes to attracting manufacturing FDI inflows.

12 It is evident that AITIGA may have created final-goods trade while diverting GVC-relevant intermediate trade. India's widening trade deficit with ASEAN reflects import growth, but evidence of welfare-improving specialisation versus trade diversion via relaxed ROOs is mixed. Several Indian sectors allege AITIGA's electronics and chemicals ROOs have been exploited by third country (notably Chinese) manufacturers routing goods through ASEAN. a concern driving the ongoing AITIGA review.

13 See, Asia foundation (2024).

14 See, https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/economic-forecasts/autumn-2024-economic-forecast-gradual-rebound-adverse-environment/global-trade-outlook-and-resilience-global-value-chains_en

15 See, https://news.un.org/en/story/2025/04/1162306

16 Refer, WTO (2026) Global Trade Outlook and Statistics.

17 Refer, TRADESTAT Database

18 These would include examples such as Malaysia's semiconductor packaging and testing for Intel and Infineon, Vietnam accounting for approximately 30% of Samsung's global smartphone production, and the Philippines and Thailand contributing to assembly and testing capacity in electronics.

19 As an example, RCEP's garment RoO requires only a tariff-heading shift at the two-digit HS level, so that even garments sewn from non-RCEP yarns qualify for duty-free treatment within the region.

20 These include an Early Warning System, Crisis Response Network, and Investment Accelerator for resilient supply chains, and the Clean Economy and Fair Economy Pillars

21 By October 2025, UPI was processing a record 20.7 billion monthly transactions worth approximately INR 27.28 lakh crore domestically, while NPCI International was actively pursuing bilateral linkages with Indonesia, Thailand, and Malaysia, described by its officials as 'high-traffic countries' for UPI expansion. Project Nexus, the BIS-led initiative to interlink fast payment systems across India, Malaysia, the Philippines, Singapore, and Thailand, provides a multilateral dimension to this effort, targeting operational connectivity by 2026.

22 As BIS (2024) analysis of cross-border payments confirms, each bilateral payment system link requires separate negotiation of technical standards, business processes, regulatory frameworks, and consumer protection rules. As the number of participating jurisdictions increases, the number of bilateral links required rises exponentially. DEFA's digital payments framework addresses precisely this scalability problem by creating a single, unified regional architecture for payments interoperability across ten economies simultaneously — an architecture that, once in force, will govern the payments infrastructure underlying ASEAN's USD 2 trillion digital economy. India's bilateral linkages, however well-designed, will be DEFA-adjacent rather than DEFA-integrated: operating alongside the regional architecture rather than within it. The risk is not exclusion from individual bilateral payment flows but

structural marginalisation from the systemic payments infrastructure that will underpin ASEAN's digital GVC ecosystem

23 See, Khanna (2026).

24 This refers to the Atmanirbhar Bharat policy, the self-reliance framework launched in May 2020, that has two distinct interpretations that pull in opposite directions. The first, frames self-reliance as export competitiveness: building Indian firms that are strong enough to compete globally, using GVC participation as the mechanism. The second, reflected in tariff escalation, import substitution measures, and the political economy of PLI scheme design, frames self-reliance as import reduction: keeping foreign goods out of the Indian market. The former is GVC-compatible; the latter is fundamentally at odds with GVC participation, which involves both imports of inputs and exports of outputs.

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Appendix: Deep Integration Provisions Across Indo-Pacific Trade Architectures A GVC Facilitation Comparison

Table A1: Deep Integration Provisions — AITIGA, RCEP, CPTPP, IPEF, and ASEAN DEFA: GVC Relevance Assessment

Deep Integration Provision (GVC Relevance)	AITIGA (2010)	RCEP (2022)	CPTPP (2018/UK 2024)	IPEF (2022)	ASEAN DEFA (in negotiation)
I. GOODS TRADE & RULES OF ORIGIN					
Tariff elimination scope	✓ ~75 per cent lines	✓ ~92 per cent lines	✓ ~99 per cent lines	✗ Not in Trade Pillar	N/A
Common/unified Rules of Origin	✗ AITIGA-specific only	✓ Single unified ROO framework	✓ Full product-specific ROOs	✗ Not applicable	N/A
Cumulation across bloc members	✗ Bilateral only	✓ Full diagonal cumulation	✓ Full diagonal cumulation	✗ Not applicable	N/A
Customs procedures & trade facilitation	◑ Basic provisions	✓ WTO TFA-plus	✓ Comprehensive chapter	✓ Supply chain pillar	N/A
Sanitary & phytosanitary (SPS)	◑Under review	✓ Chapter included	✓ Binding chapter	◑ Agri pillar (limited)	N/A
II. INVESTMENT					
Investment protection (NT, MFN, FET)	✗ Separate agreement *2015; limited*	✓ Chapter 10 *full standards*	✓ Chapter 9 *comprehensive*	◑ Facilitation only	N/A
Investor-State Dispute Settlement (ISDS)	✗ Not included	✗ Excluded; under review	✓ Chapter 9B; binding	✗ Not applicable	N/A
Prohibition on performance requirements	✗ Not included	✓ Article 10.9	✓ Article 9.10	✗ Not covered	N/A
National treatment (pre-establishment)	✗ Post-establishment only	◑ Positive list; hybrid	✓ Negative list; broader	✗ Not included	N/A
III. SERVICES TRADE					
Services liberalisation chapter	✗ Separate agreement *2015; shallow*	✓ Chapter 8 *~65 per cent sectors open*	✓ Chapters 10-11 *negative list*	✗ Not in Trade Pillar	N/A
Financial services	✗ Not covered	✓ Chapter included	✓ Dedicated chapter *ISDS applicable*	✗ Not applicable	◑ Payments inter-operability
Mode 4 (movement of natural persons)	◑ Limited; professionals	◑ Chapter 12; incremental	✓ Chapter 12; broader	✗ Not included	N/A
Mutual recognition of standards	◑ Under review SC-STRACAP	◑ Best-efforts basis	✓ Binding MRA provisions	✗ Not applicable	◑ Under negotiation
IV. DIGITAL TRADE & DATA GOVERNANCE					
E-commerce / digital trade chapter	✗ No provisions	✓ Chapter 12 *no duties on transmissions*	✓ Chapter 14 *comprehensive; binding*	◑ Digital pillar *non-binding*	✓ Core focus of DEFA

Deep Integration Provision (GVC Relevance)	AITIGA (2010)	RCEP (2022)	CPTPP (2018/UK 2024)	IPEF (2022)	ASEAN DEFA (in negotiation)
Cross-border data flows	✗ Not covered	◑ Permitted *broad exceptions*	✓ Free flows *narrow exceptions*	◑ Framework principles	✓ Binding data-flow rules
Prohibition on data localisation	✗ Not covered	◑ Permitted with carve-outs *security/public policy*	✓ Binding prohibition *Art. 14.13*	✗ Not binding	✓ Expected binding rule
Source code protection	✗ Not covered	✗ Not covered	✓ Art. 14.17: binding	✗ Not included	◑ Under negotiation
Dispute settlement: digital chapter	✗ Not applicable	✗ Excluded from DS *at entry into force*	✓ Full DS applicable	✗ Not binding	✓ Anticipated binding
Digital payments interoperability	✗ Not covered	✗ Not covered	✗ Not covered	◑ IPEF fintech principles	✓ Core DEFA objective
V. REGULATORY DEPTH & GOVERNANCE					
Intellectual property (beyond TRIPS)	✗ Not included	✓ Chapter 11 *TRIPS-plus*	✓ Chapter 18 *comprehensive*	✗ Not applicable	◑ IP for digital goods
Competition policy	✗ Not included	✓ Chapter 13 *competition law obligation*	✓ Chapter 16 *binding; private rights*	✗ Not applicable	✗ Not included
State-owned enterprise disciplines	✗ Not included	✗ No dedicated chapter	✓ Chapter 17 *commercial considerations*	✗ Not applicable	✗ Not included
Government procurement	✗ Not included	◑ Transparency only	✓ Chapter 15 *GPA-like; binding*	✗ Not applicable	✗ Not included
Labour rights standards	✗ Not included	✗ Best-efforts only	✓ Chapter 19 *binding*	◑ Labour pillar *principles*	✗ Not included
Environmental chapter	✗ Not included	✗ No chapter	✓ Chapter 20 *binding*	✓ Clean economy pillar	✗ Not included
Overall dispute settlement coverage	◑ Goods chapters only	◑ Goods; digital excluded	✓ Comprehensive *all chapters*	✗ Non-binding framework	✓ Anticipated binding
India's Status / Access	Party (review ongoing; 10 JC meetings to Aug 2025)	Non-member (withdrew Nov 2019; RCEP minus China strategy)	Non-member (CPTPP alignment possible; accession remote near-term)	Member (not in Trade Pillar; in Supply Chain pillar)	Non-signatory (partner in ASEAN; bilateral DEA strategy needed)

✓ Full provision **◑ Partial / limited provision** **✗ Not covered / absent** *N/A = Not applicable to this agreement*

Sources: Authors' compilation from Crivelli et al. (2023); CRS (2021, 2023); Asia Foundation (2024); BCG (2023); World Bank (2020).

8 ASEAN–India Trade in Services: Sectoral Dynamics, Legal Framework, and the Way Forward

Prabir De, Krithika Manoj and Krishna Bhattacharya

8.1. Introduction

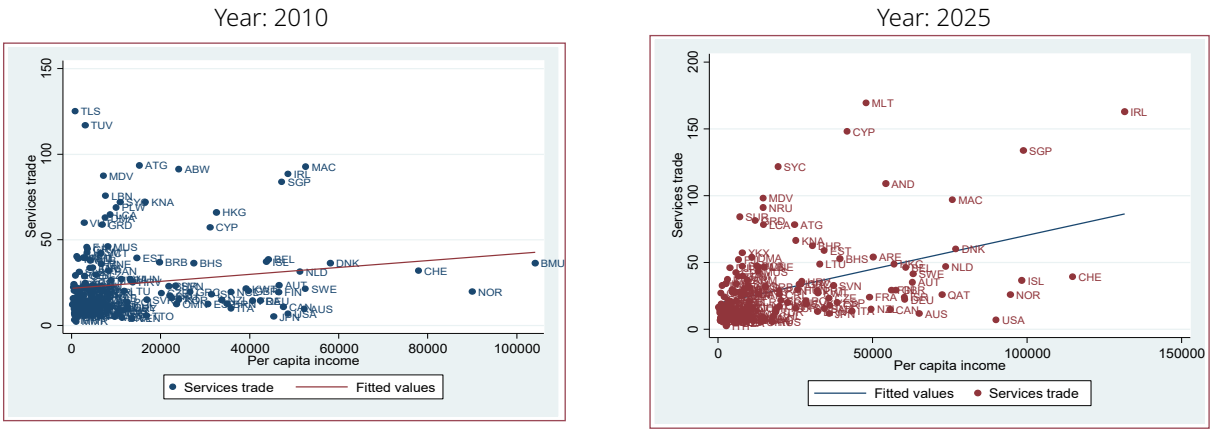
India and the Association of Southeast Asian Nations (ASEAN) are trade partners under a free trade agreement in services. In 2014, both parties concluded the ASEAN–India Trade in Services Agreement (AITISA, also referred to as 'the agreement'), through which they committed to liberalizing their respective service sectors and enhancing market access for each other's service providers. It is, therefore, logical to examine the performance of trade in services between ASEAN and India, as this will provide insights not only into the degree of trade in services integration but also into the geographical and sectoral spread of such trade.

The rest of the chapter is organised as follows. Section 2 analyzes the growth of trade in services in India and ASEAN and that between India and ASEAN, whereas Section 3 presents overview and sectoral spectrum of the ASEAN–India Trade in Services Agreement. Barriers to trade in services are then dealt in Section 4, whereas comparison of AITISA with other trade agreements are dealt in Section 5. Finally, conclusions are drawn in Section 6.

8.2. Trade in Services in ASEAN and India: Trends and Profiles

In both developed and emerging markets, the services sector has become a central pillar of a country's

Figure 8.1: Scatter between Per Capita Income and Trade in Services



*Deleted outliers include Luxembourg in 2010 and 2025 and Malta in 2010.
**Trade in services is taken as percentage of GDP and Per capita income in US$ current price
Source: Drawn by authors based on World Development Indicators, The World Bank

economy, contributing significantly to gross domestic product, employment, and accounting for nearly a quarter of world trade.[1] The scatter plots mapping per capita income and trade in services for 2010 and 2025 clearly reveal a strong positive correlation, demonstrating that per capita income matters for flows in trade in services (Figure 8.1). A steeper statistical fit in 2025 also indicates rising income per capita and trade in services, thus suggesting an overall upward structural shift over time. This expansion is closely linked to globalization, rising incomes, urbanisation and digital transformation, which have accelerated the demand for diverse and high-value services. In developing economies and emerging markets such as India and ASEAN, the services sector has played a transformative role, driving economic specialization and integration into the global value chains. This section analyses the trends and profiles of trade in services of India and the ASEAN member states.

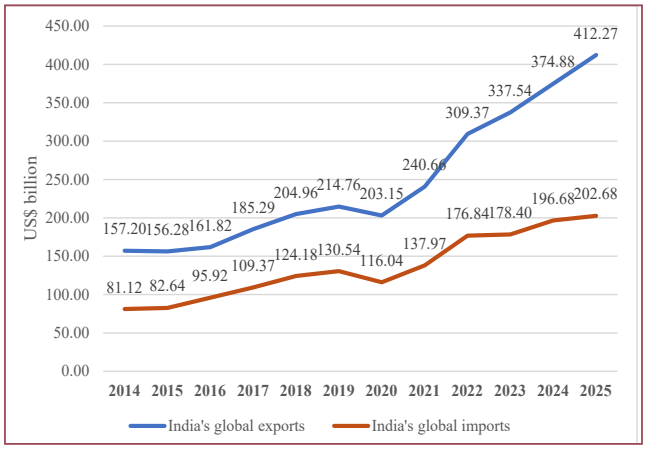
8.2.1. India

India is one of the major players in trade in services. India's services exports have experienced a phenomenal trajectory in commercial exports over the years in the global market. In 2025, India emerged as a notable country in global trade, maintaining resilience and growth despite prevailing uncertainties in the international economic environment. India has been maintaining strong momentum through resilient domestic manufacturing and expanding services exports[2]. Its dynamic information technology and financial services capitalized on the global surge in digital trade, while its diversified import partnerships contributed to the stability and resilience of supply chains.

From 2014 to 2025, India's exports of services surged from US$ 157.20 billion in 2014 to US$ 412.27 billion in 2025, showing a healthy growth of nearly 145 per cent over the period (Figure 8.2). Notably, though the export growth remained steady until 2019–20, there was a marginal decline during the COVID-19 pandemic in 2020–21. Post-pandemic, exports recovered strongly, rising from US$ 203.15 billion in 2020 to US$ 412.27 billion in 2025, reflecting the growing global demand for India's services output. During the same period, India's global rank remained at 8th, maintaining its position as a key player in the global trade in services market.

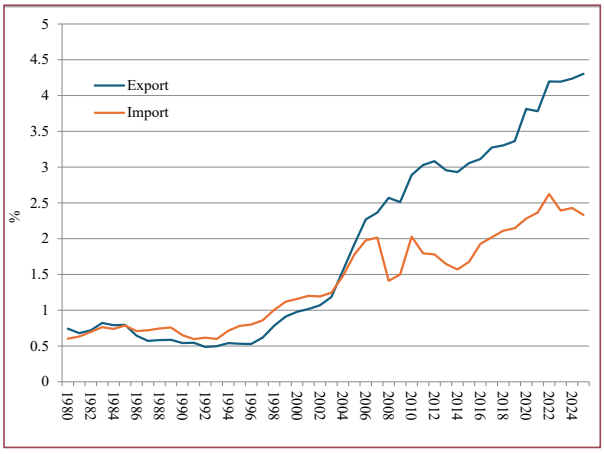
Notably, services exports have consistently exceeded services imports, underscoring the India's strong performance in the trade in services sector. There has been nearly a twofold increase in the trade values for both exports and imports of services. The trade in services import value has surged significantly,

Figure 8.2: Trends in India's Global Trade in Services



Source: WDI, World Bank

Figure 8.3: India's Share in Global Trade in services



Source: Calculated based on WDI, World Bank

increasing from US$ 81.58 billion in 2014–15 to US$ 198.72 billion in 2024–25. Like exports, imports experienced a temporary contraction during the pandemic, declining from US$ 128.27 billion in 2019–20 to US$ 117.52 billion in 2020–21 before recovering in subsequent years. In the global scenario, India has consolidated its position as a major exporter of services. Its share in global services exports doubled from 1.9 per cent in 2005 to 4.3 per cent in 2025 (Figure 8.3).[3] Also, considering the top 20 trading partners of India in commercial services, the topmost country is the United States of America, United Kingdom, followed by Singapore, Germany and China. Singapore stands as a key ASEAN trade partner, ranking third largest trading economy of India, followed by Thailand and Indonesia making it to India's top 20 list (Figure 8.4).

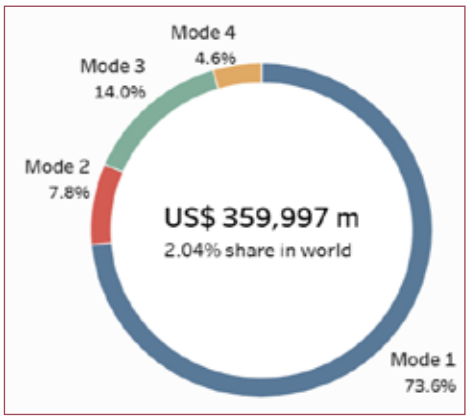
Illustrated in Figures 8.5 and 8.6, India's services exports are overwhelmingly dominated by Mode 1

Figure 8.4: India's Top 20 Trade Partners based on Commercial Services



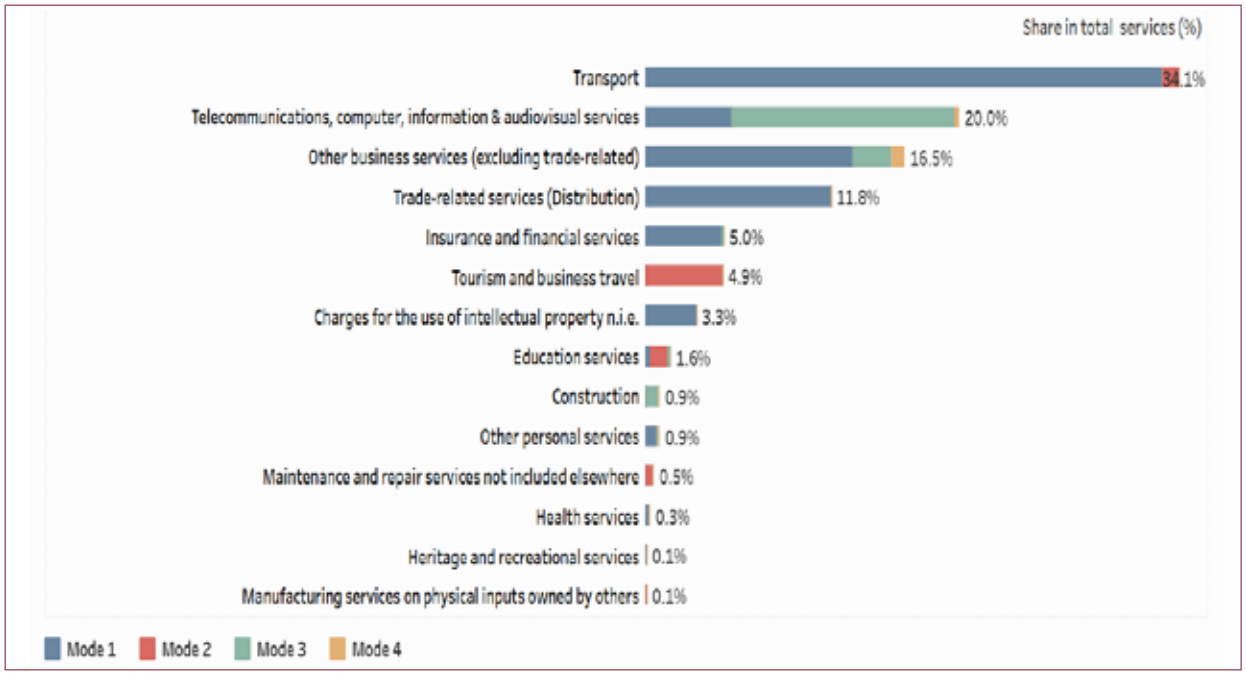
Source: WTO based on WTO-OECD BaTiS

Figure 8.5: Structure of Services Export of India in 2022



Source: WTO

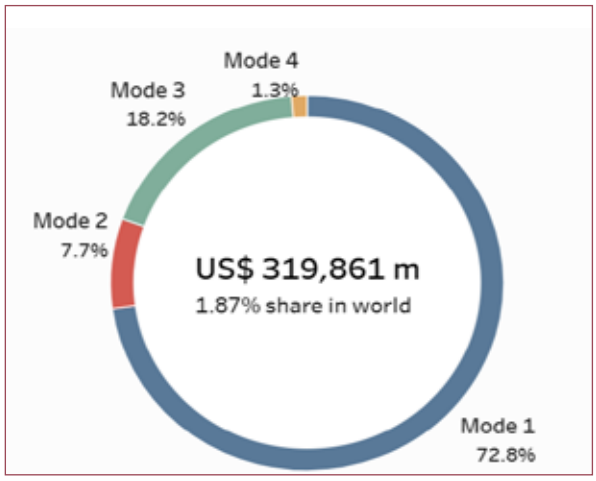
Figure 8.6: Structure of India's Mode-wise Services Exports, 2022



Source: WTO

(cross-border supply) at 73.6 per cent, reflecting India's strength in Information Technology, software, and business process outsourcing delivered remotely; Mode 3 (commercial presence abroad) contributes 14.0 per cent, highlighting Indian firms' overseas subsidiaries in trade related services and IT; Mode 2 (consumption abroad) makes up 7.8 per cent, covering tourism, manufacturing services, and transport services consumed in India by foreign clients; and Mode 4 (movement of natural persons) accounts for 4.6 per cent, representing professionals traveling abroad to deliver services directly, underscoring both India's comparative advantage in digitally deliverable services.

Figure 8.7: Structure of India's Services Import in 2022

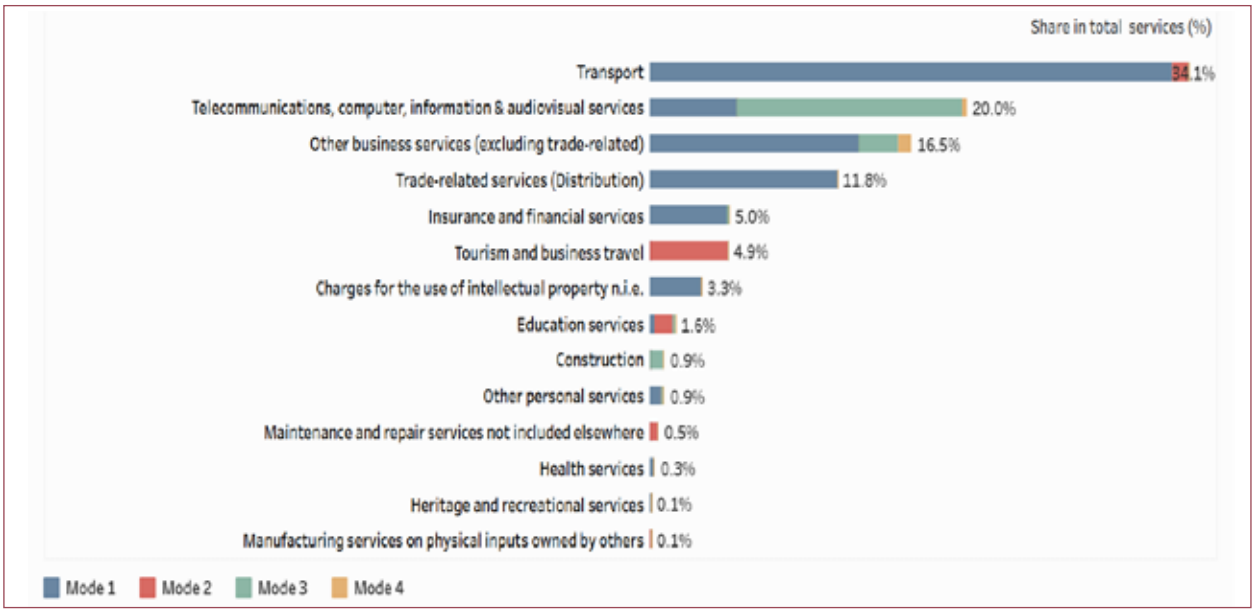


Source: WTO

In the case of imports of services, the trade is heavily dominated by Mode 1, which accounted for 72.8 per cent of the total services imports, indicating that most services are delivered remotely, such as IT, digital, and professional services (Figures 8.7 and 8.8). Mode 3 contributes 18.2 per cent, reflecting the role of foreign firms operating within India. Mode 2 imports stand at 7.7 per cent, which captures spending by Indians on services overseas, including travel and education, while imports through Mode 4 remain low at only 1.3 per cent, showing limited reliance on foreign individuals physically entering India to provide services.

Upon analysing the trend at the sectoral level, it can be observed that transport services dominate India's services imports, having a 34.1 per cent share, highlighting dependence on foreign logistics and shipping. Telecommunications, computer, information, and audiovisual services represent 20 per cent of imports, highlighting the growing role of

Figure 8.8: Structure of India's Mode-wise Services Import in 2022



Source: WTO

digital technologies and knowledge-based services in the economy. Other business services contribute 16.5 per cent, while trade-related distribution services make up 11.8 per cent, indicating the importance of external expertise and support services in facilitating business operations and commerce. Insurance and financial services account for about 5 per cent, while tourism and business travel add 4.9 per cent, aligning with the moderate share of consumption abroad. Smaller categories such as intellectual property charges (3.3 per cent), education (1.6 per cent), construction and personal services (each around 0.9 per cent), and health and recreational services contribute only marginally. Overall, India's services imports are concentrated in transport and digitally deliverable services, with cross-border supply (Mode 1) being the dominant mode.

After analysing India's trade in services, it is important to examine the trade in services profile of ASEAN to better understand how cooperation between the two can be leveraged for deeper integration.

8.2.2. ASEAN

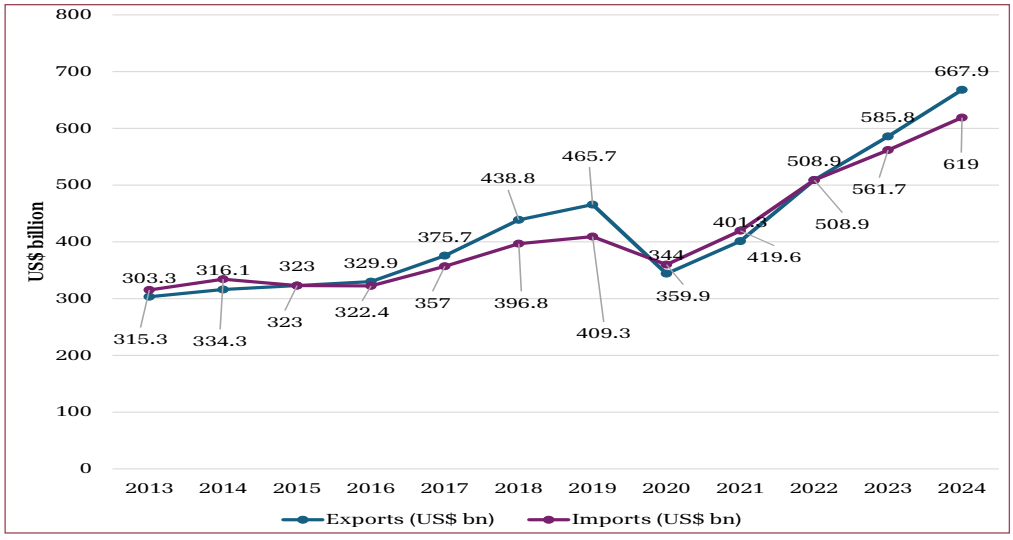
Over the past decade, ASEAN's trade in services has also grown significantly. Table 8.1 shows that ASEAN's total trade in services amounted to US$ 1286.91 billion, comprising US$ 667.95 billion in services exports and US$ 618.96 billion in services imports. The contribution of trade in services across ASEAN member states is highly concentrated, with a few economies. Singapore dominates ASEAN's services, with more than half of ASEAN's global services accounting for almost 58 per cent of the total ASEAN services amounting to US$ 746.82 billion in 2024, reflecting its major role in sectors like financial, logistics, transport and business services. Thailand

Table 8.1: Global Trade in Services of ASEAN Member States, 2024

Country	Export	Import	Total
	(US$ billion)		
Brunei Darussalam	0.41	1.74	2.15
Cambodia	4.96	3.07	8.03
Indonesia	39.00	57.67	96.66
Lao PDR	1.73	1.27	3.00
Malaysia	53.07	55.62	108.69
Myanmar	1.83	1.34	3.17
Philippines	51.98	37.40	89.38
Singapore	395.63	351.18	746.82
Thailand	72.14	73.64	145.79
Timor Leste	0.08	0.43	0.51
Viet Nam	47.12	35.60	82.72
ASEAN	667.95	618.96	1286.91

Source: ASEAN Stat

Figure 8.9: Trends in ASEAN's Global Trade in Services



Source: ASEAN Stat

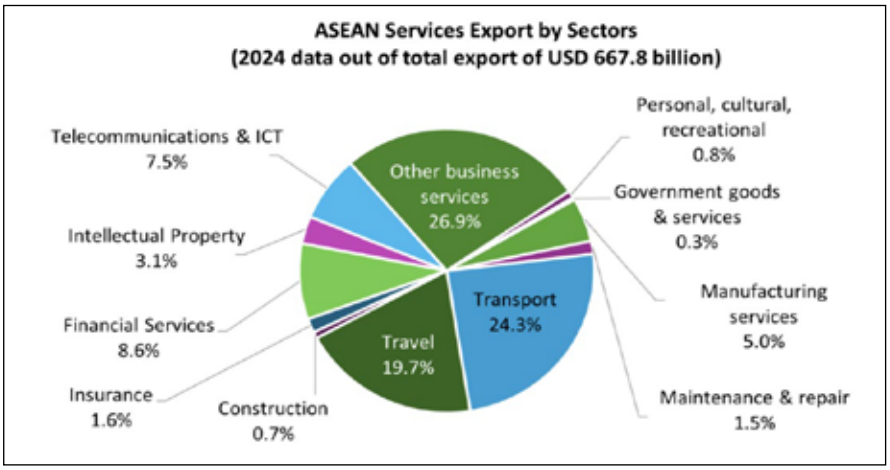
ranks second with US$ 145.79 billion in total trade in services, followed by Malaysia (US$ 108.69 billion), Indonesia (US$ 96.66 billion), the Philippines (US$ 89.38 billion), and Viet Nam (US$ 82.72 billion).

Figure 8.9 shows a decade-long journey of ASEAN's trade in services, where services exports increased from US$ 303.3 billion in 2013 to US$ 667.9 billion in 2024, more than double over the period. Similarly, services imports rose from US$ 315.3 billion in 2013 to US$ 619 billion in 2024, reflecting the growing integration of ASEAN economies into global services markets. This consistent growth of ASEAN's trade in services reflects the region's increasing role in global services value chains and the expansion of high-value sectors such as transport, tourism, finance, information and communication technology (ICT), and professional services. The rapid rebound following the pandemic demonstrates the resilience of ASEAN's services sector and its growing importance in supporting cross-border trade in services.

Services are an expanding component of ASEAN economies. In 2024, they accounted for 38–77 per cent of GDP across ASEAN Member States, with a median share of 50.6 per cent.[4] Except for the pandemic-related contraction in 2020, ASEAN's services exports rose steadily over 2013–2024; the region has recorded a services trade surplus since 2016.

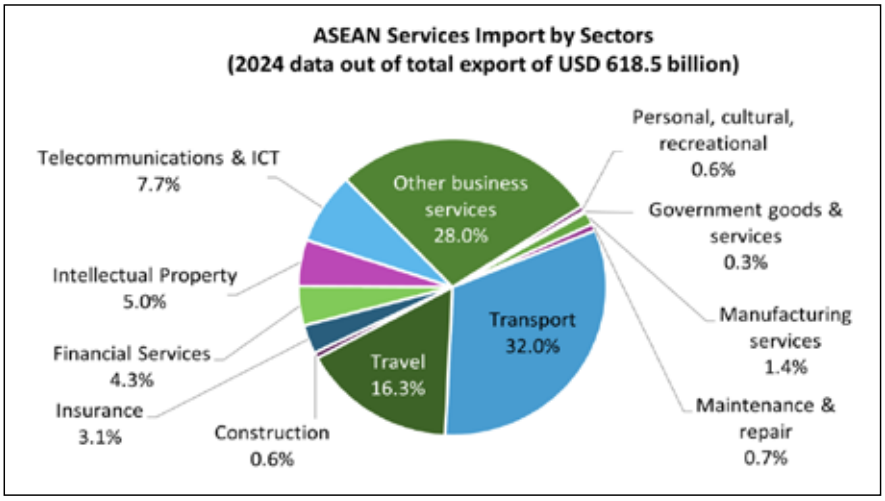
Illustrated in Figure 8.10, ASEAN's services export structure in 2024 is relatively diversified, though a

Figure 8.10: ASEAN Services Export by Sectors, 2024



Source: ASEAN Stat, 2025

Figure 8.11: ASEAN Services Import by Sectors, 2024



Source: ASEAN Stat, 2025

few sectors clearly dominate. Sectors such as other business services (26.9 per cent) and transport (24.3 per cent) together account for over half of total exports, indicating the region's trade competitiveness in logistics, professional services, and intermediary business activities. Travel services also form a significant share (19.7 per cent), reflecting ASEAN's continued reliance on tourism as a major foreign exchange earner. Financial services (8.6 per cent) and telecommunications and ICT (7.5 per cent) contribute moderately, suggesting growing but still secondary roles in the export mix. In contrast, sectors like intellectual property (3.1 per cent), manufacturing services (5 per cent), and smaller categories such as insurance, construction, and personal or government services remain relatively limited, highlighting scope for further diversification and upgrading in high-value, knowledge-based services.

Similarly, on the import side, there is a higher concentration in transport services accounting for 32 per cent, which is higher than its export share (Figure 8.11). Therefore, what follows is that ASEAN still mainly depends on external logistics, shipping and freight services. The other major sector is business services, accounting for 28 per cent, suggesting continued reliance on foreign expertise and business support functions. Compared to exports, travel imports (16.3 per cent) are slightly lower, indicating that ASEAN remains a net exporter. Further, financial services (4.3 per cent) and ICT services (7.7 per cent) account for a moderate share of ASEAN's services imports, but they are not considered the main contributors. Intellectual property services (5 per cent) imports are higher than exports, suggesting that ASEAN still depends on foreign technology, innovation, and expertise. Imports of manufacturing services, maintenance and repair, and construction services remain relatively small, indicating limited reliance on industrial-related services from abroad. Overall, this pattern highlights a service sector that is strongly oriented toward tourism and business services, while continuing to rely on external providers for transport, advanced technologies, and knowledge-based services.

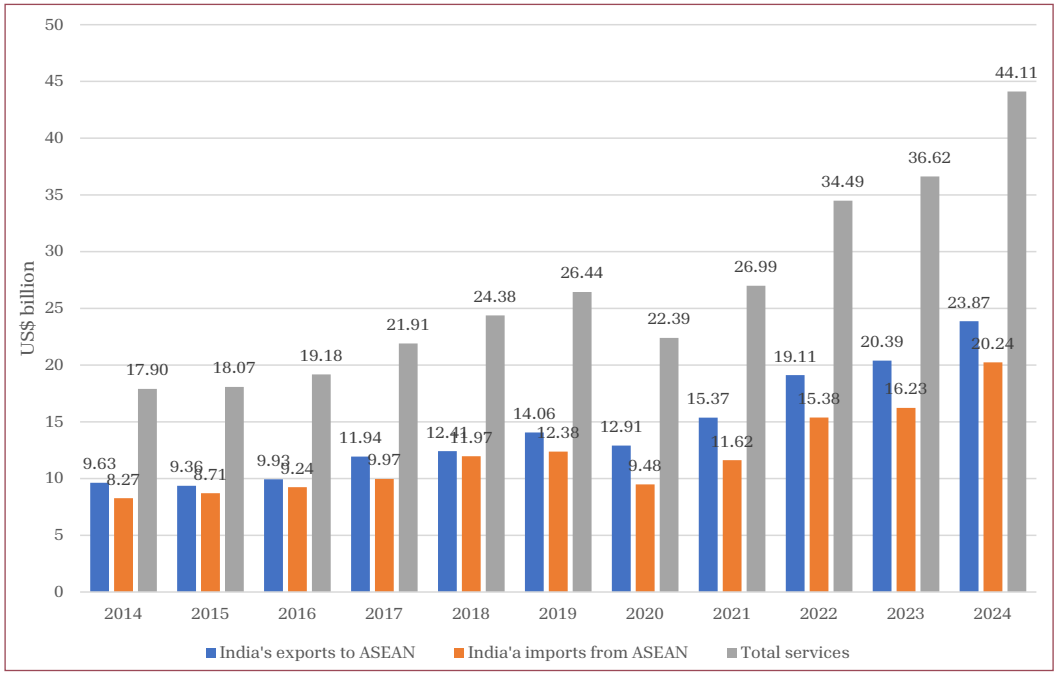
Notably, ASEAN Member States are not at the same level of development; rather, they show diverse patterns in trade in services. Singapore, for example, dominates the trade in services with the highest levels of both exports and imports,[5] followed by Thailand, Malaysia, and Indonesia. Despite robust growth, some ASEAN member states also experienced trade in services deficits. Meanwhile, the Philippines and Vietnam recorded moderate levels of trade in services with positive trade balances. Further, Cambodia, Myanmar, Lao PDR, and Brunei Darussalam have the least trade in services activities in the region.

8.2.3. Trade in Services Flow between India and ASEAN

Over the past decade, trade in services between India and ASEAN has grown considerably. India's export profile reflects an established position as a major provider of IT-enabled services, professional expertise, and back-office support, which may be beneficial to ASEAN economies. ASEAN's relatively high imports of intellectual property and business services suggest a continued demand for specialised knowledge-based services, creating opportunities for Indian firms in IT, consulting, and professional services.

Over the years, India's bilateral trade in services with ASEAN has expanded significantly, from US$ 17.90 billion in 2014 to US$ 44 billion in 2024 (Figure 8.12). Once the AITISA entered into force in 2015, there has been consistent growth in India's trade in services with ASEAN Member States, where both exports and imports have significantly improved over the decade. While both exports and imports have grown, India's exports have outpaced services imports, resulting in sustained trade even though temporary disruptions were visible during the pandemic period before trade recovered strongly. Services imports have observed a relatively slow-paced growth from US$ 8.27 billion in 2014 to US$ 20.24 billion in 2024, wherein the services exports stand at US$ 23.87 billion in 2024.

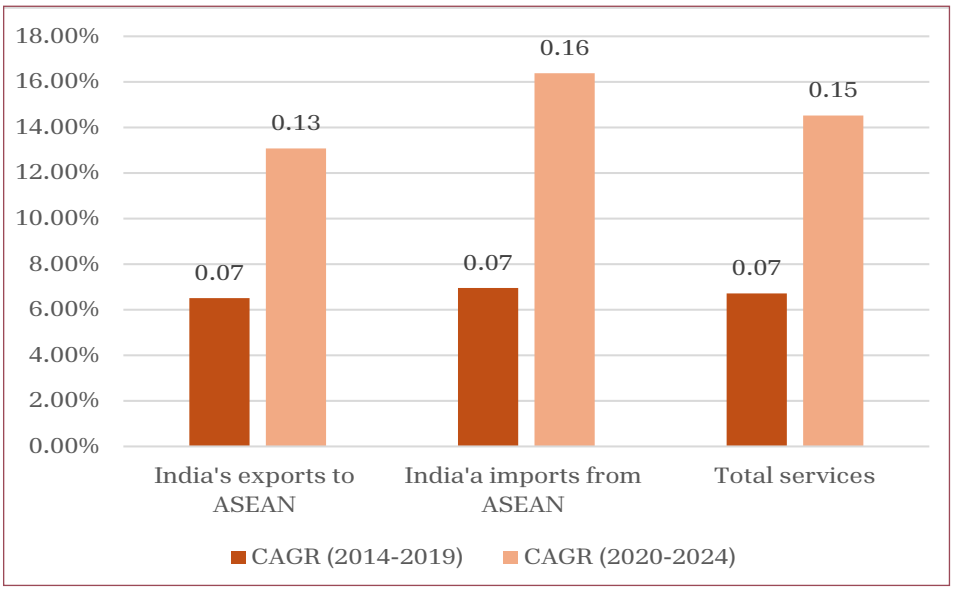
Figure 8.12: India's Trade in Services with ASEAN



Source: WTO Stat

Figure 8.13 shows that the compound annual growth rate (CAGR) of services exports between India and ASEAN member states has doubled from 6.51 per cent during 2014-2019 to 13.08 per cent during 2020-2024. A similar but even stronger trend is observed in the case of the CAGR of services imports between India and ASEAN member states, where the CAGR increased from 6.96 per cent to 16.38 per cent. Imports grew at a faster pace, highlighting the fact that ASEAN's export to India has increased significantly overtime. Similarly, India's total trade in services has grown significantly from 6.72 per cent during 2014-2019 to 14.58 per cent during 2020-2024.

Figure 8.13: Growth Comparison of India's Trade in Services with ASEAN



Source: Authors' calculation based on WTO Stat

ASEAN also displays a trade in services structure that complements India's strengths. The region has a notable advantage in transport and travel services, with transport representing the largest component of both its exports and imports. This highlights ASEAN's strong role in shipping, freight, logistics, and regional infrastructure services, many of which are important for India's growing trade and supply chain networks. Further, as noted in the ASEAN–India Plan of Action (POA) for 2026-2030, one of the areas to focus on is maritime services.[6] Therefore, this is one area where both India and ASEAN can cooperate and benefit mutually.

These patterns indicate a broadly complementary bilateral relationship with substantial unrealised potential. AITISA therefore remains central to improving market access and enabling both sides to leverage their comparative strengths. The next section assesses the agreement.

8.3. ASEAN–India Trade in Services Agreement (AITISA)

The AITISA was signed on 13 November 2014 and entered into force on 1 July 2015.[7] However, in 2015 it was effective only for seven ASEAN Member States (AMS), and two others, namely, Indonesia and Cambodia ratified it in 2018.[8] AITISA marked a pivotal development in the evolution of trade in services. Being ASEAN's third agreement on trade in services, the AITISA builds upon the multilateral framework of the GATS, adopting a positive listing approach to schedule of commitments on services. While the AITISA reflects a cautious and calibrated liberalization strategy, it also reveals considerable asymmetries in sectoral coverage and depth of commitments among participating countries.

8.3.1. Overview of AITISA

The agreement is composed of four parts and contains an Annex on the movement of natural persons. Notably, the GATS Annexes (on the movement of natural persons supplying services, air transport services, financial services, and telecommunications) shall apply to this agreement mutatis mutandis.[9] The agreement has also provided certain flexibility toward certain countries, such as the least developed countries or those that joined ASEAN later, such as Cambodia, Lao PDR, Myanmar and Vietnam.[10] The agreement applies to measures affecting trade in services except in the exercise of governmental authority, procurement for governmental purposes by governmental agencies for purposes other than commercial resale and cabotage of maritime transport services.[11] The core of the agreement is fundamental legal principles that promote fairness and non-discrimination. Under Article 3, Parties are required to publish all relevant measures and respond to information requests, while Article 4 provides liberty to Parties to protect confidential information. It also requires measures adopted by Parties to be objective, impartial, and not unnecessarily burdensome, with proper review mechanisms and transparent licensing procedures.[12] Further, it allows for mutual recognition of qualifications[13] and anti-competitive conduct is discouraged.[14] The agreement does permit temporary measures to be imposed in exceptional situations and allows for policy flexibility.[15] Articles 14-16 further address subsidies, cooperation, and special provisions (to support the participation of the few countries mentioned above). Article 17-22 sets out the specific commitments governing market access and non-discrimination. Article 17 bars quantitative restrictions (on service suppliers, operations or foreign investment) unless specified in a Party's schedule and Article 18 ensures foreign services and suppliers receive treatment no less favourable than domestic ones. Additional commitments allow further obligations on standards and licensing, while Article 20 requires Parties to clearly list sectors, conditions, and limitations. Article 21 explains how commitments apply across India and ASEAN states, Article 22 permits changes to commitments subject to notification, negotiation, and compensatory adjustment to maintain overall balance.

Finally, the agreement establishes institutional, procedural, and final provisions to manage implementation and future development. Furthermore, Article 31 on the denial of benefits is based on Article XXVII of GATS and allows a Party to deny the benefits of the agreement, inter alia, for the supply of a service, if it establishes that the service is supplied from the territory of a third party or if either a natural person or juridical person is from another Party. Overall, the agreement is mostly aligned with the provisions of GATS. However, certain GATS plus provisions include designation of contact points for better communication[16], establishment of a joint committee to review the agreement,[17] along with a comprehensive review clause.[18]

Part III of the agreement contains disciplines related to the specific commitments made by each party in their individual Schedules, where a positive listing approach is used. The agreement has gone beyond GATS in terms of market access commitments, and the details of which are provided in the previous edition of this Report, namely, *ASEAN-India Development and Cooperation Report 2021*.

8.3.2. Sectoral Level Assessment of AITISA

The objective is to identify patterns of engagement across different sectors, assess the extent to which the agreement has facilitated trade in services, and uncover areas of complementarity between India and ASEAN economies. Given the growing importance of services in regional and global value chains, understanding the nature and trajectory of ASEAN–India trade in services at a sectoral level is essential for evaluating the effectiveness of the agreement and its broader economic implications. Some service sectors which are vital for both the economies are dealt with henceforth. Although, several other sectors are also crucial to India-ASEAN trade in services, tourism and financial services have been selected for detailed examination because of their significant economic significance and distinct patterns of comparative advantage. Digitally deliver services are also analysed further to assess the emerging opportunities for cooperation in the rapidly evolving digital economy.

(a) Tourism

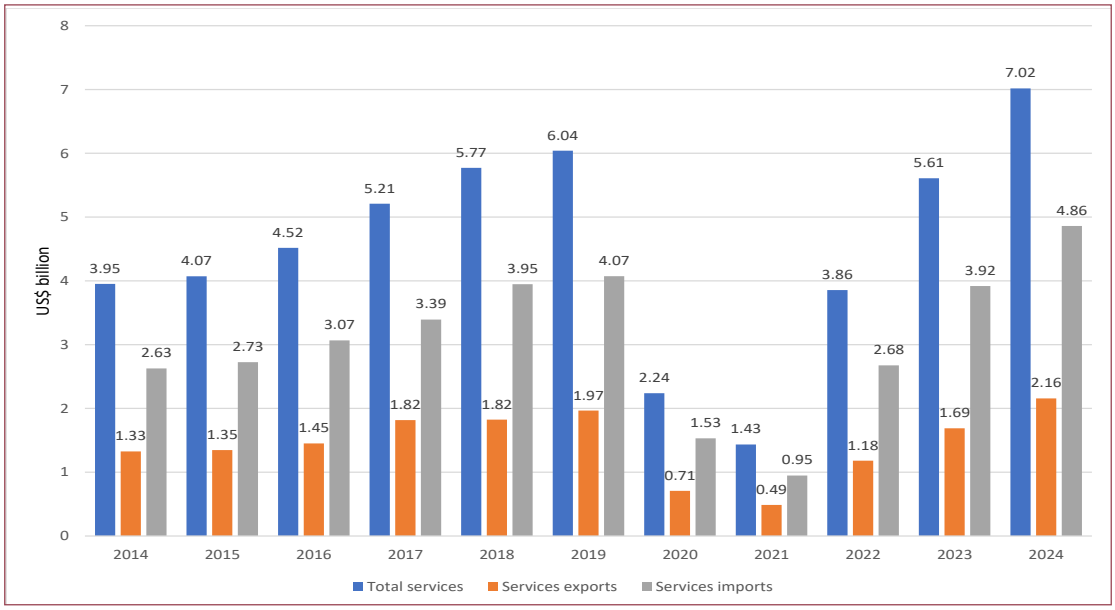
Tourism plays an important role for nearly all WTO members, especially in terms of its contribution to employment, GDP, and the generation of foreign exchange.[19] According to India's TPR 2026[20], India accounted for 1.4 per cent of international tourist arrivals (ITAs), equivalent to some 20.57 million ITAs, and 2.0 per cent of worldwide tourism receipts. Tourism and travel-related services include services provided by hotels and restaurants (including catering), travel agencies and tour operator services, tourist guide services and other related services.

ASEAN constitutes a key source market for India's tourism sector, and India has consistently promoted its tourism products in the region through the Incredible India campaign as well as various promotional and outreach initiatives.[21] Given the close geographical proximity and robust connectivity with several AMS, India recognises substantial potential for attracting tourists from the region. To strengthen tourism cooperation and increase tourist inflows from ASEAN countries, the Ministry of Tourism has also undertaken targeted promotional efforts in the ASEAN market. As part of these initiatives, a Memorandum of Understanding (MoU) on ASEAN–India Tourism Cooperation was signed in Indonesia in January 2012 during the 3rd ASEAN–India Tourism Ministers' Meeting.

Illustrated in Figure 8.14, India's trade in tourism services with ASEAN represents a consistent growth before the COVID-19 pandemic, rising from US$ 3.95 billion in 2014 to US$ 6.04 billion in 2019. Due to restrictions on international mobility, there was a decline in tourism services, but it recovered strongly post-2022 and accounted for US$ 7.02 billion in 2024.

Further, to assess the competitiveness of India and the ASEAN member states, global revealed comparative advantage (RCA) values of tourism services have

Figure 8.14: India's Trade in Tourism Services with ASEAN



Source: WTO Stat

been analysed and are provided in Table 8.2. ASEAN's tourism comparative advantage is driven primarily by Cambodia, Indonesia, Lao PDR, Thailand, and Malaysia, where the RCA value is above 1. It is further seen that RCA for India is lower than 1, which implies that India does not a have a comparative advantage yet, but can work toward creating an environment which would attract tourist.

Table 8.2: Revealed Comparative Advantage (RCA) of Tourism Services for India and AMS

Country	2020	2021	2022	2023	2024
India	0.62	0.36	0.45	0.49	0.47
Brunei Darussalam	1.03	0.10	0.32	1.08	1.58
Cambodia	5.57	2.79	4.02	3.81	3.71
Indonesia	2.17	0.37	1.92	2.16	2.17
Lao PDR	5.93	0.00	4.28	4.07	3.80
Malaysia	1.30	0.04	1.32	1.80	2.01
Myanmar	1.21	0.13	0.58	1.51	1.40
Philippines	0.54	0.18	0.67	0.98	0.93
Singapore	0.24	0.14	0.22	0.32	0.31
Thailand	4.00	1.76	2.49	2.75	2.98
Vietnam	1.18	0.06	0.60	1.25	1.32
ASEAN	0.80	0.25	0.60	0.87	0.93

Note: RCA referred to here is Global Revealed Comparative Advantage

Source: Authors' calculation based on data from IMF and ASEAN Stats

(b) Financial Services

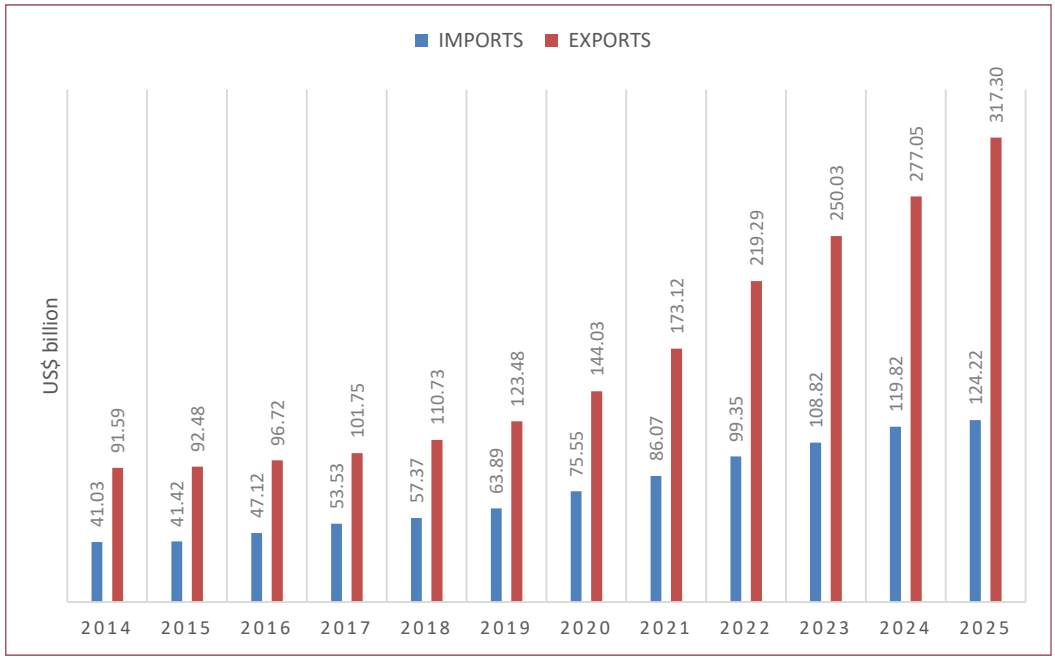
Financial services have gained impressive momentum in today's age of technology. Financial services include all insurance and insurance-related services, as well as banking and other financial services. India and ASEAN have embarked on an ambitious journey to enhance digital cooperation, particularly through cross-border payment linkages, a move that could transform regional financial landscapes.

Figure 8.15 illustrates India's trade in financial services with ASEAN between 2014 and 2024, where the trade has increased from US$ 0.63 billion in 2014 to US$ 1.74 billion in 2024. India's financial services exports more than doubled from US$ 0.27 billion in 2014 to US$ 0.62 billion in 2024, wherein imports consistently exceeded exports, rising from US$ 0.35 billion in 2014 to US$ 1.10 billion in 2024, indicating a persistent and widening trade deficit. A significant part of ASEAN trade in financial services is driven by Singapore, which is fast emerging as a global financial centre with its thrust on cutting-edge financial technologies and cross-border financial connectivity. The interoperability between India's Unified Payments Interface (UPI) and PayNow in Singapore is one of the major achievements in the development of cross-border payments. Through the elimination of inefficiencies in traditional payment systems, the collaboration may facilitate the efficient and seamless cross-border payment. Table 8.3 shows that the financial services sector is dominated by Singapore, while most other AMS, and India, do not demonstrate a strong RCA. For India and other AMS, they need to enhance the financial sector services and penetrate the regional financial market.

(c) Digital Delivered Services

The digital economy has become one of the most dynamic dimensions of the India–ASEAN economic partnership. Businesses now increasingly rely on cloud computing, e-commerce, artificial intelligence (AI), fintech, business process outsourcing, and digitally delivered professional services. While the AITISA does not contain dedicated digital trade provisions, it provides the basis for trade in many digitally deliverable services such as computer and related services, telecommunications, financial services, and professional services.

Figure 8.15: Trends in India's Trade in Financial Services with ASEAN



Source: WTO Stat

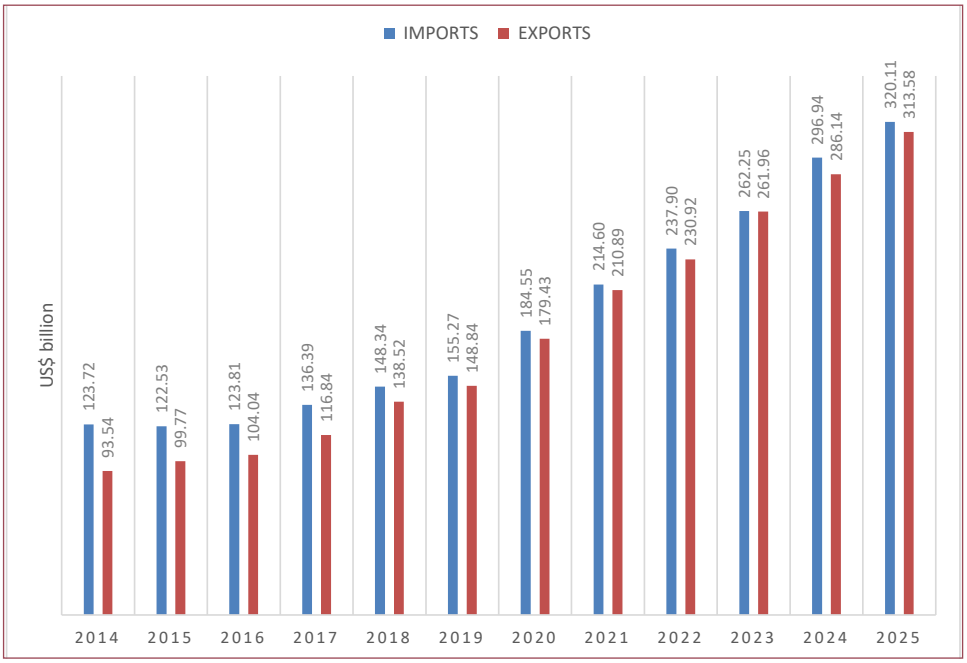
Table 8.3: RCA of Financial Services of India and AMS

Country	2020	2021	2022	2023	2024
India	0.18	0.20	0.26	0.29	0.25
Brunei Darussalam	0.01	0.01	0.02	0.01	0.02
Cambodia	0.27	0.53	0.19	0.06	0.03
Indonesia	0.32	0.51	0.42	0.66	0.47
Lao PDR	0.05	0.13	0.04	0.01	0.01
Malaysia	0.26	0.26	0.20	0.16	0.13
Myanmar	0.04	0.02	0.01	0.00	0.01
Philippines	0.03	0.05	0.07	0.07	0.09
Singapore	1.47	1.29	1.29	1.45	1.44
Thailand	0.22	0.27	0.23	0.20	0.14
Vietnam	0.03	0.04	0.04	0.08	0.07
ASEAN	1.04	1.02	0.95	0.99	0.96

Source: Authors' calculation based on data from IMF and ASEAN Stats

As shown in Figure 8.16, India's digitally delivered services trade has increased significantly during 2014-2025, with exports of digitally delivered services exceeding its imports. Throughout the period, India has maintained a decent trade surplus in this sector, with US$ 50 billion in 2014 to US$ 190 billion in 2025. India is well-positioned to benefit from this transformation due to its globally competitive IT and IT-enabled services (ITeS) sector. Indian firms such as TCS, Infosys, Wipro, HCL Technologies, and Tech Mahindra have established a significant presence in ASEAN markets, offering services ranging

Figure 8.16: India's Total Digitally Delivered Services to the World



Source: WTO Stat

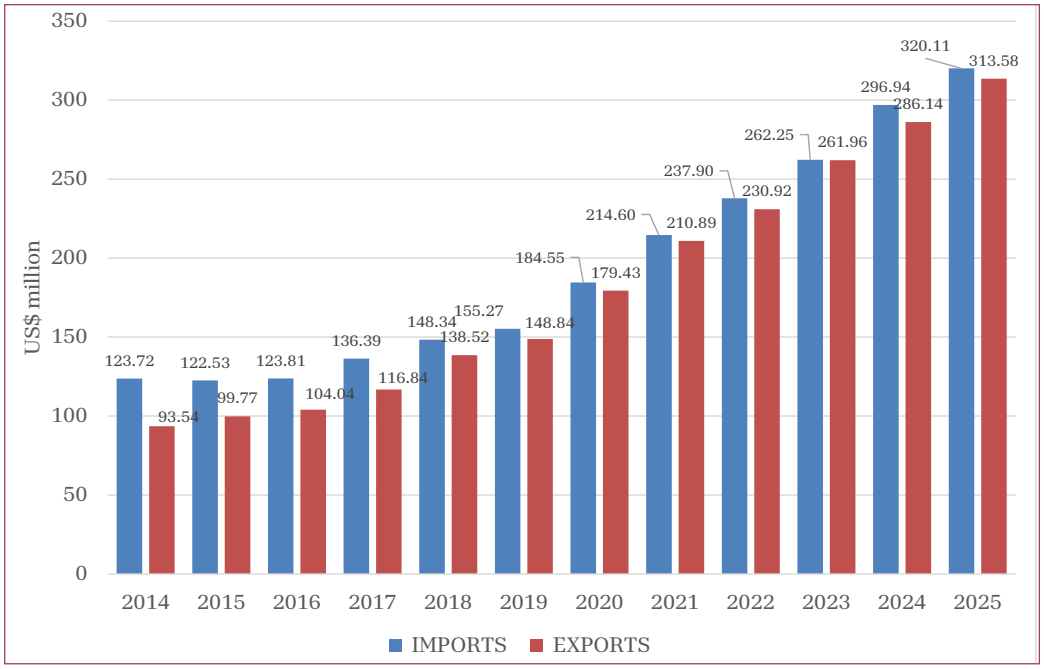
from software development and cloud solutions to cybersecurity, fintech, and digital consulting. Singapore acts as India's gateway to Southeast Asia and hosts many Indian technology firms owing to its advanced digital infrastructure and business-friendly regulatory environment.

ASEAN has also emerged as a major digital economy. Noted in Figure 8.17, ASEANs digitally delivered services have expanded significantly over the past decade, with both imports and exports growing significantly. The imports of digitally delivered services have increased from US$ 123.72 billion in 2014 to US$ 320.11 billion in 2025, and the exports have shown a triple fold growth from US$ 93.54 billion in 2014 to US$ 313.58 billion in 2025. Between 2005 and 2022, ASEAN's digital trade exports grew by almost 10 per cent annually, significantly faster than overall merchandise trade. Moreover, digitally deliverable services constituted nearly three-quarters (around 75 per cent) of ASEAN's total digital trade, highlighting the increasing importance of services over physical goods in the region's external trade.[22]

Further, several ASEAN economies are actively investing in digital transformation, creating new opportunities for Indian firms. Indonesia's rapidly expanding e-commerce market, Vietnam's digital manufacturing ecosystem, Malaysia's fintech initiatives, and the Philippines' globally competitive BPO industry have generated strong demand for software solutions, cloud services, cybersecurity, AI applications, digital payment systems, and professional IT consulting. India can leverage its strengths in Digital Public Infrastructure, including the UPI, Aadhaar-enabled digital identity, and India Stack, to collaborate with ASEAN on interoperable digital payments, digital identity systems, and e-governance solutions.

Despite these opportunities, regulatory fragmentation continues to constrain trade in services. ASEAN countries differ considerably in their approaches to cross-border data flows, data localization, cybersecurity standards, privacy regulations, consumer protection, and licensing requirements for foreign digital service providers. Such differences increase compliance costs for Indian exporters and reduce the scalability of digital business models. Restrictions on the temporary movement of professionals (Mode 4 under GATS), limitations on foreign equity participation in certain service sectors,

Figure 8.17: ASEAN's Total Digitally Delivered Services to the World



Source: WTO

and the absence of common digital standards further impede market access.

Looking ahead, digital trade is likely to become a cornerstone of India–ASEAN economic relations. As both India and ASEAN pursue ambitious digital transformation strategies, a deeper and more harmonized digital partnership can unlock substantial gains in trade in services, innovation, and regional economic integration.

8.4. Barriers to Trade in Services

This section discusses how domestic regulation affects trade in services through commercial presence and to what extent regulations have an impact on the choice of mode of servicing a foreign market for total services, financial services, transport, communication, computer, and other business services. Trade in Services Restrictions Index (STRI)[23] score provides one of the granular lenses available for understanding the actual framework of the barriers

Table 8.4: Overall Trade in Services Restrictions Index (STRI) of Key Services Sectors

Services Sector	Top 3 Most Restrictive Economies	Top 3 Least Restrictive Economies
Professional Services	The Philippines (83.0), India (77.9), Indonesia (75.8)	Lao PDR (39.8), Vietnam (56.3), Singapore (58.8)
Accounting Services	India (94.9), Myanmar (90.1), Indonesia (83.4)	Lao PDR (45.0), Vietnam (49.3), Singapore (58.8)
Auditing Services	Myanmar (100), India (94.9), Indonesia (83.5)	Lao PDR (45.0), Vietnam (49.3), Malaysia (58.8)
Architectural Services	Philippines (90.9), India (82.8), Thailand (67.6)	Myanmar (34.4), Lao PDR (40.0), Vietnam (43.4)
Engineering Services	Philippines (70.2), Thailand (60.6), Malaysia (60.1)	Myanmar (33.0), Lao PDR (35.8), India (41.3)
Computer And Related Services	Indonesia (58.5), Singapore (53.8), Vietnam (50.9)	Myanmar (17.8), Philippines (20.1), Lao PDR (20.1)
Communication Services	Indonesia (61.5), Thailand (59.9), India (56.3)	Myanmar (42.2), Lao PDR (43.2), Philippines (45.9)
Postal and Courier Services	Indonesia (70.9), Myanmar (59.4), India (57.2)	Lao PDR (36.4), Malaysia (47.7), Singapore (49.9)
Construction & Related Engineering	Philippines (57.0), Indonesia (55.5), Thailand (53.2)	Myanmar (26.4), India (42.2), Lao PDR (42.5)
Financial Services	India (80.0), Philippines (79.0), Thailand (71.3)	Lao PDR (41.1), Myanmar (41.6), Singapore (51.6)
Commercial Banking	Philippines (84.7), India (81.6), Thailand (70.3)	Myanmar (38.6), Lao PDR (42.6), Vietnam (49.2)
Health Services	Indonesia (52.8), Singapore (51.4), India (49.3)	Lao PDR (33.0), Philippines (40.6), Malaysia (41.8)
Tourism And Travel Related Services	Indonesia (73.0), Thailand (67.5), Vietnam (62.3)	India (46.6), Malaysia (49.6), Lao PDR (50.8)
Tourist Guides Services	Indonesia (100), Lao PDR (100), Myanmar (100)	Malaysia (57.0), India (64.3), Singapore (75.3)
Transport Services	Thailand (71.0), Indonesia (66.4), India (58.9)	Myanmar (37.4), Lao PDR (43.9), Malaysia (50.2)
Air Passenger Domestic	Myanmar (87.5), Indonesia (63.8), Malaysia (58.0)	Lao PDR (36.7), Philippines (48.2), Vietnam (48.6)
Air Passenger International	Myanmar (80.0), Thailand (67.8), Indonesia (66.5)	Philippines (59.3), Vietnam (60.1), India (60.4)

Sources: World Bank and the WTO

to trade in services between India and the ASEAN member states

Table 8.4 presents the most restrictive and least restrictive countries under AITISA in some of the key sectors based on the overall STRI scores. India emerges as one of the most restrictive countries across several key sectors. It ranks among the top three most restrictive countries and has the highest STRI scores for Accounting Services (94.9), while also ranking second in Auditing Services (94.9), Architectural Services (82.8), Commercial Banking (81.6), and Professional Services (77.9). After India, the Philippines is the second-highest restrictive ASEAN Member State who has high STRI scores in Architectural Services (90.9), Commercial Banking Services (84.7), and Financial Services (79), followed by Indonesia and Thailand. For India, low restrictiveness is observed in engineering services, construction and related engineering, tourism and travel related services, and international air passenger services. India records the lowest STRI score among all countries in tourism and travel-related services (46.6). Among the ASEAN members, the Philippines records low restrictiveness in computer services, communication services, health services, and air passenger domestic and international services.

8.4.1. Challenges to Trade in Services between India and ASEAN

Despite sustained growth since AITISA entered into force in 2015, structural, regulatory, and institutional constraints continue to limit deeper services integration. Table 8.5 summarises the principal barriers.

Further connectivity constraints also remain a significant obstacle to deeper services integration. While tourism, air transport, and business travel between India and ASEAN have increased considerably, direct connectivity between several Indian and ASEAN cities remains inadequate. High logistics costs and underdeveloped transport infrastructure continue to affect tourism services, business mobility, and professional exchanges. In addition, limited awareness among businesses regarding market access commitments, regulatory procedures, and investment opportunities reduces the effective utilisation of the agreement.

Table 8.5: Barriers Faced by India in ASEAN

Barrier	Impact on Indian Firms	Countries where Prominent
Restrictions on movement of professionals (Mode 4)	Limits deployment of Indian IT engineers, consultants, architects, doctors	Malaysia, Indonesia, Thailand, Philippines
Foreign equity caps	Restricts establishment of Indian service companies	Indonesia, Philippines, Vietnam, Thailand
Licensing and qualification recognition	Professional qualifications often not recognised	Malaysia, Thailand, Indonesia
Local partner requirements	Mandatory joint ventures reduce operational flexibility	Indonesia, Vietnam
Data localisation and digital regulations	Increase compliance costs for Indian IT firms	Indonesia, Vietnam
Complex work permit rules	Delay project execution	Malaysia, Thailand
Public procurement restrictions	Domestic firms preferred in government contracts	Most ASEAN Member States

Source: Based on authors' reading of various literature and analysing the schedule of commitments in AITISA

Geopolitical and economic uncertainties further complicate ASEAN–India services integration. Global economic slowdowns, disruptions caused by the COVID-19 pandemic, and growing competition from other regional trade agreements have affected the pace of services liberalization. These challenges highlight the need for stronger regulatory cooperation, improved connectivity, greater harmonisation of standards, and enhanced institutional coordination to fully realise the potential of India-ASEAN trade in services.

8.5. AITISA in Comparison to Other Agreements

While India has a regional trade in services agreement with the ASEAN, it also maintains separate bilateral agreements with certain AMS, most notably Singapore and Malaysia which demonstrate a relatively higher level of ambition and liberalization when compared to AITISA. Under the 2005 India–Singapore CECA, Singapore's horizontal commitments largely mirror its GATS commitments; however, sector-specific liberalization goes much deeper than the AITISA covering several additional sectors, including secondary and post-secondary technical and vocational education services, environmental services, ambulance services, funeral services, and hairdressing services, among others.[24] Similarly, India's horizontal commitments under the agreement remain broadly aligned with its GATS schedule, but India has liberalised several sector-specific commitments and introduced new sectors such as library, archive, sporting, and recreational services that are not as extensively covered under the India–ASEAN framework.[25]

A similar trend is also visible in the India–Malaysia Comprehensive Economic Cooperation Agreement (MICECA) signed in 2011. Malaysia's horizontal commitments under the agreement remain largely consistent with its GATS commitments, but the agreement includes improved commitments in sectors such as rental and leasing services, tourism and travel-related services, and health and social services.[26] India's commitments under MICECA are generally similar to those under the India-ASEAN framework, although certain improvements

Table 8.6: A Snapshot of ASEAN's Two Modern FTAs and India's Two Modern FTAs

Agreement	Commitment
ASEAN–China FTA (ACFTA)	China: Expanded commitments beyond GATS by allowing wholly foreign-owned enterprises in software implementation, translation, market research, project management, real estate services, environmental services, building cleaning, and packaging printing (subject to economic needs tests in some cases). Introduced new commitments in sports promotion/facility operation and transport services (motor vehicle maintenance, passenger transport). Relaxed establishment requirements for computer reservation systems and removed economic needs tests for aircraft repair joint ventures. ASEAN: Offered selective GATS-plus improvements. Brunei expanded tourism and transport; Cambodia largely replicated GATS but retained broad commitments across business, telecom, construction, finance, health, tourism and transport; Indonesia added construction, tourism and energy services; Lao PDR committed only in financial services; Malaysia added education, ICT, convention centres, theme parks and transport; Myanmar expanded business, audiovisual, financial and transport services; Philippines added business, construction, environmental and energy services; Singapore broadened commitments to distribution, education, environmental, health, recreation and transport; Thailand added education and maritime cargo handling; Viet Nam largely replicated GATS with phased liberalization in telecommunications, finance, distribution and transport.

Continued....

Continued....

Agreement	Commitment
RCEP	Introduces ASEAN's first forward-looking MFN obligation in services and investment. Adopted a negative-list approach for investment and requires positive-list members to transition to negative listing within six years. Includes a ratchet mechanism locking in future unilateral liberalization. Expands commitments in professional, education, healthcare and other business services across several members, improving market access in legal, engineering, accounting, architecture, education, hospitals, consulting, advertising, R&D and real estate services.
India-EU FTA	EU has offered broader and deeper commitments across 144 services subsectors, including IT/ITeS, professional services, education and other business services. India's offer covers 102 subsectors, including professional, business, telecommunications, maritime, financial and environmental services, reflecting a balanced exchange of market access commitments.
India- New Zealand FTA	New Zealand offers market access in 118 services sectors, including computer-related, professional, audiovisual, business, telecommunications, construction, distribution, education, environmental, financial, tourism and travel services. Provides MFN commitments in 139 subsectors. Includes enhanced Mode 4 commitments allowing up to 5,000 Indian professionals (IT, healthcare, engineering and specialized workers) to work for up to 3 years. Students can work 20 hours/week with extended post-study work rights (STEM Bachelor's: 3 years; Master's: up to 3 years; PhD: up to 4 years). Also includes cooperation in health and traditional medicine (Ayurveda, Yoga and wellness), benefiting MSMEs and wellness service providers. Reciprocally, India has also provided GATS plus commitments and has committed to sectors such as engineering services, environmental service, tertiary and adult education, audio-visual services, and others.

Source: Authors' assessment by analysing the FTAs

were made in professional services, research and development, computer-related services, telecommunications, and construction services.[27] These bilateral agreements, concluded before the AITISA, indicate that ASEAN member states have often been more willing to undertake ambitious liberalization commitments in bilateral settings than within a broader regional grouping.

The approach of both India and ASEAN toward services liberalization has evolved considerably over time as both sides have increasingly engaged in modern free trade agreements with deeper and more comprehensive commitments. A snapshot of India and ASEAN agreements relating to trade in services is provided in Table 8.6.

Therefore, there is a growing need to re-examine and upgrade the AITISA. Compared to newer-generation agreements, AITISA remains relatively modest in terms of market access commitments, regulatory disciplines, digital trade integration, and professional mobility frameworks.

8.6. Conclusions and Policy Recommendations

India and ASEAN are important participants in global services trade, yet their bilateral engagement remains below potential. The analysis identifies strong complementarities alongside persistent regulatory and institutional constraints.

Some of the recommendations based on the analysis in this chapter are as follows:

- Future cooperation under the India-ASEAN trade in services framework should be based on a sector-specific approach to leverage its full potential.

Rather than pursuing uniform liberalization across all services, the Agreement could adopt a phased approach that prioritises sectors with demonstrated potential for complementarity.

- Given India's strong and improving comparative advantage in telecommunications and digitally delivered services, India and ASEAN should consider making digital trade a priority area under an upgraded AITISA. Cooperation could focus on facilitating cross-border data flows, interoperable digital payments, and cybersecurity. Digital identity, consumer protection, and regulatory cooperation, while addressing the data-localisation measures that increase compliance costs for service providers
- Uneven commitments across AMS, restrictions on movement of professionals, regulatory fragmentation, limited mutual recognition arrangements, and connectivity constraints continue to hinder the full potential of India-ASEAN services integration. Further cooperation in these areas is required.
- In future, India and ASEAN should consider undertaking a comprehensive review and upgradation of the agreement to make it more ambitious, contemporary, and commercially meaningful. Greater liberalization in key sectors such as healthcare, education, financial services, digital services, tourism, and professional services could significantly enhance bilateral economic integration.

Endnotes

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2 Refer Department of Commerce, Annual Report of 2025-2026.

3 Also refer, NITI Aayog (2025), p.4.

4 Refer, ASEAN (2025(a)), Trade in Services in ASEAN, ASEAN 2025.

5 Refer, ASEAN (2024b)

6 Sourced from ASEAN, para 2.4.3.

7 Refer, Committee on Regional Trade Agreements, Factual Representation of Agreement on Trade in Services between India and the Association of Southeast Asian Nations (Services), Report by the Secretariat, WT/REG372/1 (22 August 2016).

8 Refer ASEAN (2026c)

9 Art.28 of AITISA

10 Preamble of AITISA

11 Art.1 of AITISA

12 Art.5 of AITISA

13 Art.6 of AITISA

14 Art.7 of AITISA

15 See Art. 9-13 of AITISA

16 Art. 25 of AITISA

17 Art. 26 of AITISA

18 Art. 27 of AITISA

19 Refer Tourism and Travel related Services, World Trade Organization.

20 Refer India's TPR 2026, p 237.

21 Refer, Ministry of Tourism, Government of India, Annual Report 2025-2026, p. 5.

22 Refer, Digital Trade Review of the Association of Southeast Asian Nations, OECD

23 The World Bank-WTO trade in services Restrictions Index (STRI) ranges from 0 to 100, where 0 indicates that none of the restrictions underlying the index is applied, and 100 means that the subsector/mode is completely closed to foreign services and service suppliers. To obtain an overall STRI that combines the modes of supply in a subsector-level index, the trade restrictions by different modes were weighted according to their importance for the supply of the respective services in each subsector and then aggregated.

24 See WTO, Factual Representation of India-Singapore CECA, WT/REG228/1/Rev.1, p.20-24.

25 ibid.

26 See WTO, Factual Representation of India-Malaysia Economic Cooperation Agreement, WT/COMTD/RTA/5/1, p.28-31.

27 ibid.

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9 Standards, Accreditation, and Regulatory Cooperation in ASEAN-India Trade in Goods

Anil Jauhri and Om Stutee

9.1. Introduction

The next phase of ASEAN-India economic engagement in goods will be shaped not only by tariffs but also by the product quality and compatibility of regulatory systems. As tariffs have progressively declined through multilateral, regional, and bilateral trade agreements; standards, technical regulations, sanitary and phytosanitary (SPS) measures, conformity assessment procedures (CAP), and private standards have assumed growing significance in determining the actual conditions of market access. Trade competitiveness is therefore shaped not only by price and production efficiency, but also by the ability of businesses and national systems to demonstrate compliance with increasingly complex regulatory and buyers' requirements.

The growing centrality of standards and regulatory systems reflects broader structural changes in the global economy. Production processes are increasingly fragmented across global value chains (GVCs). At the same time, consumer expectations regarding safety and sustainability have intensified and governments have expanded regulatory oversight from areas such as product safety, health, and environment to climate action and sustainability. Private market actors have emerged as important influencers through voluntary certification and supply-chain requirements. Consequently, standards and quality infrastructure systems now function not merely as technical tools, but as integral components of trade governance, industrial competitiveness, consumer protection, and strategic economic policy. The expansion of ASEAN-India trade under the ASEAN-India Trade in Goods Agreement (AITIGA) has simultaneously increased the relevance of non-tariff measures (NTMs), regulatory compatibility, and institutional trust between the two sides. Understanding the structure and functioning of these systems, therefore, becomes essential for assessing both existing trade frictions and future possibilities for regulatory cooperation.

9.2. Standards, Accreditation, and Regulatory Cooperation

9.2.1. Standards and Technical Regulations Form the First Layer of this System

A standard is generally a voluntary technical specification developed by a recognised body. It may define product characteristics, test methods, terminology, packaging, labelling, performance, or management-system requirements. A technical regulation, by contrast, is mandatory. The distinction

is recognised in the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT Agreement), which covers technical regulations, standards, and CAPs while seeking to ensure that such measures do not create unnecessary obstacles to international trade (WTO, 1995a). In practice, the boundary is frequently bridged when governments reference standards into regulation. This conversion of voluntary specifications into mandatory requirements is a common regulatory technique, including in India through Quality Control Orders (QCOs) that notify specified standards as compulsory for particular product categories.

9.2.2. SPS Measures Form a Separate but Related Category of Regulation

The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) applies to measures intended to protect human, animal, or plant life or health from risks arising from pests, diseases, contaminants, toxins, additives, or disease-causing organisms in food, beverages, or feedstuffs (WTO, 1995b). The SPS Agreement is not an umbrella for all consumer or animal-welfare objectives; measures not falling within SPS definitions may be disciplined under the TBT Agreement or other WTO provisions. For ASEAN-India policy design, this distinction is operational: agri-food, fisheries, horticulture, and live-animal trade sit predominantly within SPS systems, while electrical goods, machinery, cosmetics, labelling, and most industrial goods sit primarily within the TBT domain.

9.2.3. National Quality Infrastructure

Standards and regulations do not function in trade unless there is an institutional chain that can (i) generate credible evidence of compliance and (ii) support acceptance of that evidence by regulators and markets. This chain is commonly framed as National Quality Infrastructure (NQI). It refers to the institutional framework that supports the development, implementation, verification, and recognition of standards and regulatory requirements. It includes standards bodies, metrology institutions, conformity assessment bodies such as testing and calibration laboratories, inspection bodies, and certification bodies, and accreditation bodies.

9.2.4. Basic Design and Architecture

The basic architecture of NQI to support regulations and market surveillance may be understood from the Table 9.1.

Table 9.1: Basic Architecture of NQI

Function	Institutional Role
Standards	Define technical requirements, specifications, and methods
Metrology	Ensures measurement traceability, accuracy, and reliability
Conformity assessment	Testing, inspection, certification, validation, and verification
Accreditation	Confirms the competence of laboratories, certification bodies, and inspection bodies

Source: Authors' own

This architecture also clarifies a key policy point: Trade costs do not disappear when tariffs decline; they can shift into verification and compliance friction when institutions are weak, fragmented, or not mutually recognised.

9.2.5. Conformity Assessment is the Operational Bridge between Technical Requirements and Market Access

It covers testing, inspection, and certification as well as validation and verification activities. Accreditation occupies a crucial middle layer because it is not product approval; it is a formal attestation that a laboratory, inspection body, certification body, or other conformity assessment body is technically competent to perform specified tasks. Accreditation,

therefore, provides a governance mechanism through which regulators and markets can place structured confidence in compliance evidence.

Regional arrangements within ASEAN explicitly link accreditation and mutual recognition to trade facilitation by reducing duplication of testing, inspection, and certification where regulatory confidence exists (ASEAN Secretariat, 2026). The TBT framework also recognises accreditation as a relevant indicator of technical competence when considering acceptance of conformity assessment results (WTO, 1995a). However, technical competence is necessary but not always sufficient for regulatory acceptance. Many regimes continue to require designated procedures, domestic registration, local authorisation, or regulator-to-regulator confidence mechanisms, even where test reports or certificates are technically credible.

9.2.6. Market Surveillance Forms the Post-market Enforcement Component of the Quality Ecosystem

It involves monitoring products already placed in the market to ensure continued compliance with applicable technical regulations, safety requirements, labelling obligations, and certification conditions. Effective market surveillance is essential for maintaining consumer protection and regulatory credibility. It is also important for regional cooperation because weak post-market enforcement in one jurisdiction can undermine trust in compliance systems across wider supply chains.

9.2.7. The International Quality Architecture Provides the Wider Reference Framework within which National and Regional Systems Operate

In industrial goods, the International Organization for Standardisation (ISO) and the International Electrotechnical Commission (IEC) sit at the core of international standardisation, while international disciplines shape how technical regulations and CAPs should be designed and applied (WTO, 1995a). In SPS domains, Codex Alimentarius, the World Organisation for Animal Health (WOAH/OIE), and the International Plant Protection Convention (IPPC) serve as central international reference points, consistent with the SPS Agreement's reference-body structure (WTO, 1995b). In accreditation and conformity assessment recognition, Global Accreditation Cooperation Incorporated (GACI) provides the international recognition architecture for accredited conformity assessment. It supports confidence in the competence of laboratories, inspection bodies, certification bodies, and validation/verification bodies.

9.2.8. Mutual Recognition Agreements (MRAs)

MRAs are intended to reduce compliance duplication by enabling acceptance of specified conformity-assessment outputs - such as test reports, inspection outcomes, and certificates, generated in another jurisdiction, within agreed scope and conditions. MRAs do not require harmonised standards or regulations; they operationalise trust through - scope definition, designation/listing of eligible conformity-assessment bodies, surveillance and handling of non-compliance, and regulator confidence. In ASEAN, sectoral MRAs demonstrate how recognition is operationalised through defined technical bases, listed bodies, and institutional procedures, which are discussed in later sections.

9.2.9. Private Standards Add Another Layer to this Compliance Landscape

WTO SPS and TBT disciplines apply primarily to governmental measures and regulations. However, market access increasingly depends on private and value-chain requirements that operate as de facto entry conditions even when not imposed by the state. Retailer and buyer driven schemes in agri-food, seafood, textiles, palm oil, timber products, organic products, and sustainability-linked sectors

impose audit, testing, certification, traceability, and documentation requirements alongside public regulation.

Examples include GlobalG.A.P. in agricultural value chains, Brand Reputation Compliance Global Standards (BRCGS) in food safety and retail supply chains, and the Roundtable on Sustainable Palm Oil (RSPO) in palm oil sustainability certification. These private requirements may also become trade-relevant when referenced in procurement policies, import protocols, sustainability due diligence frameworks, or buyer contracts. This compliance economy is particularly consequential for small and medium enterprises (SMEs) because it involves recurring audit, certification, documentation, and traceability costs (Kher, Jauhri, & Stutee, 2026).

This framework provides the basis for subsequent sections. The next section maps the quality ecosystems of India and ASEAN, including regional architecture and member-state systems. Later sections examine sectoral interfaces in trade, the principal sources of friction, and the institutional conditions under which ASEAN-India cooperation can support more predictable, credible, and business-enabling compliance pathways.

9.3. Quality Ecosystems in India and ASEAN: Institutional Architecture and Regional Interfaces

India and ASEAN operate distinct quality ecosystems that are functionally comparable but institutionally organised in different ways. India's quality ecosystem is nationally anchored and statute-led, while ASEAN's ecosystem is regionally coordinated across national systems. India operates through domestic institutions such as the Bureau of Indian Standards (BIS), sector regulators, accreditation bodies, export certification agencies, and promotion bodies. ASEAN operates through national standards and regulatory systems of member states, coordinated regionally through the ASEAN Consultative Committee on Standards and Quality (ACCSQ), sectoral bodies, and MRAs.

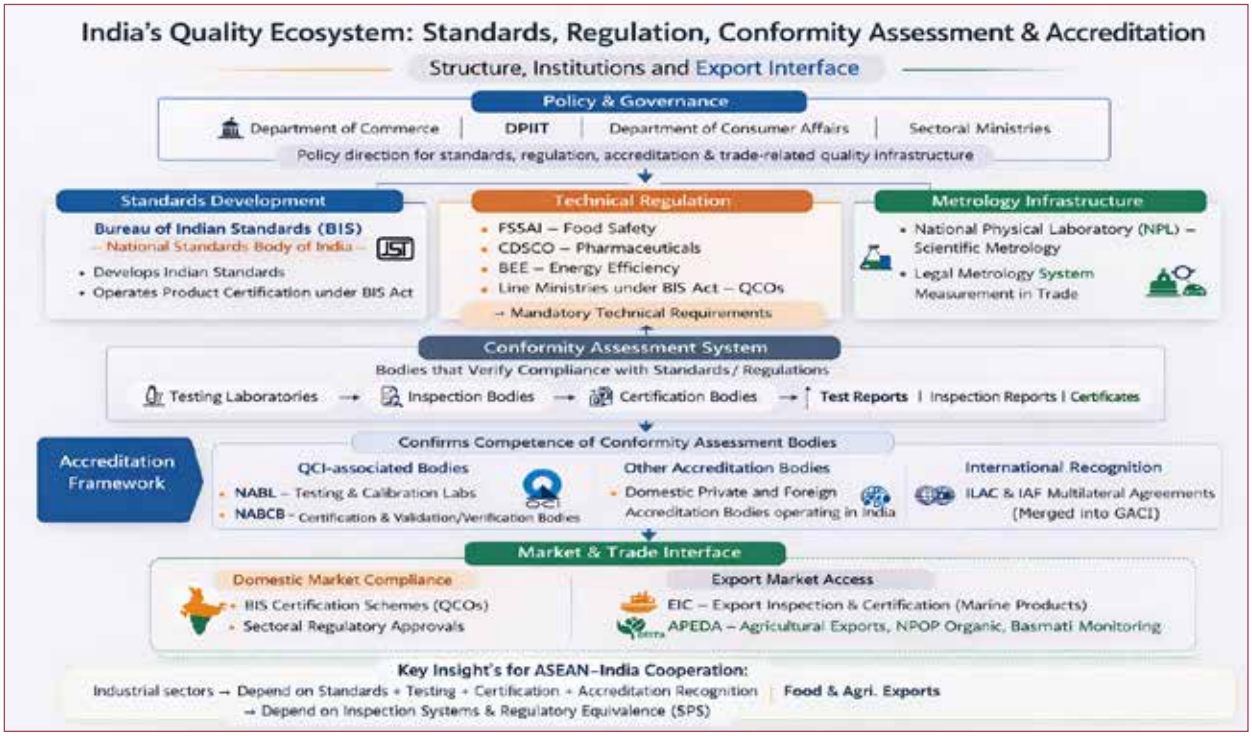
9.3.1. India's Quality Ecosystem

India's NQI comprises a standards framework covering regulatory and voluntary sectors, sectoral regulators, conformity assessment bodies, accreditation mechanisms, metrology institutions, consulting and training institutions, and export-facing agencies (Figure 9.1).

BIS is the central standards institution in India. It functions as the National Standards Body (NSB). Indian Standards are generally voluntary, but become mandatory when adopted into regulation, including through QCOs issued by line ministries under the BIS Act framework. The BIS Act empowers the Central Government, after consultation with BIS, to notify compulsory application of standards for specified goods, processes, or services, and BIS implements the associated certification/licensing arrangements under the Act and subordinate regulations (BIS Act, 2016). BIS' mandate includes - development and publication of Indian Standards, implementation of conformity-assessment schemes, laboratory recognition and operation for conformity assessment, hallmarking, and representation of India in ISO and IEC. This dual role of BIS - standards development and certification - is a distinctive feature of the Indian system and influences how Indian compliance evidence interfaces with external systems that are organised around accreditation-based third-party conformity assessment (Kher and Jauhri, 2025).

Technical regulation in India is distributed across sectoral authorities. The Food Safety and Standards Authority of India (FSSAI) regulates food standards, contaminants, additives, labelling and food imports; Central Drugs Standard Control Organisation (CDSCO) regulates pharmaceuticals, cosmetics and medical devices, including approvals, registration and Good Manufacturing Practices (GMP) related oversight; Bureau of Energy Efficiency (BEE) administers energy performance standards and labelling; Telecommunication Engineering Centre (TEC) deals with telecom equipment requirements; and automotive approvals operate through the Central Motor Vehicles Rules/Automotive Industry Standards

Figure 9.1: India's Quality Ecosystem



Source: Authors' own

(CMVR/AIS) framework and designated test agencies. Legal metrology and scientific metrology provide the measurement base through the legal metrology system and the National Physical Laboratory (NPL), respectively. Conformity assessment in India is carried out by laboratories, inspection bodies, certification bodies, and validation/verification bodies in both public and private sectors. Where there are no designated sector regulators, the BIS Act provides the instrument being sector neutral and a range of products from toys to textiles to chemicals to electrical appliances to electronics & IT goods to construction products are regulated under it.

The Quality Council of India (QCI) supports India's voluntary quality ecosystem through accreditation and quality-promotion activities. Accreditation for testing laboratories is provided principally through the National Accreditation Board for Testing and Calibration Laboratories (NABL), while the National Accreditation Board for Certification Bodies (NABCB) handles accreditation for certification, inspection, and validation/verification bodies, both having multilateral recognition arrangements with Global Accreditation Cooperation Incorporated (GACI). Alongside these national accreditation boards, India's accreditation landscape also includes private accreditation bodies operating with international recognition from GACI in laboratory accreditation, including Quality & Accreditation Institute (QAI), Federation for Development of Accreditation Services (FDAS), and International Quality and Accreditation Services Pvt. Ltd. (IQAS).

India's export-facing quality infrastructure operates through specialised agencies and sectoral bodies. The Export Inspection Council (EIC) provides export inspection and certification, especially in food and marine products. Agricultural and Processed Food Products Export Development Authority (APEDA) administers export systems for agricultural and processed food products, including the National Programme for Organic Production (NPOP) for organic certification. Commodity boards and Export Promotion Councils (EPCs), including sector bodies such as the Spices

Board, Coffee Board, Tea Board, Marine Products Export Development Authority (MPEDA), and others, support export promotion, documentation, certification awareness, and destination-market intelligence. These bodies play an important role in regulatory developments in destination markets that are increasingly sector specific. EPCs, commodity boards, and the Federation of Indian Export Organisations (FIEO) are well placed to monitor technical regulations and standards in export markets, maintain sectoral databases, and disseminate compliance information to industry. This distribution reflects sectoral specialisation but also means that trade-facing quality issues are spread across multiple authorities rather than handled through a single quality-governance mechanism.

9.3.2. ASEAN's Quality Ecosystem

ASEAN's quality ecosystem operates through regional coordination among sovereign national systems rather than through a single ASEAN-wide standards regulator. Member States retain legal responsibility for national standards, technical regulations, accreditation, conformity assessment, import approvals, and market surveillance. Regional cooperation is organised principally through the ACCSQ, which coordinates ASEAN work on standards, technical regulations and conformity assessment, accreditation cooperation and sectoral recognition mechanisms.

ASEAN's accreditation guidelines provide a useful lens for comparative analysis because they explicitly acknowledge uneven national capacity while preserving the integrity of competence assurance. The guidelines recognise three national institutional options: a Member State may designate a single National Accreditation Body (NAB), establish a National Accreditation Coordinating Body where more than one accreditation body operates, or appoint a National Accreditation Focal Point where no accreditation body exists. Where a Member State lacks a National Accreditation Body or where national accreditation scope is limited, conformity assessment bodies may rely on accreditation from recognised regional or international accreditation bodies, particularly those operating under the Asia Pacific Accreditation Cooperation (APAC) MRA and linked global recognition systems, with preference for ASEAN-based bodies where feasible. This design lowers the "infrastructure threshold" for participation in regulated trade without requiring every economy to establish full-spectrum accreditation capacity, while simultaneously signalling differentiated maturity across ASEAN national quality systems.

This differentiation is visible at the national level, as ASEAN member states maintain distinct standards and conformity assessment systems.

- Singapore's system operates through Enterprise Singapore and the Singapore Accreditation Council (SAC), with Singapore Standards and SAC accreditation relevant to electronics, food, telecom, and precision manufacturing.
- Malaysia operates through the Department of Standards Malaysia, which functions as both the NSB and NAB, with Malaysian Standards (MS), halal systems, medical device regulation, palm oil-related standards, and industrial product requirements forming important trade-facing areas.
- Thailand's quality system is centred on the Thai Industrial Standards Institute (TISI), with Thai Industrial Standards (TIS) relevant to automotive, electronics, machinery, and consumer goods.
- Indonesia has a separate standards and accreditation architecture through Badan Standardisasi Nasional (BSN) for Indonesian National Standards (SNI) and Komite Akreditasi Nasional (KAN) for accreditation, with SNI - halal certification, food, chemicals, and consumer goods forming major regulatory interfaces.
- Vietnam's standards, metrology, and quality system operate through the Directorate for Standards, Metrology and Quality (STAMEQ), including oversight of Vietnamese standards (TCVN) - relevant to electronics, machinery, textiles, food,

and export-oriented. Accreditation is administered through the Bureau of Accreditation (BoA) within the same administrative umbrella, which creates a relatively integrated governance structure for standards, metrology, and accreditation functions although they do have more accreditation bodies.

- The Philippines operates through the Bureau of Philippine Standards (BPS) and the Philippine Accreditation Bureau (PAB), with Philippine National Standards (PNS).
- The development gap remains a structural issue. ASEAN's ongoing "Strengthening the Quality Infrastructure in ASEAN" project explicitly targets Cambodia, Lao PDR, Myanmar, and Vietnam.
- Brunei Darussalam maintains standards and conformity systems with relevance to halal and food-related regulation.
- Cambodia's Institute of Standards of Cambodia, Lao PDR's Department of Standardization and Metrology, and Myanmar's national standards and metrology institutions continue to develop standards, conformity assessment, and SPS capacity.

Timor-Leste became ASEAN's eleventh member in 2025, adding a further capacity-building dimension to ASEAN's regional quality architecture.

9.3.3. Regional Comparison: ASEAN and SAARC

India's regional experience in South Asia provides a useful contrast. Within the South Asian Association for Regional Cooperation (SAARC), regional cooperation on standards has proceeded through the South Asian Regional Standards Organization (SARSO), which was created to support harmonisation and cooperation in standards and conformity assessment. However, SAARC has not developed a comparable operational architecture of sectoral MRAs, listed conformity assessment bodies, and regulator-led regional committees. At the national level, many South Asian countries, including India (BIS), follow a standards-body-centred regulatory model in which the national standards body has historically combined standards development with certification or conformity assessment functions both voluntary and under regulations, while accreditation is institutionally separate. ASEAN member states, by contrast, tend to follow a more separated quality-infrastructure model in which standards, accreditation, regulation, and conformity assessment are institutionally differentiated, though some combined models exist, such as Malaysia, where the Department of Standards Malaysia functions as both the NSB and NAB. This institutional differentiation, combined with production networks in electronics, automotive, food, and manufacturing sectors, partly explains why ASEAN has been able to build more sector-specific recognition mechanisms, while SAARC cooperation has remained more standards-centred.

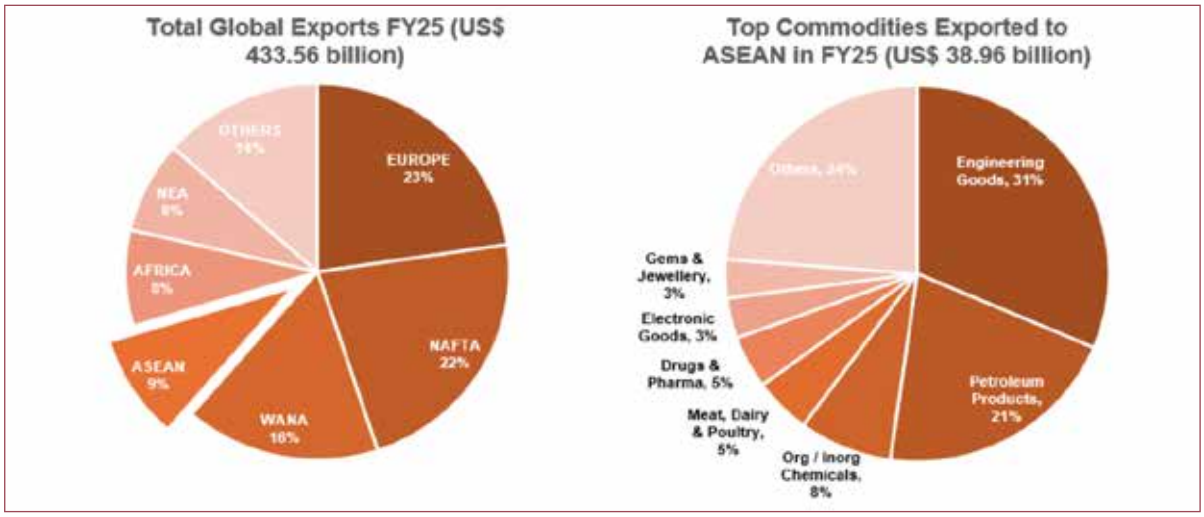
9.4. Trade Structure and Standards-Sensitive Sectors

9.4.1. Trade Profile

India-ASEAN trade has moved into a phase where binding constraints are increasingly "behind the border" - how regulatory requirements are specified, compliance evidence is generated, and whether that evidence is accepted without repeated testing, inspection, or re-certification. This section, therefore, links the trade basket to the market-access mechanics that shape realised trade outcomes in standards-sensitive sectors.

In FY2025-26, ASEAN accounted for about 9 per cent of India's global exports, and exports to ASEAN were about US$ 38.96 billion. India's export basket is led by engineering goods and petroleum products, with a material presence of standards-sensitive sectors such as chemicals and pharmaceuticals, and smaller but compliance-intensive lines in food products, electronics, and gems and jewellery (Figure 9.2). ASEAN's exports to India are concentrated in electronics and electrical machinery (including telecom equipment), chemicals and plastics, palm oil and processed foods, automotive components, machinery, and consumer products.

Figure 9.2: Total Global Exports and Top Commodities Exports to ASEAN in 2025



Source: NIRYAT, Govt. of India

The trade basket also indicates that not all high-value exports are equally relevant for standards cooperation. Petroleum products and bulk commodities account for a large share of trade value, but standards cooperation becomes most consequential in sectors where market access depends on compliance systems, technical documentation, inspection procedures, and conformity assessment outcomes. For India-ASEAN trade interests, the standards-sensitive core can be grouped into a small set of clusters, which may be grouped as highlighted in Table 9.2.

The compliance pathway differs across these clusters in predictable ways. Electronics and automotive products depend more heavily on technical standards, interoperability requirements, and testing/certification or type-approval systems, while food and agricultural products depend more on SPS controls, inspection systems, residue/contaminant limits, and traceability documentation, and pharmaceuticals depend on manufacturing oversight, GMP compliance, and product registration systems (Rath et al., 2025).

Table 9.2: Key Standards-Sensitive Export Sectors in India-ASEAN Trade

Product cluster	Representative HS-4 Export Products (India to ASEAN)
Food and agriculture	Rice (1006), pepper (0904), groundnuts (1202), frozen bovine meat (0202),
Pharmaceuticals and medical products	Medicaments (3004), APIs, medical devices
Chemicals	Heterocyclic compounds (2933), cyclic hydrocarbons (2902), insecticides (3808), coal-tar products (2707)
Automotive and machinery products	Diesel engines (8408), turbojets (8411), motor vehicle parts (8708),
Engineering materials	Aluminium (7601), zinc (7901), industrial materials
Jewellery	Diamonds (7102), jewellery articles (7113), precious metals,
Marine and transport equipment	Ships, floating structures, and transport equipment (8901)

Source: Authors' own

Jewellery and precious-metal products merit separate mention within the standards-sensitive trade basket because their market-access issue is different from most industrial goods. The concern is not only technical competence in testing or certification, but whether the importing jurisdiction legally accepts foreign assay and hallmarking systems. India's BIS hallmarking system provides domestic assurance of purity through assaying and hallmarking centres, but this assurance is not automatically recognised abroad since assaying centres are not accredited. Exporters may therefore face additional conformity assessment requirements in the importing market, including fresh assay, verification, documentation, or certification, unless India negotiates acceptance of assaying reports from assaying centres accredited as per ISO/IEC 17025.

This sectoral variation supports a sequenced approach, focusing first on areas where recognition of compliance evidence - test reports, inspection outcomes, certificates, and dossiers - can most credibly reduce duplication and improve market-access predictability.

9.4.2. Market Access Frictions

The main trade frictions in these sectors are procedural rather than tariff based. At the first stage, exporters may face difficulties in using tariff preferences because of rules of origin (RoO), documentation requirements, and the cost of obtaining certificates of origin. At the second stage, they face regulatory compliance costs linked to authorisations, registrations, product testing, inspections, certification, labelling, packaging, residue limits, traceability, and documentary proofs. These frictions become more costly when evidence generated in the exporting country is not accepted by the importing authority. Exporters may then face re-testing, additional inspection, duplicate certification, or repeated submission of technical documentation (De et al., 2019). In meat products, ASEAN-side requirements include technical requirements for TBT reasons, labelling and certification requirements, and, in some markets, a halal compliance interface that adds facility, segregation, and documentation conditions. This is where sectoral recognition mechanisms become relevant.

9.4.3. ASEAN's Sectoral Recognition Experience

ASEAN has developed six core product-sector MRAs relevant to standards and conformance, plus the ASEAN Harmonized Cosmetic Regulatory Scheme, which contains an embedded MRA (Schedule A). These arrangements provide practical examples of how recognition can be organised without creating a single regional regulator. They differ by sector, but they generally seek to reduce duplication while preserving the regulatory authority of Member States.

Across sectors, ASEAN MRAs follow a consistent trust architecture.

- At the technical level, ASEAN draws on internationally accepted bases rather than creating a single ASEAN rulebook - for example, IEC and ISO standards for EEE; United Nations Economic Commission for Europe (UNECE) UN Regulations for automotive type approval, and WTO TBT/SPS-consistent, Codex-linked regulatory reasoning in food-related systems.
- At the competence level, conformity assessment is anchored in the ISO/IEC framework (ISO/IEC 17000 family), including ISO/IEC 17025 for testing laboratories, ISO/IEC 17020 for inspection bodies, and, where relevant, ISO/IEC 17021 for certification of management systems and ISO/IEC 17065 for product/process certifications.
- At the recognition level, acceptance depends on accreditation-based confidence linked to international and regional arrangements such as GACI and APAC framework.

ASEAN also maintains MRAs in services - engineering, nursing, architecture/surveying, medical and dental practitioners, accountancy, tourism, with the explicit safeguard that MRAs do not override host-country

Table 9.3: List of ASEAN Sectoral MRAs

MRA	Sector	Year	Regulation
EEE MRA	Electrical & electronic equipment	2002	Core goods MRA
GMP Inspection MRA	Pharmaceuticals	2009	Regulatory reliance
Bioequivalence MRA	Generic medicines	2017	Acceptance of BE reports
Prepared Foodstuff MRA	Food hygiene systems	2018	System recognition
Automotive Type Approval MRA	Automotive products	2021	UN Regulations-based
Building & Construction Materials MRA	Construction materials	2024	Signed; implementation matters
Cosmetics Schedule A	Cosmetics	2003	Related embedded MRA

Source: Authors' own

laws and apply in accordance with prevailing domestic regulations. These services are relevant as an institutional model for committee-based recognition and defined procedures under domestic safeguards (ASEAN Secretariat).

9.4.4. Priority Sectors for Cooperation

Sectoral prioritisation is necessary as standards cooperation cannot be attempted across all products at once, and because conformity assessment recognition requires a defined scope and competence/

Table 9.4: ASEAN-India Cooperation in Standard

Sector	Key Traded Products	ASEAN Instrument	Indian System	Recognition Interface
Food & agriculture	Rice; meat; groundnuts; pepper	MRA on Inspection & Certification Systems for Prepared Foodstuff	FSSAI food control; EIC export inspection/ certification; APEDA export certification systems	System recognition/ inspection & certification outputs
Pharma-ceuticals	Medicaments	MRA on GMP Inspection of Manufacturers	CDSCO oversight; GMP inspections	Regulatory reliance/ inspection outcomes
EEE	Electronics and IT equipment	Sectoral MRA for Electrical & Electronic Equipment	BIS compulsory registration/certification routes; accredited testing laboratories	Test report and certification recognition (defined scope)
Automotive & machinery	Engines; auto parts	MRA on Type Approval for Automotive Products	CMVR/AIS type approval system	Type approval evidence recognition (UN-Regulations aligned where applicable)
Construction materials	Construction materials	MRA for Building and Construction Materials	BIS product standards and conformity assessment	Product-specific recognition within the MRA scope

Source: Authors' own

oversight conditions. The table 9.4 links priority sectors to the dominant market-access friction and to the relevant ASEAN instrument/experience base that can inform ASEAN-facing pathways.

9.4.5. Jewellery and Hallmarking

Jewellery and precious metals may be treated as a selective sectoral case because ASEAN includes important trading and re-export hubs, particularly Singapore. Singapore imported about US$778.58 million of pearls, precious stones, precious metals, and related articles from India in 2024, indicating a meaningful bilateral trade interface where purity assurance, assay systems, and hallmarking may matter for market confidence. Unlike most industrial goods, cross-border acceptance in this sector depends not only on technical competence, but also on whether the importing jurisdiction legally recognises foreign assay and hallmarking systems. As has been brought out earlier, India's BIS hallmarking system provides domestic assurance through assaying and hallmarking centres which are not accredited and hence not acceptable globally; ASEAN-facing cooperation would therefore require focused dialogue on acceptance of assaying reports from accredited laboratories since the purity standards are identical.

9.5. Policy Architecture for Cooperation

9.5.1. Standards Cooperation in the AITIGA Review Architecture

The AITIGA review process provides the principal formal channel for addressing standards-related and regulatory frictions affecting ASEAN–India trade. The review is being advanced through the AITIGA Joint Committee, supported by dedicated sub-committees that can address technical issues affecting trade outcomes.

At the 10th AITIGA Joint Committee meeting in August 2025, the sub-committees that met alongside the Joint Committee included the Sub-Committee on Sanitary and Phytosanitary Measures (SC-SPS), the Sub-Committee on Standards, Technical Regulations and Conformity Assessment Procedures (SC-STRACAP), the Sub-Committee on Rules of Origin (SC-ROO), and the Sub-Committee on Customs Procedures and Trade Facilitation (SC-CPTF). Within this structure, SPS implementation issues can be routed through SC-SPS, while issues relating to standards, technical regulations, and conformity assessment can be addressed through SC-STRACAP. Documentary and verification issues affecting preference utilisation and border clearance can be taken up through SC-ROO and SC-CPTF (PIB, 2025b).

9.5.2. ASEAN Implementation Instruments

ASEAN regional coordination under ACCSQ is operationalised through cross-cutting working groups and sector-specific product working groups that jointly drive ASEAN's standards and conformance agenda. The three cross-cutting working groups cover (i) MRAs and Standards, (ii) Accreditation and Conformity Assessment, and (iii) Legal Metrology. It is complemented by product working groups/committees that cover, among others, EEE, cosmetics, pharmaceuticals, prepared foodstuffs, traditional medicines and health supplements, automotive, medical devices, rubber-based and wood-based products (UNESCAP, 2016). This ACCSQ machinery provides the regional implementation platform for sector instruments and for the technical governance needed to sustain acceptance of conformity assessment outputs within the agreed scope.

ASEAN's operational guidance on standards, technical regulations and conformity assessment is codified in AG-STRACAP. It sets out modalities for harmonisation, MRAs, regulatory cooperation, harmonised regulatory regimes, transparency and consultation. Importantly, it also links recognition arrangements with post-market surveillance and information exchange, because confidence in regulated markets depends not only on pre-market assessment but also on how

non-compliance is detected, reported and corrected (ASEAN Secretariat, 2015).

The complementary ASEAN instrument is its MRA guidance, which clarifies scope limits and sequencing:

First, recognition arrangements reduce duplication within defined scope, but do not automatically remove administrative requirements embedded in technical regulations (e.g., supplier registration, import licensing, product information and labelling), which typically require separate regulatory cooperation tracks.

Second, where coverage is phased by product categories, scope can be managed through annexes that can be updated administratively as confidence and capacity expand. (ASEAN Secretariat, 2018).

9.5.3. India-side Systems that can Interface with ASEAN Pathways

India has developed sector-specific quality schemes with international alignment potential. The strongest examples are export-facing systems with defined assurance chains. The EIC seafood and other food certification systems and APEDA's NPOP provide stronger examples of India-based systems that have secured external recognition, such as the European Commission (EC). These systems are relevant in ASEAN-facing engagement because they provide identifiable "evidence owners" and documented assurance chains that can be used in regulator-to-regulator confidence-building in inspection- and certification-intensive sectors. (Kher, Jauhri and Stutee, 2026).

Other Indian schemes, such as AYUSH Premium Mark seeks to support quality assurance for Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH) products, while Indian Certification of Medical Devices (ICMED) / ICMED Plus provides certification frameworks for medical devices, both being based on global standards. These schemes are not substitutes for importing-country approvals, but they are relevant to future regulatory cooperation because they represent domestic attempts to organise quality assurance in sectors where global regulatory expectations are stringent and can be considered for acceptance.

A parallel compliance layer arises from private standards and buyer requirements, including recurring audit and documentation obligations that determine commercial entry into supply chains in food, medical devices, and automotive-related sectors. In the voluntary domain, India has also developed schemes oriented toward external benchmarking or recognition, including forest certification schemes by the Network for Certification and Conservation of Forests (NCCF), which are benchmarked with the Programme for the Endorsement of Forest Certification (PEFC), IndG.A.P. by QCI with potential endorsement by GlobalG.A.P., and the Indian Coffee Sustainability Standards and Certification Scheme (INDICOFS), which aims to benchmark with Global Coffee Platform (GCP).

India's trade-facing documentation and facilitation have expanded through digitisation, including the Directorate General of Foreign Trade (DGFT) platform for digital Certificates of Origin (CoO), the Department of Commerce's (DoC) linkage of digitised compliance certificates and eCoO 2.0 (electronic Certificate of Origin) to ease-of-doing-business objectives and QCI's proposed QR-enabled verification instruments (e.g., Q Mark/ "Desh ka Haq", online accreditation interfaces, and "Quality Passport"), indicate a move toward traceable and tamper-resistant compliance verification, aimed at reducing fraudulent certificates and enabling more trust-based compliance processes (PIB, 2025a).

9.5.4. Bilateral Pilots as Accelerators within a Regional Frame

Bilateral pilots can serve as accelerators where competent authorities have the capacity to run scoped recognition or acceptance exercises and feed the lessons into wider regional cooperation.

The India–Singapore experience is relevant in two ways. First, under CECA, both sides have pursued professional-services MRAs, including nursing recognition, while preserving host-country licensing requirements (RIS, 2017). Second, in May 2025, India and Singapore signed a Mutual Recognition Arrangement of Authorised Economic Operator (AEO) programmes, enabling certified companies under India's AEO programme and Singapore's Secure Trade Partnership-Plus programme to receive facilitated customs clearance when exporting to each other (Singapore Customs, 2025). The AEO MRA does not address product standards directly, but it is important for trade facilitation because it links trusted traders, documentary verification, reduced inspection burdens and faster clearance. Together, these examples show how bilateral recognition can be scoped, institutionally managed and used as a practical bridge toward wider ASEAN-India cooperation.

9.5.5. Capacity, MSME Readiness, and Integrity of Conformity Assessment

Recognition pathways are sustainable only when supported by credible oversight, competent conformity assessment, and effective post-market surveillance. ASEAN implementation guidance links recognition arrangements with information exchange and market surveillance. India's own quality-system analysis similarly highlights that greater reliance on third-party conformity assessment can improve scalability, but also creates risks if competence, supervision, and integrity are weak.

MSME readiness must therefore be treated as part of the cooperation agenda. Smaller firms often face recurring costs relating to testing, certification, audits, documentation, traceability, and private buyer requirements (Jauhri, Kher and Stutee, 2026). ASEAN-India cooperation should therefore include sector-specific compliance support, guidance material, helpdesks, training for conformity assessment readiness, and digital tools that reduce documentation burdens without weakening regulatory assurance.

9.5.6. Data Gap

A major constraint is the absence of a single publicly accessible India–ASEAN database on standards-related trade frictions. Information on testing failures, certification denials, SPS refusals, documentation deficiencies, product recalls and border rejections are dispersed across national regulator notices, commodity board actions, importing-country alert systems, WTO SPS/TBT notifications, media reports and third-market systems such as the EU Rapid Alert System for Food and Feed (RASFF).

This fragmentation itself is significant. Regulatory cooperation requires not only alignment of standards but also the systematic exchange of information on compliance failures, corrective actions, and risk trends. Without such data, cooperation risks remaining general rather than problem driven.

9.5.7. India and ASEAN in the Global Quality Infrastructure Index (GQII)

The GQII 2025 provides an evidence-based reference for identifying areas of convergence and complementarity between India and ASEAN economies in quality infrastructure. India ranks 11th overall, with comparatively strong component positions in accreditation (rank 7) and standardisation (rank 8), while its metrology rank is lower (31), reinforcing the value of a function-specific lens rather than a single aggregate comparison. Several ASEAN economies are placed within the GQII Top 100, with differentiated strengths across the three pillars: Indonesia ranks 23 overall with a particularly strong accreditation rank (4); Malaysia ranks 24 overall with a balanced profile and accreditation rank (19); Thailand ranks 29 overall; Singapore ranks 31 overall; Viet Nam ranks 49 overall with a strong accreditation rank (23) but weaker metrology rank (65); and the Philippines ranks 54 overall (Harmes-Liedtke et al., 2026).

This indicates that cooperation should not be framed as a single hierarchy between India and ASEAN. It should instead be function specific.

Accreditation-linked pathways may support test report acceptance and certification confidence; inspection-reliance discussions may be relevant in regulated sectors; and digital verification may improve trust in trade documentation. A function-specific approach would allow ASEAN-India cooperation to match institutional strengths on each side rather than assume uniform capacity across sectors or countries.

9.6. Conclusion

The central task now is to convert ASEAN-India standards cooperation from a dialogue agenda into an implementation agenda. This requires moving sector by sector, identifying where compliance evidence is duplicated, where regulatory confidence is weak, and where digital verification or scoped recognition can reduce avoidable costs for firms.

ASEAN's experience demonstrates that regional cooperation can progress through gradual, sector-led institutional convergence rather than through a single harmonised regulatory regime. For India, the practical pathway lies in building regulator-to-regulator confidence, strengthening digital compliance infrastructure, and expanding acceptance mechanisms where technical credibility and oversight conditions already exist. Future cooperation is therefore likely to evolve through modular arrangements: inspection reliance, digital certification exchange, trusted conformity assessment pathways, competent-authority dialogue, and scoped recognition mechanisms.

Standards and accreditation cooperation should now be viewed as part of economic strategy, supply-chain positioning, and industrial competitiveness. For firms, especially MSMEs, its value will lie in fewer repeated procedures, clearer documentation requirements, faster verification, and more predictable regulatory treatment. In that context, ASEAN-India cooperation on standards and accreditation should be viewed not merely as a trade-facilitation exercise, but as part of building a more resilient, trusted, and future-oriented regional economic relationship.

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10 Reinforcing ASEAN-India Production and Services Networks

Wannaphong Durongkaveroj

10.1. Introduction

Over the past few decades, international trade has been powered by global value chains (GVCs). GVCs are the inter-firm relationships among a set of firms engaged in 'global production sharing.[1] GVCs open up opportunities for countries to participate in a finer international division of labour, to specialise in different slices (tasks) of the production process in line with their relative cost advantage. In a labour -abundant economy, assembly activities within global production networks tend to be relatively more labour intensive (pro-poor) compared to conventional manufacturing (production from start to finish in just one country) of the given final product. Successful in integration of the manufacturing sector into production networks (in particular, labour-intensive tasks) has played a key role in employment generation and poverty reduction in China and other high-performing East Asian countries (Antràs, 2016; Athukorala and Hill, 2026).

The purpose of this chapter is to examine ASEAN-India production networks. ASEAN–India trade relations have evolved significantly over the past three decades. This has been driven by a gradual strengthening of institutional mechanisms for economic cooperation (De and Chirathivat, 2018). India became a sectoral dialogue partner of ASEAN in 1992 and was elevated to a full dialogue partner in 1995 (Zainal-Abidin, 1996). A major milestone was the first ASEAN–India Summit, held in Phnom Penh in 2002, which provided a platform for deepening economic and strategic engagement (Sen, Asher, and Rajan, 2004). This was followed by the Framework Agreement for establishing an ASEAN–India Free Trade Area (AIFTA) in 2003. These developments eventually led to the ASEAN–India Trade in Goods Agreement, which entered into force in 2010, and the ASEAN–India Trade in Services and Investment Agreement, which entered into force in 2015 (Arote et al., 2026). Recent development is the establishment of the ASEAN-India Comprehensive Strategic Partnership (CSP) aimed to enhance cooperation in several areas (e.g., maritime, security, and technology) (ASEAN Secretariat, 2026). These agreements offer an institutional foundation for expanding trade, investment, and production linkages between India and ASEAN.

However, GVC-related trade differs from traditional trade because it takes place within global production networks rather than simple exchanges of final

goods. GVCs reflect complex inter-firm relationships that take distinct forms depending on industry governance (Gereffi, 2015; Kano, Tsang, and Yeung, 2020). In buyer-driven GVC, typical of consumer goods industries with standardized technologies, such as apparel, footwear, and toys, the lead firms are international buyers, including large retailers and brand merchandisers. These production networks operate through arm's-length contractual relationships, enabling local suppliers to participate without direct foreign equity investment. Producer-driven GVCs operate differently. They are more common in vertically integrated industries (e.g., electronics, electrical machinery, and automobiles), where multinational enterprises often act as lead firms. As a result, participation in producer-driven GVCs depends more on firms' ability to meet the technical, quality, delivery, and coordination requirements of lead firms.

In this sense, GVC-related trade extends beyond the traditional determinants of international trade, for example, geographic distance, market size, and income levels. These factors are still important, but GVC participation also depends on the capabilities of domestic firms and the broader business environment. Countries are more likely to become attractive locations for GVC activity when they offer reliable suppliers, trainable labour, efficient logistics, institutions, and policy conditions that are conducive to the development of long-term production relationships. Building on this discussion, the next section outlines the key factors that can shape the development of ASEAN–India production networks.

10.2. Analytical Framework

Since GVCs involve cross-border dispersion of different tasks/slices of the production processes within vertically integrated global industries, countries compete to attract specific tasks within regional and global production networks. A country's ability to participate in GVCs depends not only on cost competitiveness but also on a broader set of economic and institutional conditions that facilitate cross-border production sharing. Among others, three factors are particularly important: advancements in production technology, the decline of service link cost, and trade liberalisation policy (Athukorala, 2019; Durongkaveroj, 2023).

First, rapid advances in production technologies have made it possible to carry out production processes across several locations. Different stages of production can be undertaken in different countries according to their comparative advantages, rather than requiring the entire production process to be concentrated in a single country. GVCs have been most pronounced in manufacturing because manufactured products can be decomposed into distinct tasks and components. Hence, they account for the majority of GVC-related trade.

Second, because GVC involves the fragmentation of production across different locations, effective coordination among production stages located across multiple locations is necessary. The cost associated with coordinating these activities is called "service link costs", which consist of transportation and communication costs. Communication costs include expenditure related to telephone services, the internet, and information exchange. Not only lower but also more reliable communication costs have made it profitable for firms to locate different stages of the production process across countries (Amador and Cabral, 2016; Baldwin, 2016). In addition, efficient logistics is also important because it enables the timely and reliable delivery of components/intermediate inputs between production sites. Although maritime transport is still the key mode of international freight, the declining cost of air transport has also contributed to the rapid expansion of GVCs.

Third, since GVCs involve products crossing borders multiple times during the production process, virtually zero or low tariff barriers are essential. Since the late 1980s, many developing countries have shifted from import substitution industrialisation (ISI) to export-oriented industrialisation (EOI) and

implemented broad trade liberalisation reforms. Examples include China's *Reform and Opening-up* policy in 1978, India's economic reforms in 1991, and Vietnam's Doi Moi reforms initiated in 1986. A reduction in tariffs increases the profitability of cross-border production, especially in manufacturing industries where profit margins are relatively thin. Another key policy reform was the establishment of the World Trade Organization (WTO) in 1995, which strengthened the multilateral trading system and reduced trade barriers between developed and developing economies (Fernandes, Kee, and Winkler, 2022). Additionally, the WTO's Information Technology Agreement (ITA) further facilitated GVC integration because of the tariff-free trade of IT products.

Together, these technological, logistical, and policy developments have transformed the organisation of global production. GVCs have become the dominant form of international trade, especially in manufactured goods. Against this backdrop, the next section examines the evolving GVC relationship between India and ASEAN, highlighting the extent and sectoral pattern of their integration into global production networks.

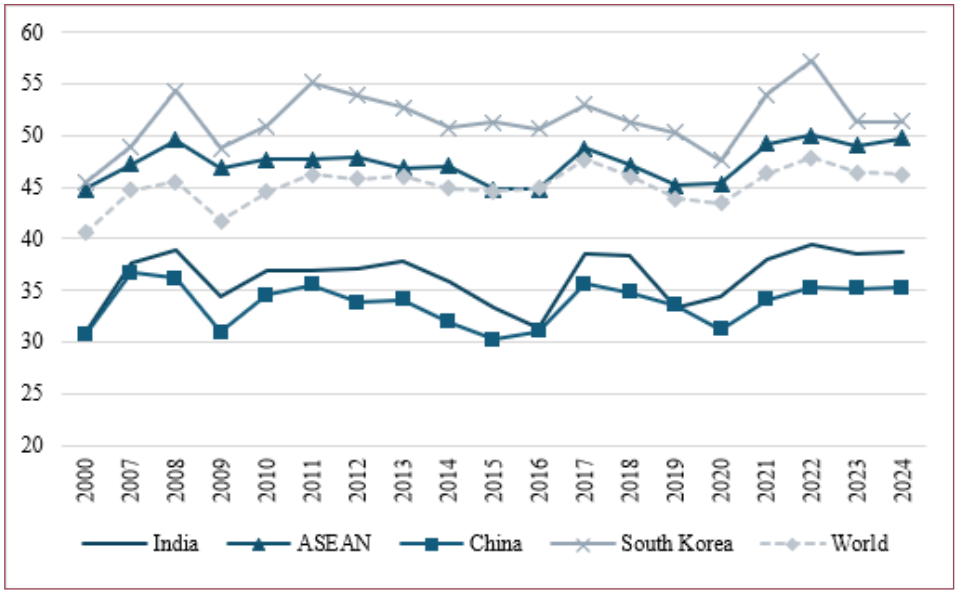
10.3. ASEAN-India Production and Services Networks

This section first assesses India's participation in GVCs relative to ASEAN and other major economies. It then examines the ASEAN-India production and services networks.

In order to properly measure GVC participation, this chapter follows the methodology introduced by Borin, Mancini, and Taglioni (2025). GVC-related trade is defined as the value of goods and services exports that cross more than one international border during the production process. It is expressed as a share of gross trade and is attributed to the exporting sector in which the value added originates. This measure comprises three forms of GVC participation: pure-forward GVC-related trade, two-sided GVC-related trade, and pure-backward GVC-related trade. The analysis draws on data from the Asian Development Bank's Multi-Regional Input–Output (MRIO) Database.

Figure 10.1 compares India's participation in global value chains (GVCs), measured as the share of GVC-related trade in total trade, with ASEAN, China, South Korea, and the world average during 2000 to 2024.

Figure 10.1: GVC Participation (GVC-related trade) from 2000 to 2024



Notes: ASEAN comprises Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.

Source: World Bank (2026)

As shown in Figure 10.1, India's participation in GVCs remains relatively low compared with ASEAN, South Korea, and the world average. In 2024, GVC-related trade accounted for 38.7 per cent of India's gross trade. The composition of GVC participation is balanced between pure forward linkages (16.1 per cent) and pure backward linkages (17.3 per cent), while two-sided GVC participation accounted for about 5.3 per cent. This suggests that India's integration into GVCs is driven by both upstream and downstream activities. In addition, although China and India show comparable GVC participation rates, India is more heavily integrated through backward linkages. This pattern is also documented by Chawla and Kumar (Chawla and Kumar, 2023) based on the OECD TiVA database.

In addition, the degree of GVC participation is higher in ASEAN than in India. On average, GVC-related trade accounted for more than 50 per cent of ASEAN's gross trade in 2024. However, GVC integration rates vary across ASEAN countries. Singapore saw the highest level of GVC participation (60.65 per cent), followed by Viet Nam (57.49 per cent), and Brunei (54.78 per cent). However, Indonesia (37.01 per cent), Lao PDR (45.20 per cent), and the Philippines (41.22 per cent) show relatively low levels of GVC integration.

Compared with India, ASEAN countries are integrated more through backward linkages. In 2024, Vietnam had the highest backward participation rate (40.94 per cent), followed by Singapore (35.52) and Cambodia (29.95 per cent). Vietnam also experienced the biggest increase in backward participation, rising from 20.71 per cent to 40.94 per cent from 2000 to 2020. By contrast, Malaysia's backward participation declined moderately from 32.69 per cent in 2000 to 25.25 per cent in 2024. Forward GVC participation is relatively high in Brunei (24.35 per cent), followed by Indonesia (20.08 per cent) and Lao PDR (19.28).

To better understand India–ASEAN production and services networks, Table 10.1 reports the share of India's exports to ASEAN that is related to GVCs across six broad sectors: agriculture, forestry and fishing; mining and quarrying; manufacturing; electricity, gas and water; construction; and services.

As shown in Table 10.1, 50.85 per cent of India-ASEAN gross bilateral trade was related to GVCs, indicating that about half of bilateral trade involved production processes crossing international borders at least once. This figure slightly increased from 47.70 per cent in 2000, suggesting that India-ASEAN production and services network has gradually deepened over time. More importantly, India's GVC participation

Table 10.1: GVC-Related Trade in India's Exports to ASEAN by Sector, 2000–2024

Sector	2000	2010	2015	2020	2021	2022	2023	2024
	(%)							
Agriculture, forestry and fishing	24.49	31.94	27.51	21.78	28.98	32.13	30.41	25.15
Construction	17.29	24.37	15.20	28.63	34.25	38.29	42.18	43.28
Electricity, gas and water	43.75	49.67	58.59	29.44	30.73	34.37	30.35	30.30
Manufacturing	48.08	59.61	55.19	55.48	57.54	60.11	55.97	59.20
Mining and quarrying	29.27	12.28	38.10	44.74	47.57	50.48	46.06	51.15
Services	59.74	60.26	57.62	58.58	48.74	48.20	49.26	46.18
Total	47.70	54.37	53.50	54.87	52.10	52.59	50.74	50.85

Notes: ASEAN comprises Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam

Source: World Bank (2026)

is predominantly forward oriented. Of the 50.85 per cent of India–ASEAN GVC trade, 29.59 percentage points are accounted for by pure forward linkages, compared with 12.54 percentage points for pure backward linkages. India primarily supplies domestic value added to ASEAN that is later incorporated into products exported to other countries. India thus acts as an upstream supplier within ASEAN-India production network (Prakash, 2024).

Nevertheless, there is heterogeneity in India's GVC participation with ASEAN across sectors. Unsurprisingly, manufacturing has the highest level of GVC-related trade, with 59.20 per cent of gross bilateral trade embedded in GVCs in 2024, rose from 48.08 per cent in 2000. Of this, 24.77 percentage points are accounted for by pure forward linkages. The mining and quarrying and services sectors also have relatively high GVC participation rates, at 51.15 per cent and 46.18 per cent, respectively. However, the composition of GVC participation differs across sectors. While manufacturing combines both forward and backward linkages, pure forward participation accounts for a larger share of GVC trade in mining and services than in manufacturing. This finding suggests that India's upstream position in ASEAN production networks extends beyond manufacturing to include significant contributions from the mining and services sectors.

Table 10.2 disaggregates manufacturing trade into thirteen industries and reveals substantial heterogeneity in the extent of GVC participation across sectors. Several patterns deserve attention. First, resource-based and intermediate-goods industries show the highest levels of GVC intensity. Coke, refined petroleum and nuclear fuel industry has the highest GVC participation rate. Its GVC trade

Table 10.2: Share of GVC-Related Trade in India's Manufacturing Exports to ASEAN by Industry, 2000–2024

Sector	2000	2010	2015	2020	2021	2022	2023	2024
	(%)							
Food, beverages and tobacco	31.76	25.85	21.13	21.95	28.59	31.46	30.49	37.33
Textiles and textile products	48.87	44.18	38.71	49.52	58.87	51.89	52.70	52.26
Leather, leather products and footwear	52.72	37.18	40.71	61.01	65.73	70.87	61.62	58.83
Wood and products of wood and cork	34.42	27.30	31.15	40.44	44.45	47.15	44.29	50.46
Pulp, paper, paper products, printing, and publishing	45.16	56.90	52.24	58.42	65.99	72.39	55.13	56.86
Coke, refined petroleum and nuclear fuel	72.93	85.76	74.87	74.72	71.72	73.22	67.43	73.12
Chemicals and chemical products	59.81	61.16	54.50	55.98	62.06	68.26	65.11	68.50
Rubber and plastics	55.62	52.47	45.48	47.75	51.22	54.61	56.45	57.25
Other nonmetallic minerals	58.53	50.23	44.31	31.25	40.55	45.23	46.27	49.28
Basic metals and fabricated metal	55.27	57.47	51.78	69.45	70.09	72.77	71.02	72.31
Machinery, nec	50.93	49.00	43.09	41.60	49.72	50.45	49.38	48.65
Electrical and optical equipment	58.08	40.83	48.74	59.35	67.55	65.50	67.99	59.14
Transport equipment	39.88	32.75	32.23	42.06	52.21	57.01	45.31	53.22
Manufacturing nec, recycling	24.45	40.81	30.79	51.03	65.06	61.29	68.96	64.39

Notes: ASEAN comprises Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam

Source: World Bank (2026)

share is greater than 70 per cent between 2000 and 2024. Also, basic metals and fabricated metal products, chemicals and chemical products, and electrical and optical equipment all have GVC participation rate exceeding 60 per cent in recent years.

Second, there exists a strong growth in GVC participation rates across many manufacturing sub-sectors. Examples include leather and footwear, transport equipment, wood products, and manufacturing n.e.c. and recycling. In the transport equipment industry, the share of GVC-related trade increased from 39.9 per cent in 2000 to 53.2 per cent in 2024, while leather and footwear rose from 52.7 per cent to 58.8 per cent over the same period, peaking at over 70 per cent in 2022.

Third, traditional consumer goods industries remain less integrated into regional value chains. Food, beverages and tobacco industry has the lowest GVC-related trade share among manufacturing industries, although it increased from 21.1 per cent in 2015 to 37.3 per cent in 2024. Likewise, textiles and textile products maintain a moderate level of GVC participation, fluctuating around 50 per cent throughout the period.

Finally, some industries exhibit relatively stable levels of GVC participation over time. Machinery and equipment, rubber and plastics, and pulp and paper products generally remain within the range of 45–60 per cent, suggesting a persistent but not rapidly expanding degree of integration into regional production networks.

Overall, the results indicate that India–ASEAN manufacturing value chains are particularly concentrated in energy-related products, intermediate goods, chemicals, metals, and technology-intensive industries. At the same time, rising GVC intensity in transport equipment, leather products, and several other industries suggests that bilateral production linkages have become increasingly diversified over time.

While manufacturing activities constitute the core of cross-border production networks, the functioning of modern value chains increasingly depends on a wide range of supporting services. Production fragmentation requires transportation, logistics, distribution, finance, telecommunications, and business services to coordinate production stages located across different countries. This is known as "servicification" (Miroudot, 2017; Reddy, Sasidharan, and Thangavelu, 2023). As a result, the expansion of manufacturing GVCs is often accompanied by deeper integration of services into cross-border value chains. It is necessary to examine the sectoral composition of services-related GVC trade to provide additional insights into the mechanisms through which India and ASEAN are connected within regional production networks.

Table 10.3 presents the share of GVC-related trade in India's services exports to ASEAN across sixteen service industries. The results reveal considerable variation in the degree of GVC participation across sectors and overtime.

First, transport and trade-related services show the highest levels of GVC intensity throughout the sample period. Water transport, air transport, wholesale trade, and supporting transport activities consistently record some of the highest GVC-related trade shares. In particular, supporting and auxiliary transport activities, including travel agency services, maintained exceptionally high levels of GVC participation, exceeding 70 per cent throughout the period and reaching more than 90 per cent in the early 2000s. Likewise, water transport recorded GVC-related trade shares above 75 per cent in recent years. These findings are consistent with the central role of logistics, distribution, and transportation services in facilitating cross-border production networks.

Second, several modern service industries have relatively strong integration into GVCs. Financial intermediation maintained GVC-related trade shares of around 55–66 per cent throughout the

Table 10.3: Share of GVC-Related Trade in India's Services Exports to ASEAN, 2000–2024

	2000	2010	2015	2020	2021	2022	2023	2024
Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of fuel	35.68	49.70	15.44	37.83	32.85	25.03	27.10	30.54
Wholesale trade and commission trade, except of motor vehicles and motorcycles	77.73	85.29	79.51	31.92	44.74	36.90	45.95	46.86
Retail trade, except of motor vehicles and motorcycles; repair of household goods	44.14	29.90	22.05	29.20	36.51	31.47	28.44	28.13
Hotels and restaurants	44.31	N/A	32.23	53.08	60.37	52.35	58.35	47.81
Inland transport	29.34	34.15	28.87	51.51	48.66	49.94	61.70	66.66
Water transport	63.24	68.78	84.06	76.82	81.03	82.68	78.25	77.80
Air transport	40.11	52.59	51.13	62.28	74.48	67.65	66.15	75.93
Other supporting and auxiliary transport activities; activities of travel agencies	89.75	91.23	88.31	80.12	85.18	75.79	69.23	74.50
Post and telecommunications	24.32	43.80	38.36	43.38	47.68	45.50	55.67	54.94
Financial intermediation	46.85	56.64	55.92	60.86	58.63	66.14	59.78	57.46
Real estate activities	3.19	4.35	3.82	25.27	44.24	39.55	70.25	47.07
Renting of M&Eq and other business activities	67.71	73.48	61.24	62.49	41.27	42.51	45.72	41.89
Public administration and defense; compulsory social security	0.65	0.35	0.27	17.42	20.06	27.85	25.05	23.09
Education	5.91	5.03	3.07	12.80	19.31	30.65	24.52	20.74
Health and social work	33.67	38.39	24.33	18.01	21.03	25.31	27.32	28.83
Other community, social, and personal services	31.16	21.79	24.29	26.00	29.29	19.12	25.19	24.37

Notes: ASEAN comprises Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam

Source: World Bank (2026)

sample period, while post and telecommunications increased steadily from 24.3 per cent in 2000 to 54.9 per cent in 2024. The increasing GVC intensity of telecommunications services may reflect the growing importance of digital connectivity and business support services in regional production networks (Kalash, Desai, and Shah, 2026).

Third, some service sectors experienced particularly rapid growth in GVC participation after 2020. Inland transport increased from 29.3 per cent in 2000 to 66.7 per cent in 2024, while real estate activities rose sharply from negligible levels in the early 2000s to 47.1 per cent in 2024, reaching a peak of 70.3 per cent in 2023. Education and public administration services also recorded noticeable increases, although their overall levels remained below those observed in transport and business-related services.

Overall, the findings suggest India–ASEAN services network is concentrated in transport, logistics, trade facilitation, finance, and communication services—sectors India seems to have comparative advantage in.

10.4. Strengthening India–ASEAN Production and Services Networks

There are several policy tools to boost India-ASEAN production and services network.

10.4.1. Required Preconditions for Successful Participation in GVCs

Since India's participation in GVCs is relatively low compared with ASEAN, it is necessary for India to create an environment conductive to deeper GVC participation. The first issue is related to labour costs. Relative labour cost is one of the most important determinants of GVC participation, especially for developing countries. In the early stages of international fragmentation of production, labour cost advantages allowed multinational enterprises (MNEs) to relocate labour-intensive tasks to countries with lower production costs. As shown in Table 10.4, India's manufacturing wage is relatively low compared with those in many ASEAN countries. Together with its large pool of workers, this clearly provides India with a good starting point to participate deeper into global production networks.

Table 10.4: Average Wages in Manufacturing 2024 (US$/month)

Country	Average Wage in Manufacturing (US$/ Month)
Indonesia	350
Viet Nam	342
Thailand	431
Malaysia	797
Philippines	555
Singapore	5,016
Cambodia	232
India	96.36

Note: Indian manufacturing wages are obtained from Singh (2024). The average daily earnings of India's factory workers are INR 307.

Sources: ASEAN Secretariat (2024) and Singh (2024)

However, relative labour cost and a large pool of workers may not be sufficient to attract MNEs. Before locating labour-intensive tasks, such as final assembly, in a particular country, MNEs need to consider whether local workers are able to perform those tasks. In this regard, the availability of trainable low- to medium-skilled workers is an important factor for GVC participation. In 2023, the share of India's population aged 25 and above with at least completed primary education was 68.13 per cent, lower than in Thailand and Viet Nam. This is therefore an area where India needs further development. Although education does not directly translate into skills, it at least indicates the potential for training and knowledge transfer.

Labour market conditions also relate to labour market rigidity. India's labour market is often viewed as rigid, which may discourage large firms from making new hires because laying off workers can be difficult (Saha, 2015). In other words, hiring and retrenchment remain relatively less flexible. A recent step in this direction is India's 2025 labour law reform, which aims to modernise outdated laws, protect workers rights, give employers more room to adjust their workforce, and create labour regulations that better fit the needs of modern manufacturing (Jha & Mitra, 2026). Key areas for further improvement include stronger social protection, more credible enforcement, and skills development.

10.4.2. Reduction in Service Link Costs

It is important for developing countries, India included, to reduce service link costs in order to participate more in global production networks. Even though there is no single indicator that fully captures service link costs, two commonly used measures are the Ease of Doing Business index and the Logistics Performance Index.

Table 10.5 reports the World Bank's East of Doing Business rankings for India and ASEAN countries. Overall, India ranked 63rd out of 190 economies, behind only Singapore, Malaysia, and Thailand among the countries shown. Across the dimensions of the index, India performs relatively well in several areas, including protecting minority investors, getting electricity, getting credit, and dealing with construction permits. However, India still needs substantial improvement in enforcing contracts, starting a business, and registering property.

Table 10.5: World Bank's 2020 East of Doing Business (Rank)

Economy	Global Rank	Starting a business	Dealing with construction permits	Getting electricity	Registering property	Getting credit	Protecting minority investors	Paying taxes	Trading across borders	Enforcing contracts	Resolving insolvency
Singapore	2	4	5	19	21	37	3	7	47	1	27
Malaysia	12	126	2	4	33	37	2	80	49	35	40
Thailand	21	47	34	6	67	48	3	68	62	37	24
India	63	136	27	22	154	25	13	115	68	163	52
Brunei Darussalam	66	16	54	31	144	1	128	90	149	66	59
Vietnam	70	115	25	27	64	25	97	109	104	68	122
Indonesia	73	140	110	33	106	48	37	81	116	139	38
Philippines	95	171	85	32	120	132	72	95	113	152	65
Cambodia	144	187	178	146	129	25	128	138	118	182	82
Lao PDR	154	181	99	144	88	80	179	157	78	161	168
Myanmar	165	70	46	148	125	181	176	129	168	187	164

Source: World Bank (2020)

Table 10.6: India's LPI Score

Indicators	2007	2010	2012	2014	2016	2018	2023
Logistics performance index	3.07	3.12	3.08	3.08	3.42	3.18	3.40
Ability to track and trace consignments	3.03	3.14	3.09	3.11	3.52	3.32	3.40
Competence and quality of logistics services	3.27	3.16	3.14	3.03	3.39	3.13	3.50
Ease of arranging competitively priced international shipments	3.08	3.13	2.98	3.20	3.36	3.21	3.50
Frequency with which shipments reach consignee within scheduled or expected time	3.47	3.61	3.58	3.51	3.74	3.50	3.60
Quality of trade- and transport-related infrastructure	2.90	2.91	2.87	2.88	3.34	2.91	3.20

Source: World Bank (2023)

The next indicator for measuring service link costs is the Logistics Performance Index (LPI). The LPI is a comprehensive measure of logistics performance based on six dimensions: customs efficiency, quality of trade and transport infrastructure, ease of arranging international shipments, competence and quality of logistics services, ability to track and trace consignments, and timeliness of shipments in reaching their destination (World Bank, 2023). Together, these indicators capture the efficiency with which firms can organise and manage cross-border production and distribution networks. Therefore, a higher LPI score indicates lower service-link costs and a more favourable environment for participation in regional and global value chains.

Compared with ASEAN countries, India's position in the LPI shows a similar pattern to the Ease of Doing Business index. India ranks only behind Singapore, Thailand, and Malaysia. As shown in Table 10.6, India's overall LPI score increased from 3.07 in 2007 to 3.40 in 2023. This suggests an improvement in logistics performance over time. India performs relatively well in the timeliness of shipments, the ease of arranging competitively priced international shipments, and the competence and quality of logistics services. However, the quality of trade- and transport-related infrastructure remains an important area for further improvement.

10.4.3. Open Trade and Investment Regime

Successful participation in GVCs requires an open trade and investment regime. According to Sachs and Warner (1995), India has been classified as an "open" economy only since 1994, following the launch of its trade liberalisation programme. In contrast, Malaysia, Singapore, and Thailand are classified as economies that have been always open. These countries also outperform India in the East of Doing Business Index and the Logistics Performance Index (LPI), indicating that these three countries in Southeast Asia have business environment that is more conductive to GVC participation.

Another commonly used indicator to measure openness to trade is the trade-to-GDP ratio. According to the World Bank (2026), India's trade-to-GDP ratio in 2025 is about 46 per cent. While this is substantially higher than its level in the 1990s, it is still lower than that of every ASEAN economy except Indonesia. By comparison, Singapore, Viet Nam, Thailand, Malaysia, and Cambodia all have trade-to-GDP ratios greater than 100 per cent.

An open trade regime is crucial for GVC participation because production and services networks involve cross-border movement of goods and services. The lower the barriers and costs associated with these cross-border transactions, the more competitive firms become in the world market. Therefore, India needs to further liberalise its trade regime to strengthen its ability to integrate into production and services networks.

Another area for improvement is to liberalise investment regime. At the early stage of GVC participation, attracting more multinational enterprises (MNEs) is crucial because MNEs possess technology and production techniques that may not be available at home. FDI can also bring capital, technology, management know-how, and production standards, which can eventually strengthen domestic capabilities. For India, attracting export-oriented foreign direct investment (FDI) in manufacturing would increase the likelihood that intermediate inputs made in India are used in production undertaken in ASEAN. This will increase India's GVC forward participation with ASEAN. When it comes to FDI, the investment climate is very important. This depends on several factors, for example, the regulatory framework, political stability, free trade conditions, and high-quality infrastructure. Red tape and bureaucratic procedures are man-made so they should be, and can be, abolished by man.

At the same time, India can strengthen backward linkages by using intermediate inputs made in ASEAN. India may serve as the final assembler of

some products, which fits well with its technology and labour pool. However, this will depend on whether production activities in ASEAN have already matured, as ASEAN countries are also highly competitive in these stages of GVC participation.

10.4.4. Human Capital Development

At the early stage, countries can join global production network based on their comparative advantage. This explains why many developing countries participate in GVCs by undertaking labour-intensive tasks because trainable, middle-skilled labour is relatively abundant. Low labour costs may initially attract labour-intensive production activities, but whether countries can move into higher value-added segment of GVCs depends on the availability of skilled workers, technicians, engineers, and managers who can support more sophisticated production processes. Countries that aim to carry out a more sophisticated task within global production network therefore need to invest continuously in workforce development and technical education.

For India, entering GVCs through labour-intensive tasks may be a realistic starting point. However, there is also an important question about the future. India needs a longer-term plan to capture the benefits of higher value-added tasks. The electronics sector is a useful example. At the initial stage, India may focus on assembly by importing components from other countries, assembling them into final products, and then exporting them. This is similar to the current policy discussion in Thailand and Malaysia, where countries are seeking to move to higher stages of production. To do so, India needs to develop capabilities in tasks that require greater precision, stronger supervisory manpower, and domestic know-how. This requires broader industrial development as well as sustained investment in education and skills.

Current indicators show substantial variation in human capital development across India and ASEAN economies. For example, the tertiary education enrolment rate in India increased sharply from 10 per cent in 2000 to 34 per cent in 2025 (World Bank, 2026). However, there exists a large gap in educational outcomes between India and several ASEAN countries. Tertiary enrolment rates reached 97 per cent in Singapore, 49 per cent in Thailand, 45 per cent in Indonesia, 38 per cent in Vietnam, and 21 per cent in Cambodia. Another useful indicator is labour productivity. Measured by output per hour worked, labour productivity in India stood at US$ 8.1 per hour in 2015, compared with US$ 19 in Thailand, US$ 14.3 in Indonesia, US$ 29.7 in Malaysia, and US$ 11 in Vietnam (Our World in Data, 2023).

These differences in tertiary education and labour productivity raise an important question about India's ability to move into higher value-added activities within GVCs. If India cannot strengthen its human capital and productivity base, its prospects in GVCs may remain limited to lower value-added tasks.

10.5. Conclusion

This study examines the background, evolution, and prospects of ASEAN-India production and services networks. The analysis is based on GVC-related trade between 2000 and 2024. The findings show that India's GVC participation is low compared to other major exporting countries in the region. Also, there is a moderate increase in the extent to which India's trade with ASEAN is embedded in regional value chains. Manufacturing and services emerge as the most GVC-intensive sectors but there are heterogeneities across sub sectors. Within manufacturing, industries such as refined petroleum products, chemicals, basic metals, electrical equipment, and transport equipment exhibit high levels of GVC participation. In the services sector, GVC-related trade is concentrated in transport, logistics, wholesale trade, finance, and telecommunications. The analysis further suggests that deeper integration into regional production and services networks depends on several factors. Manufacturing wage and a sheer size of workforce

offer India a good starting point for deeper GVC participation. However, area for improvement for India includes labour market conditions, business environment, and human capital.

Endnote

1 It is a way of organizing production such as different stages/tasks of production are located in different countries. This process is variously known as international production fragmentation, vertical specialization, slicing the value chain, and offshoring.

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Part III:
Harnessing Blue Economy and Deepening Connectivity

11 Harnessing the Blue Economy Potential in ASEAN

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11.1. Introduction

The ocean holds a crucial position in the global economy. Oceans encompass about 90 per cent of the global biosphere and cover about 71 per cent of the Earth's total surface, providing food sources for more than three billion people, serving as a transportation route for over 80 per cent of global trade, and housing submarine cables that carry approximately 98 per cent of international internet traffic (OECD, 2025). According to OECD analysis, the marine sector contributed approximately 3-4 per cent to the global economy between 1995 and 2020. It is expected to reach a value of around US$ 3 trillion, over 5 per cent of global GDP, by 2030 (OECD, 2016; OECD, 2025). Meanwhile, the Food and Agriculture Organization (FAO) estimates that over 60 million people worldwide are employed in the fishing industry, with over 83 per cent located in Asia (FAO, 2020). More than 75 per cent of global marine economic growth also comes from countries in Asia and the Pacific.

In this context, the idea of the Blue Economy has emerged as a developmental model that combines economic advancement, ecological sustainability, and social inclusion in coastal and maritime areas, particularly in the ASEAN region. Therefore, this chapter examines the progress of the blue economy within ASEAN in various sectors, analyses structural complementarities and value chain opportunities, identifies governance and sustainability challenges, and formulates strategic pathways to enhance a comprehensive and sustainable regional blue economy.

11.2. Blue Economy in ASEAN: The Stylized Facts

Southeast Asia hosts some of the world's most diverse and dynamic oceanic ecosystems. These ecosystems provide essential sources of livelihood for countless individuals and serve as an essential protein source across the region. Within this context, the Blue Economy has become an essential component of ASEAN's broader sustainability agenda (Wanichkorn, 2025). The Blue Economy serves as an essential foundation for sustainable growth in the ASEAN region and provides a route toward economic stability, responsible environmental management, and deeper regional cooperation. ASEAN leaders recognize the blue economy as a complex, interdisciplinary concept because it encompasses the three pillars of the ASEAN Community: the ASEAN Political-Security

Community, the ASEAN Economic Community (AEC), and the ASEAN Socio-Cultural Community (Ramli and Waskitho, 2023). This shared commitment was formalized through the ASEAN Declaration on the Blue Economy, which was endorsed by ASEAN Member States (AMS) in 2021. The ASEAN Blue Economy Framework (ABEF) was adopted by ASEAN leaders during the 43rd ASEAN Summit held in Jakarta in September 2023, identifying it as a key economic goal. Under the framework, AMS reached a consensus on the definition of the term as follows:

"ASEAN defines the Blue Economy as an integrated, holistic, cross-sectoral, and cross-stakeholder approach that creates value added and value chains from resources from oceans, seas, and freshwater in an inclusive and sustainable way, making the Blue Economy the new engine for ASEAN's future economic growth. The ASEAN Blue Economy covers upstream and downstream sectors, serving as an accelerator of the conventional marine sector such as fisheries, aquaculture, fish processing, and tourism and a catalyst for emerging sectors such as renewable energy, biotechnology, and marine and freshwater-based research and education as well as other emerging sectors from aquatic resources" (ASEAN, 2023a).

ASEAN's Blue Economy Vision aims to create value by promoting sustainable practices in marine and freshwater activities and enhancing the benefits they provide to communities. This supports economic integration, growth, and sustainability. By capitalizing on the blue economy's potential, ASEAN seeks to establish a new source of growth that is socially, economically, and environmentally sustainable.

Since 2023, when the ASEAN Blue Economy Framework (ABEF) was adopted, the member states have collectively pledged to pursue a comprehensive and inclusive strategy for the responsible utilization of marine and coastal resources. In several AMS, the blue economy already demonstrates substantial economic significance, contributing approximately 20 to 30 percent of the nation's GDP (Ramli and Waskitho, 2023). The sector generates both direct and indirect employment across key industries, including fisheries, aquaculture, maritime tourism, and shipping, along with emerging areas such as marine renewable energy, deep-sea resource extraction, marine biotechnology, maritime knowledge, and research (Randhawa, 2024). Furthermore, Southeast Asia occupies a strategic global position, because it contains some of the most active shipping routes worldwide and has a rich variety of marine life, thereby strengthening its capacity to become a hub for marine economic activity (Ramli and Waskitho, 2023).

11.2.1. ASEAN Blue Economy Framework (ABEF)

11.2.1.1. The Scope of the ABEF

ASEAN's strong commitment to strengthening regional collaboration in promoting the blue economy is reflected in the breadth of the ASEAN Blue Economy Framework (ABEF). It seeks to promote value creation, sustainability, resilience, and inclusivity. The framework supports current regional initiatives, such as the ASEAN Carbon Neutrality Strategy and the ASEAN Regional Action Plan for Combating Marine Debris (2021–2025). It is also closely associated with the ASEAN Community Vision 2025. It further aligns with key international commitments under frameworks such as the World Trade Organization (WTO) and global development agendas, particularly the United Nations 2030 Agenda for Sustainable Development and Sustainable Development Goals (SDGs).

11.2.1.2. Objectives of the ABEF

The framework is intended to provide strategic guidance for ASEAN Blue Economy activities. It fosters collaboration and integration within the region and enhances the ability of ASEAN countries to use aquatic resources sustainably. It will serve as ASEAN's reference text for the blue economy, incorporating elements related to periodic review mechanisms. Specifically, the objectives include:

i) A cooperative, multisectoral approach is essential for creating an inclusive and sustainable value chain. This approach will transform the blue economy into a new driver of ASEAN's future economic growth.

ii) The framework aims to establish a shared understanding of the blue economy, provide a foundation for local blue economy initiatives to make effective use of the economic opportunities offered by ASEAN's ocean and freshwater resources, and promote collaborative action in this area.

iii) The framework serves as a non-legally binding reference for ongoing dialogue and the exchange of perspectives among AMS and its collaborators regarding the subject of the blue economy.

11.2.1.3. The Advantages of the ABEF

The framework has the potential to significantly advance regional economic growth, social inclusion, and environmental sustainability. The principal benefits are as follows:

i) Enhanced sustainable economic growth: The Blue Economy aims to maximize the economic opportunities presented by marine and freshwater resources by promoting sustainable development across sectors including aquaculture, fishing, maritime transportation, green energy, and tourism. These sectors have the potential to be key drivers of ASEAN's economic growth and job creation.

ii) Catalyzed emerging sectors: This framework fosters the development of emerging blue economy initiatives, including marine biotechnology, bioprospecting, and marine data services. These initiatives create new economic opportunities and enhance regional competitiveness.

iii) Promoted inclusivity: Ensures that all stakeholders, including small-scale fishers, coastal communities, women, youth, small enterprises, and other frequently marginalized groups, can benefit equitably from the blue economy.

iv) Promoted sustainability alongside economic growth: The framework emphasizes the importance of economic growth alongside the protection of freshwater and marine environments. To guarantee long-term ecological and economic sustainability, it addresses environmental concerns associated with unsustainable behaviors and promotes responsible resource management.

v) Climate-change mitigation and adaptation: The Blue Economy fosters sectors and ecosystems that offer crucial services, such as capturing carbon, protecting coastlines, and preserving biodiversity, along with coral reefs, mangrove forests, and other aquatic habitats, thereby promoting climate resilience.

vi) Facilitated cross-sectoral collaboration and cooperation: The framework promotes collaboration among local communities, corporations, governments, academic institutions, and civil society. ASEAN can develop a more integrated and coordinated strategy for sustainably managing and utilizing its freshwater and marine resources by strengthening cross-sectoral and cross-national cooperation.

11.2.1.4. ASEAN Blue Economy Framework Overview

a) Guiding Principles

Principle 1: Value Creation

Value creation refers to generating economic benefits from marine and inland water resources while ensuring they are used in a sustainable and responsible manner. In the context of regional and international trade, creating value involves developing value chains across all ASEAN member states (Figure 11.1). This is achieved by lowering trade restrictions and supporting economic development while ensuring that marine and freshwater ecosystems are not harmed (Haimbala, 2019). This can be achieved by using environmentally friendly techniques and innovations, such as recirculating aquaculture systems, seaweed production to adapt to and mitigate

climate change, blue biotechnology, aquatic data services, and marine spatial planning.

Principle 2: Inclusivity

Inclusivity seeks to ensure that all involved parties, especially MSMEs, small-scale fishers, and local and coastal communities, benefit from the sustainable management of ocean and inland water resources. Involving multiple stakeholders in decision-making processes allows the Blue Economy to leverage a broad spectrum of knowledge and expertise while promoting equitable distribution of economic benefits. This strategy promotes social unity, long-term growth, and the ability of coastal communities through efficient governance and regulatory procedures.

Principle 3: Sustainability

The sustainability concept considers both the environment and society. Ecological sustainability aims to protect marine, coastal, and freshwater ecosystems from degradation while enabling the responsible use of aquatic resources through Blue Economy initiatives. Social sustainability focuses on equitably distributing benefits while considering the needs of current and future generations. It encourages decent employment, equitable income opportunities, and respect for local cultural and social values. It also prioritizes the well-being of vulnerable groups, including women and children.

Figure 11.1: ASEAN Blue Economy Framework Overview



Source: ASEAN (2023a)

b) Blue Strategies

Blue Conservation Management

Blue Conservation Management (BCM) focuses on strengthening the sustainable management of marine, coastal, and freshwater environments by using scientific approaches and integrated governance. The strategy recognizes the need for a common ASEAN platform with standardized data and indicators to support evidence-based decision-making and effective ecosystem management. The strategy focuses on three key areas of development.

i) **Advancing carbon neutrality by focusing on activities within the aquatic and coastal sectors:** The goal is to promote carbon-neutral development in the aquatic and coastal sectors. This will be achieved by assessing the emissions and carbon sequestration potential of blue carbon ecosystems.

ii) **Promoting the responsible use of natural resources, protecting environmental health, and combating pollution**: The focus is on sustainable resource management, employing strategies such as marine spatial planning, evaluating ecosystems, and investing in natural capital.

iii) **Enhancing Disaster Risk Reduction and Resilience:** This sector uses natural solutions, climate adaptation strategies, and disaster risk reduction tactics to improve the resilience of coastal communities and their environments to withstand challenges.

Blue Science, Technology, and Innovation

The Blue Science, Technology, and Innovation plan seeks to use scientific knowledge, digital technology, and innovation to boost the Blue Economy within ASEAN. This strategy is built around using marine and freshwater science, data systems, and innovative technologies to improve productivity, efficiency,

transparency, and resilience throughout the entire Blue Economy value chain. The strategy focuses on four key development areas:

i) Addressing technology and digital gaps among AMS
   - The goal of this area is to strengthen technological and digital capabilities by developing data-sharing platforms, communication systems, and digital tools that promote collaboration in areas such as fisheries management, monitoring marine pollution, weather forecasting, and responding to disasters.

ii) Improving value chain efficiency using technological innovations
   - Digital technologies like blockchain, big data, artificial intelligence, and advanced analytics can improve supply chain management, increase transparency and traceability, and boost the efficiency of blue economy sectors.

iii) Developing Technology Policy Frameworks
   - To ensure compliance with national and international legal frameworks, this sector promotes the development of policies and regulations that encourage the responsible use of emerging technologies.

iv) Promoting and Coordinating ASEAN Research Facilities and Think Tanks
   - To improve knowledge, support evidence-based policymaking, and prevent the duplication of research efforts related to the Blue Economy, collaboration is encouraged among ASEAN research institutions, think tanks, and innovation hubs.

Blue Priority Sectors

The Blue Priority Sectors initiative aims to promote growth in traditional and new Blue Economy sectors throughout ASEAN. It strives to strengthen existing sectors, such as fisheries, aquaculture, tourism, maritime transportation, and green ports, while fostering the growth of emerging sectors, including renewable marine energy, desalination, biotechnology, and bioprospecting. The strategy is divided into six key areas.

i) Identifying the specific sectors and principal areas in which the blue economy is applied and providing a clear and consistent explanation.
   - This topic aims to foster a shared understanding of the Blue Economy, covering its scope, significant industries, and applications.

ii) Increasing understanding of blue economy potential and its constraints.
   - The objective of this area is to expand our understanding of marine and aquatic resources, their economic value, and the challenges of using them sustainably.

iii) Supporting marine spatial planning
   - Marine spatial planning is promoted as a way to enhance resource management, promote cross-sector coordination, develop public-private partnerships, and facilitate evidence-based decision-making to ensure the sustainable development of our oceans.

iv) Strengthening Communication
   - This sector promotes stronger communication among governments, industries, communities, and other stakeholders. This facilitates knowledge sharing, promotes best practices, increases awareness of the Blue Economy Initiative, and identifies new development prospects.

v) Developing and Promoting Sustainable Blue Financing Mechanisms
   - This sector encourages the development of funding structures that accelerate investment in the sustainable blue economy.

vi) Stimulating traditional and emerging sectoral growth
   - This area seeks to stimulate innovation and investment in established sectors like fisheries, aquaculture, tourism, and maritime services, as well as new fields such as marine renewable energy and biotechnology.

c) Blue Enablers

Infrastructure

Infrastructure is fundamental to developing the Blue Economy. The growth of ocean-based industries

requires modern, efficient infrastructure, including ports, harbors, jetties, and coastal protection structures. This infrastructure increases connectivity, enabling the movement of products and services while boosting supply chain efficiency and lowering transaction costs.

To achieve these goals, governments and the private sector must collaborate to attract investment and build infrastructure that promotes sustainable resource use and economic growth. Additionally, capacity-building initiatives should complement infrastructure development to ensure stakeholders can effectively utilize new facilities and technologies.

Institutional Setting

A supportive institutional framework is necessary to advance the Blue Economy in ASEAN. Since the Blue Economy includes many different areas, effective policies, governance structures, and coordination mechanisms are required to ensure that economic, environmental, and social goals are in line with current international, regional, and national laws, such as the United Nations Convention on the Law of the Sea.

To improve cross-sectoral cooperation and sustainable resource management, investments in institutional and governance mechanisms, including integrated coastal zone management and marine spatial planning, are also required. Stakeholder involvement, knowledge exchange, and capacity building are all made possible by strong institutions. This makes it possible for communities, companies, and governments to more effectively support the development of the Blue Economy.

Cooperation and Capacity Building

Supporting the transition to a sustainable and inclusive blue economy requires collaboration and capacity building. To satisfy the changing needs of ocean-based businesses, it is essential to develop a qualified workforce with the necessary technical competencies and expertise. Capacity-building efforts may include educational programs, vocational training, technical support, and on-the-job learning opportunities to prepare individuals for work in various sectors of the Blue Economy.

Therefore, governments, businesses, academic institutions, and civil society organizations should give top priority to funding for capacity building. A well-trained staff enhances sector performance and boosts investor confidence by supplying the human capital required to enable creative, sustainable, and profitable projects.

Sustainable Investment and Finance

Sustainable investment and finance are essential for the long-term growth of the Blue Economy. Blue bonds, transition bonds, sustainability-linked loans, impact investments, and blended finance options can help address funding gaps and improve the viability of Blue Economy projects. By allocating funds to socially and environmentally conscious projects, sustainable financing can boost innovation in all Blue Economy sectors and expedite the construction of vital infrastructure.

11.3. Sectoral Opportunities of the ASEAN Blue Economy

11.3.1. Fisheries and Aquaculture

Fish and seafood are gaining importance as a vital protein source globally, especially in Southeast Asia. The production from wild fisheries and aquaculture in this area has seen a notable rise (SEAFDEC, 2025). Currently, several Southeast Asian countries rank among the world's largest producers of fish and seafood, underscoring the sector's critical importance for food and nutrition security, economic development, and livelihoods across the ASEAN region (ASEAN, 2021). Overall, fisheries production in Southeast Asia increased from 46.7 million metric tonnes in 2019 to 48.5 million metric tonnes in 2023 (Table 11.1), reflecting a generally positive long-term growth trend despite temporary fluctuations during the period (SEAFDEC, 2026). Indonesia had the highest fisheries production volume in 2023, accounting for approximately 34.3 per cent of total Southeast Asian production,

Table 11.1: Total Fishery Production of Southeast Asia (2019-23)

Total Fishery Production	2019	2020	2021	2022	2023
Quantity (MT)	46,768,079	46,446,162	45,768,419	47,262,176	48,503,521
Value (US$ 1,000)	57,069,153	51,149,926	76,995,331	79,308,929	81,473,683

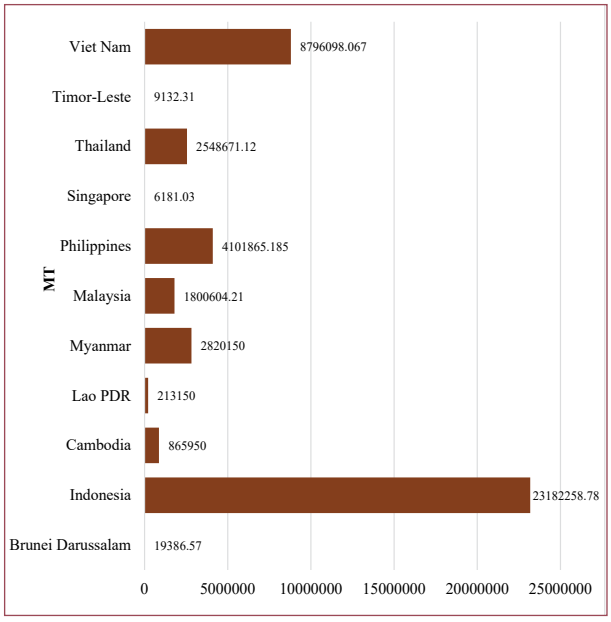
Source: SEAFDEC (2026).

followed by Vietnam at 31.4 per cent (Figure 11.1). These two countries accounted for more than 65 per cent of the region's total fisheries output, highlighting their dominant role in ASEAN fisheries (SEAFDEC, 2025).

Fisheries production in Southeast Asia can be categorized into three primary subsectors: marine capture fisheries, inland capture fisheries, and aquaculture (see Table 11.2). In 2023, aquaculture accounted for the largest share of production volume, contributing approximately 54.5 per cent of total output. Marine capture fisheries ranked second at 38.9 per cent, while inland capture fisheries represented 6.5 per cent. Measured by production value, aquaculture also remained the dominant subsector, accounting for 47.7 per cent of the total, followed closely by marine capture fisheries at 45.5 per cent; inland capture fisheries contributed 6.8 per cent. These figures highlight aquaculture's increasingly important role as the primary driver of fisheries production and economic value in Southeast Asia.

In terms of commodity composition, marine fishes remained the dominant product group in Southeast Asia's marine capture fisheries in 2023, accounting for 86.6 per cent of total production volume. This was followed by molluscs and crustaceans, while seaweeds and other marine invertebrates made relatively small contributions (SEAFDEC, 2026). Indonesia led Southeast Asian countries in marine capture fisheries production value, contributing about 36.3 per cent of the regional total in 2023, followed by Viet Nam at 26.4 per cent. Myanmar ranked third with 14.9 per cent, followed by the Philippines (9.3 per cent),

Figure 11.2: Total Fisheries Production in Southeast Asian Countries in 2023



Source: World Bank (2026)

Table 11.2: Production of Fishery Subsectors of Southeast Asia in 2023

Sub-sector	Quantity (MT)	Value* (US$ 1,000)
Marine capture fisheries	18,885,858	37,069,652
Inland capture fisheries	3,162,510	5,566,756
Aquaculture	26,455,153	38,837,285
Total	48,503,521	81,473,683

Source: SEAFDEC (2026)

Malaysia (6.7 per cent), and Thailand (5.5 per cent). Indonesia also has a wide variety of fishery resources. Key marine capture products include cob, scad, flying fish, skipjack tuna, squid, and tuna. Major production centers are located in North Sumatra, Maluku, East Java, and South Sulawesi (BAPPENAS, 2023). According to the Indonesian Ministry of Marine Affairs and Fisheries, Indonesia has become the second-largest seafood producer globally, following China, due to its extensive marine resources (Ministry of Marine Affairs and Fisheries, 2023).

Between 2019 and 2022, inland capture fisheries production in Southeast Asia generally showed an upward trend. In 2022, total inland capture fisheries production in the region reached 3,073,523 metric tonnes. However, it should be noted that data collection and reporting for inland capture fisheries are still limited and need to be improved. As a result, currently published data may still be inadequate, especially with regard to species composition (SEAFDEC, 2025). Myanmar was the top producer of inland capture fisheries in Southeast Asia, producing 1,648,552 metric tonnes, around 32.7 per cent of the country's total capture fisheries production. In 2022, Indonesia, the second-largest producer, recorded a production amount of 462,970 metric tonnes, contributing 6.2 per cent to the national capture fisheries production.

Aquaculture currently represents the largest fisheries production subsector in Southeast Asia. The production of food fish for both domestic consumption and international trade has become increasingly important to the economies of many developing countries in the region (ASEAN, 2015). Over the five years from 2019 to 2023, aquaculture production fluctuated, yet it consistently dominated regional output. In 2023, approximately 55 per cent of overall output from fisheries was attributed to aquaculture, contributing roughly 48 per cent to the total value of production. Countries such as Indonesia, Malaysia, Myanmar, the Philippines, Thailand, and Vietnam rank among the world's leading aquaculture producers (FAO, 2009). Cambodia also ranked prominently at 22nd place globally (World Bank, 2023). Globally, aquaculture is widely regarded as one of the most viable solutions to declining wild fish stocks caused by overfishing, a perspective shared by many ASEAN countries. Although aquaculture in Southeast Asia is largely characterized by small-scale operations, its value chain mechanisms remain relatively weak.

Approximately 25 per cent of global fish production originates from the ten ASEAN Member States, with about half derived from aquaculture. Indonesia has consistently been among the top aquaculture producers globally. Earlier evaluations placed the nation as the third-largest producer of aquaculture in the world (Yayasan Inisiatif Dagang Hijau, 2018). However, more recent data indicate that Indonesia has strengthened its position and became the world's second-largest aquaculture producer by production volume in 2023 (World Bank, 2023). Globally, aquaculture continues to dominate aquatic food production (FAO, 2019), with Asia supplying more than 90 per cent (102.9 million metric tonnes) of total aquaculture output in 2017. Fisheries commodities are particularly important in ASEAN not only for regional food security but also as a major source of export earnings and employment opportunities (van Mulekom et al., 2006). At the commodity level, production patterns differ across countries. In Indonesia, Eucheuma seaweed (Eucheuma spp.) was the largest aquaculture product in 2023, contributing 53.5 per cent of national output. In Vietnam, the primary species in aquaculture is the pangasius catfish (Pangasianodon hypophthalmus), which accounts for 31.7 per cent of overall production. Meanwhile, in the Philippines, the third-largest producer, elkhorn sea moss (Kappaphycus alvarezii) dominated with a share of 64.5 per cent (SEAFDEC, 2026).

11.3.2. Maritime Transport

Southeast Asia is strategically situated at the intersection of the South China Sea and the Indian Ocean. The region's major seas and straits form some of the world's busiest sea lines of communication

(SLOCs). The maritime domain is an essential part of ASEAN's strategic, political, economic, and social life because it directly affects member states and their populations. Several ASEAN Member States rank among the countries with the longest coastlines in the world. Indonesia ranks fourth globally, with more than 95,181 km of coastline. The Philippines ranks eighth, with 33,900 km; Myanmar twentieth, with 14,708 km; Viet Nam twenty-third, with 11,409 km; and Malaysia twenty-seventh, with 9,323 km (ASEAN, 2023b). The importance of the region's SLOCs is underscored by the fact that 60 per cent of global maritime traffic passes through Asia. Approximately one-third of all cargo shipped worldwide is projected to pass through the South China Sea (Team, 2017). In 2019, ASEAN's international sea cargo throughput reached 2.8 billion tonnes, based on data available for all ASEAN Member States (ASEAN Stats, 2024).

Southeast Asia is an archipelago composed of various islands that are strategically important to countries outside the region (Simões Toccheto et al., 2014). With a population of over 600 million, this region is home to two major international commercial routes: the Singapore Strait and the Strait of Malacca. The Strait of Malacca is the second most important international sea route. It is a narrow passageway that is 500 nautical miles (800 kilometers) long. The width of the straits varies. It is 200 nautical miles at its widest point, narrowing funnel-like to 11 nautical miles at its southern extremity (Nordin Hussin, 2008). Approximately 140,000 vessels pass through the Malacca and Singapore Straits each year (Idris and Ramli, 2018).

Major ports in Southeast Asia remain crucial to regional and international maritime trade. Singapore is the region's leading maritime hub and ranks as the second-largest container port in the world. Malaysia also hosts two globally competitive ports, with Port Klang and the Port of Tanjung Pelepas ranked 10th and 15th worldwide, respectively. Thailand's Laem Chabang ranks 20th globally, while Viet Nam's Ho Chi Minh City and Hai Phong ports rank 22nd and 29th, respectively. Indonesia's Tanjung Priok ranks 27th among the world's container ports (World Shipping Council, 2024). Port infrastructure development is therefore essential to sustaining Southeast Asia's economic growth and expanding role in global trade. As trade volumes increase, ports face growing pressure to improve capacity, efficiency, and connectivity. Regional port performance is relatively strong, with an average berthing time of 0.73 minutes per TEU and turnaround time of 1.20 minutes per TEU, ranking second globally after East

Table 11.3: Top 10 Container Ports in ASEAN

Port	Country	Volume 2024 (Million TEU)	Volume 2023 (Million TEU)	World Rank
Singapore	Singapore	41,12	39,01	2
Port Klang	Malaysia	14,64	14,06	10
Tanjung Pelepas	Malaysia	12,25	10,48	15
Laem Chabang	Thailand	9,55	8,87	20
Ho Chi Minh City	Vietnam	9,16	7,40	22
Tanjung Priok	Indonesia	7,80	7,29	27
Hai Phong	Vietnam	7,15	6,34	29
Cai Mep	Vietnam	7,08	5,48	30
Manila	Philippines	5,50	5,21	36
Tanjung Perak	Indonesia	4,30	4,10	47

Source: World Shipping Council (2024)

Asia (UNCTAD, 2023). Table 11.3 provides an overview of the top 10 container ports in ASEAN.

Digital transformation is modernizing ports worldwide, although only around 20 per cent of the approximately 4,900 ports have upgraded their digital capabilities. Integrating digital transport systems across ASEAN's maritime sector is a crucial step toward enhancing regional connectivity, efficiency, and sustainability. ASEAN has adopted Smart Port Guidelines that provide a regional framework for developing, modernizing, and digitalizing ports within its Member States (ESCAP, 2024). ASEAN's commitment to smart and digital ports is particularly important given the strategic role of major Southeast Asian ports as gateways for global trade and regional connectivity. Several ports, including the Port of Tanjung Pelepas in Malaysia, have made significant progress in operational digitalization through the use of artificial intelligence, cloud-based terminal operating systems, and integrated port management systems (UOB, 2024).

Beyond efficiency and digitalization, ASEAN is increasingly integrating environmental sustainability into maritime transport through the implementation of environmentally friendly shipping practices that focus on the use of clean energy, policy alignment, and regional cooperation. Globally, the shipping sector accounts for nearly 2–3 per cent of greenhouse gas emissions, and major shipping routes in Southeast Asia are among the highest-emitting corridors in the world (IMO, 2025). In response, ASEAN member states have begun to implement measures such as alternative fuels, ship efficiency standards, and carbon reduction strategies in ports. Regional initiatives, including the ASEAN Maritime Transport Working Group and cooperation with international partners, promote low-carbon shipping corridors and green port development (ASEAN, 2023a).

The transition to green shipping reflects a shift in ASEAN maritime development from connectivity-driven logistics to sustainable maritime systems. Digital ports, energy-efficient ships, and cleaner fuels are increasingly seen as integrated components of regional economic competitiveness, not just environmental compliance. As a result, Southeast Asia's maritime sector is evolving into a sustainability-oriented logistics network that combines trade facilitation with climate mitigation goals (OECD, 2018; UNCTAD, 2023).

11.3.3. Marine Renewable Energy

Southeast Asia stands out as one of the most active areas regarding global energy developments. It is expected to have the second-highest energy demand growth over the next few decades, behind only India. The increased demand is fueled by robust economic expansion, population growth, and the region's role as a center for global manufacturing and industry. Consistent with international decarbonization goals, eight of the ten nations in this area have established targets for net-zero emissions: Brunei Darussalam, Cambodia, Laos, Malaysia, Singapore, and Vietnam aim for 2050; Indonesia has set its goal for 2060; and Thailand is planning for 2065 (IEA, 2024).

Renewable energy development across ASEAN varies considerably in scale and composition. As illustrated in Figures 11.3 and 11.4, Indonesia had the largest renewable energy supply in the region in 2023, reaching 34.5 Mtoe, followed by Thailand (22.1 Mtoe) and Viet Nam (18.2 Mtoe). Lao PDR led the region in the share of renewable energy in total energy supply, at 41.7 per cent, followed by Myanmar at 27.2 per cent and Cambodia at 25.5 per cent. ASEAN's principal renewable energy sources are biomass, hydropower, geothermal energy, and biofuels (ASEAN Centre for Energy, 2025). This pattern underscores the region's growing commitment to the energy transition and indicates scope for further diversification into marine renewable energy technologies such as offshore wind, tidal energy, wave energy, and ocean thermal energy.

In this context, marine-based renewable energy has become one of the strategic development areas in ASEAN, particularly as the region seeks cleaner and more sustainable energy sources. ASEAN has

Figure 11.3: Renewable Energy Supply in ASEAN in 2023

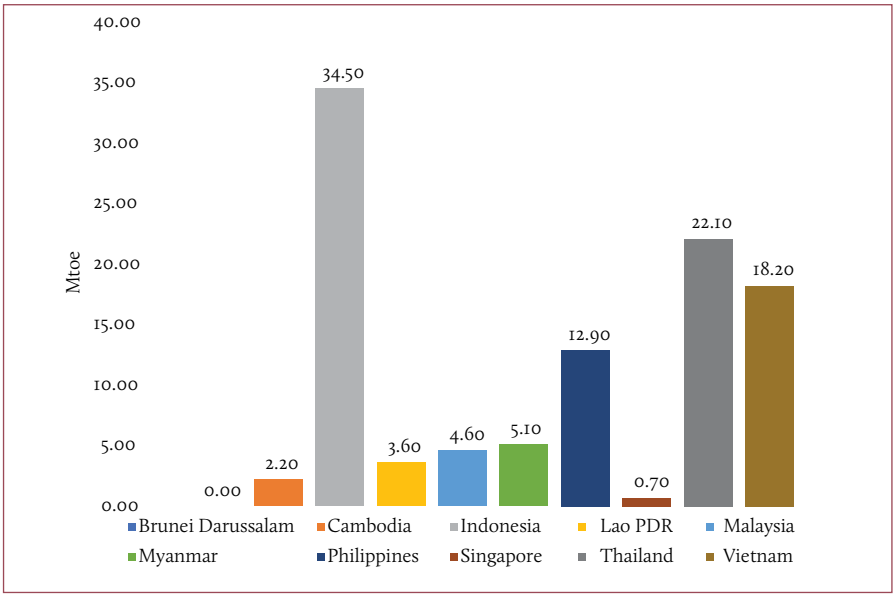
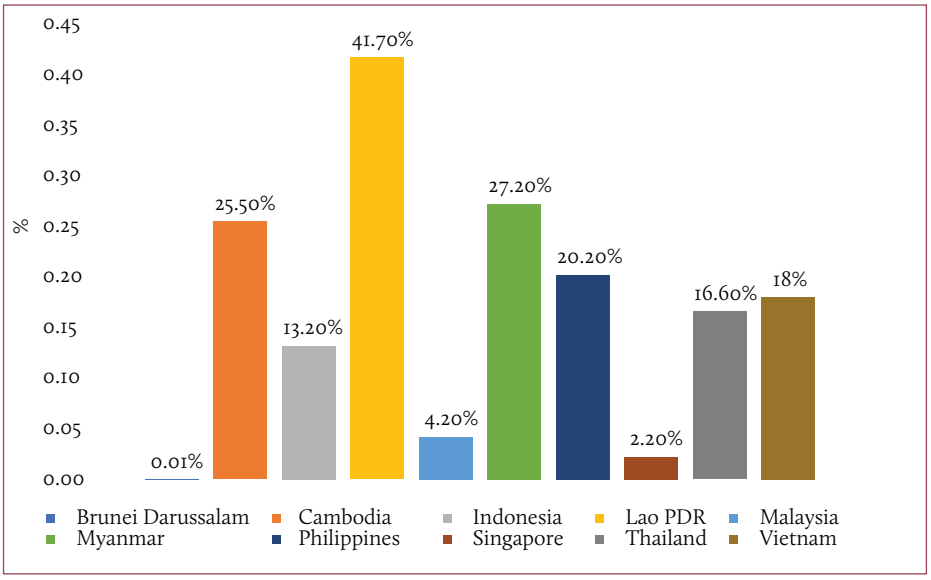


Figure 11.4: Renewable Energy Share in ASEAN's Energy Supply in 2023



Sources: ASEAN Centre for Energy (2025)

established a goal of achieving 36 per cent renewable energy within the energy composition of the region by the year 2030 (Quirapas and Taeihagh, 2021) from which there is a vast potential to harness energy. Wave, tidal energy, and ocean thermal energy conversion could be tapped, to provide alternative sources of clean and dependable energy in the region. This article contributes to the growing academic literature on ocean renewable energy (ORE). One source currently being developed is ORE, supported by the geographical characteristics of the region, which has many islands and high tidal dynamics, offering significant potential for marine energy utilization. In essence, Marine Renewable Energy (MRE) refers to a broad category that includes all types of marine energy applications aimed at producing renewable energy. This includes offshore wind facilities, floating solar energy installations, and different technologies designed to capture marine energy resources (Quirapas et al., 2015; Quirapas and Taeihagh, 2021). The Ocean Renewable Energy (ORE), on the other hand, more accurately refers to energy

derived directly from ocean dynamics, such as tidal currents, tidal ranges, waves, temperature gradients, and salinity gradients. Marine renewable energy sources include tidal energy, wave and current energy, Ocean Thermal Energy Conversion (OTEC), and offshore wind power (Quirapas and Taeihagh, 2021).

The adoption of renewable energy from the ocean has begun in various ASEAN countries, although most are still in the research, demonstration, and pilot project stages. In Thailand, King Mongkut's University of Technology Thonburi (KMUTT) is developing a coastal wave power plant through a laboratory prototype. Meanwhile, Indonesia has enormous marine energy potential, with an estimated practical wave energy potential of 1,995 MW, tidal energy of 41,001 MW, and Ocean Thermal Energy Conversion (OTEC) of 17,989 MW. In the Philippines, the potential tidal energy amounts to 35 TWh annually, which corresponds to a power capacity of around 40–60 GW. Meanwhile, the potential for wave energy is anticipated to be 33 kW/m/year on the Pacific coast and 35 kW/m/year on the South China Sea coast. In Vietnam, the tidal energy potential is estimated to be between 200 and 500 MW, and the wave energy potential is roughly 350 MW (Quirapas and Taeihagh, 2021). Moreover, ASEAN nations are viewed as having significant opportunities for advancing marine renewable energy, such as offshore wind projects in Vietnam (Duong, 2022).

At the national level, a number of countries have begun to include marine energy in their energy transition strategies. Brunei Darussalam, through its Department of Energy, is targeting a 30 per cent contribution from renewable energy by 2035 and is exploring floating solar power plants (Narayan, 2025; Ramli and Waskitho, 2023). Cambodia has demonstrated its commitment to sustainable energy through increased solar energy production and investment. However, the utilization of marine-based energy is still not optimal. This includes energy from wind, wave, and tidal sources. Malaysia is actively encouraging the development of marine energy. The country is presently searching for appropriate sites and formulating guidelines to examine the potential for harnessing wave energy, tidal energy, ocean thermal energy, and ocean current energy for electricity generation. The Philippines has set a target to elevate the proportion of renewable energy to 35 per cent by the year 2030 and to 50 per cent by 2040, concentrating particularly on research related to tidal and ocean energy (Alexander, 2023). Despite its geographical constraints, Singapore is advancing technologies for renewable ocean energy and intends to cut greenhouse gas emissions. The nation is additionally focused on establishing standards for green energy, processes for certifying renewable energy, researching ocean energy, and creating test locations for tidal energy facilities.

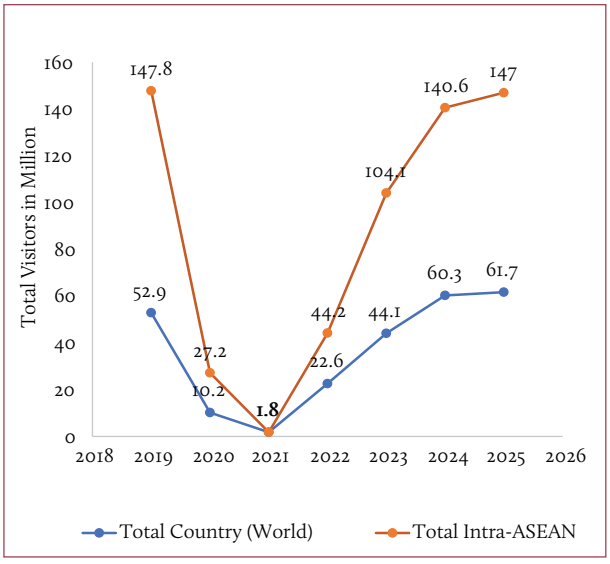
11.3.4. Marine and Coastal Tourism

Coastal cities worldwide rely significantly on beach tourism as a driver of economic growth (Mejjad et al., 2022; Schaffer and Tham, 2020). Globally, coastal and marine tourism accounts for nearly half of all tourism activity and is estimated to be worth around US$ 4.6 trillion, representing approximately 5.2 per cent of global GDP (Ocean Panel, 2020). In ASEAN, tourism is a major economic sector and a key component of the ASEAN Economic Community. In 2019, travel and tourism contributed 12.1 per cent (US$ 380.2 billion) to the region's GDP and accounted for around 13.3 per cent of employment, equivalent to 42.3 million jobs. International tourist arrivals to ASEAN countries increased from 135.1 million in 2018 to 147.8 million in 2019, with a compound annual growth rate of 7.1 per cent during 2015–2019 (Strategic, 2019). However, the sector contracted sharply during the 2020–2021 pandemic. As shown in Figure 11.5, total visitor arrivals to ASEAN Member States fell from 147.8 million in 2019 to 27.2 million in 2020 and just 1.8 million in 2021 because of widespread travel restrictions and border closures. Since 2022, the sector has shown strong signs of recovery. Total visitor arrivals rose to 44.2 million in 2022, 104.1 million in 2023, and 140.6 million in 2024, and are expected to reach approximately 147 million in 2025, nearly returning to pre-pandemic levels. Intra-ASEAN tourism has

followed a similar trajectory, rising from 22.6 million visitors in 2022 to an estimated 61.7 million in 2025. This recovery underscores the resilience of ASEAN's tourism sector and its continuing importance as a driver of regional economic growth, employment, and connectivity (ASEAN Stats, 2025).

From the 1960s to the present, coastal tourism has been one of the key spatial patterns of destination development in the ASEAN region (Hampton et al., 2024). Since the 1980s, coastal areas in Southeast Asia have become major destinations for international mass tourism. Coastal resort areas have transformed from small-scale, low-cost tourist enclaves to large, high-investment tourist areas that accommodate significant numbers of tourists through international resort chains and global franchises. These geographical transformations are especially noticeable in the three ASEAN countries where coastal tourism is a significant factor: Indonesia, Malaysia, and Thailand (Hampton et al., 2024). The extent of beach tourism can be demonstrated through the number of hotel rooms, which provides an indication of a destination's relative scale. For instance, in 2018, Bali had more than 53,000 designated hotel rooms, significantly exceeding Yogyakarta, Indonesia's second-largest tourist destination, which had approximately

Figure 11.5: Visitor Arrivals to ASEAN Member States by Country of Origin



Source: ASEAN Stats (2025)

14,300 rooms (Hotel Investment Strategies, 2019). Beach and marine tourism are key drivers of the ASEAN tourism sector. Internationally recognized destinations, such as Bali, Palawan, Phuket, and Preah Sihanouk Province, attract large numbers of visitors each year (ASEAN, 2025). The popularity of these destinations has led to the concentration of tourism development in coastal areas, especially in Thailand and Malaysia. Large-scale resort complexes and supporting infrastructure in these areas generate significantly higher tourism activity than recreational destinations inland.

The development of coastal tourism destinations is a key priority of ASEAN countries. In Cambodia, the government prioritizes the development of coastal tourism infrastructure, including road connectivity, airports, and sanitation systems, as a key requirement for driving growth in the tourism sector. In Indonesia, coastal and marine areas are leading tourist destinations as well as significant sources of economic activity. The government encourages environmentally sustainable tourism practices by utilizing the principles of ecotourism and community-centered tourism to aid in the conservation and sustainable management of marine resources while generating economic prospects for local communities. Launched in 2018, the Sustainable Tourism Development in Indonesia promotes a broader and more inclusive strategy for growth, which encompasses the establishment of tourism projects focused on marine environments in four specific areas (World Bank, 2021). Malaysia has taken numerous steps to guarantee the long-term viability of its tourism sector. The National Tourism Policy for 2020 to 2030 emphasizes the importance of island and coastal tourism to foster sustainable development, curb overtourism, establish sustainability certifications, and enhance governance capacity. Additionally, the National Ecotourism Plan for 2016 to 2025 designates marine protected regions as ecotourism spots while improving the management of both marine and land resources. In the Philippines, the Department of Tourism has recognized national parks and cultural

heritage locations in coastal and marine regions as priorities for sustainable tourism development.

11.4. Barriers to Implementing the Blue Economy in ASEAN

11.4.1. Regulatory Fragmentation

A major challenge to the application of the Blue Economy within ASEAN is the fragmentation of legal and policy frameworks governing marine and coastal resources. The Blue Economy is inherently cross-sectoral. However, in many ASEAN member states, these sectors are managed by different ministries and agencies operating under separate legal and institutional frameworks, often with limited coordination. The absence of integrated ocean governance mechanisms creates policy overlaps, regulatory inconsistencies, and jurisdictional conflicts that hinder effective decision-making and resource management.

Several ASEAN countries still lack comprehensive national blue economy strategies, marine spatial plans, or unified ocean policies. As a result, economic development objectives frequently compete with environmental conservation priorities, leading to inefficiencies in policy implementation and resource allocation. At the regional level, differences in national regulations, standards, and institutional arrangements further complicate efforts to promote cross-border cooperation and harmonized blue economy initiatives.

11.4.2. Environmental Sustainability Risks

Environmental decline represents a significant challenge to the enduring viability of the Blue Economy in the ASEAN region. The marine and coastal ecosystems in this region serve as the essential basis for fishing, tourism, coastal protection, biodiversity conservation, and carbon sequestration. However, intensifying economic activities and resource exploitation are putting increasing pressure on the environment.

Overfishing and illegal, unreported and unregulated (IUU) fishing continue to affect several AMS. Cambodia, Myanmar, the Philippines and Vietnam continue to struggle to control unsustainable fishing activities (ADB, 2020; Bello, 2021). Indonesia has reported that a significant proportion of its fish stocks are either fully exploited or overfished. Marine plastic pollution is another major concern. Indonesia and Vietnam are among the largest contributors to global marine plastic leakage, while Thailand and the Philippines continue to struggle with ineffective waste management systems and marine debris. According to a study, six out of ten ASEAN countries are among the top twenty nations worldwide with the most mishandled plastic waste. The countries are Indonesia (2nd), the Philippines (3rd), Vietnam (4th), Thailand (6th), Malaysia (8th), and Myanmar (17th) (Jambeck et al., 2015). Habitat degradation is also widespread. Indonesia has experienced significant mangrove loss and coral reef degradation, while Cambodia and Myanmar continue to face pressure on their coastal ecosystems due to deforestation and unsustainable development activities.

11.4.3. Financial Barriers

The successful transition toward a sustainable Blue Economy requires investments in infrastructure, technology, innovation, and ecosystem restoration. However, financial constraints remain a major obstacle across ASEAN.

Cambodia faces limited public and private investment in ocean-based sectors, restricting its ability to develop sustainable marine industries and conservation initiatives. In the Philippines and Viet Nam, inadequate port infrastructure, logistics systems, and coastal connectivity continue to limit economic opportunities in maritime sectors. Singapore, while possessing advanced maritime infrastructure, faces high development and labor costs that may affect the competitiveness of emerging blue economy sectors.

11.4.4. Institutional and Governance Limitations

Institutional capacity remains uneven across ASEAN and represents a major barrier to effective Blue Economy implementation. Successful ocean governance requires capable institutions, skilled human resources, reliable data systems, and effective monitoring and enforcement mechanisms.

Cambodia faces shortages of skilled personnel and institutional capacity to implement blue economy-related policies and regulations. In Indonesia, fisheries monitoring and enforcement systems face difficulties due to the country's vast maritime territory. The Philippines also faces governance challenges at the local level, where technical and financial limitations constrain the implementation of marine resource management programs. Viet Nam has identified limited awareness and insufficient human resource capacity as barriers to sustainable marine development.

11.4.5. Climate Change and Resilience Challenges

Climate change is a cross-cutting challenge affecting all aspects of the Blue Economy. The Philippines, with its extensive coastlines, low-lying coastal areas, and dependence on marine resources, is particularly vulnerable to climate-related risks.

The Philippines is regarded as one of the countries most susceptible to the impacts of climate change globally. It faces frequent typhoons, coastal flooding, and rising sea levels. Thailand is also extremely susceptible to climate threats and ranks among the nations that are significantly impacted by climate change. Singapore is growing increasingly concerned about rising sea levels and protecting its coastal infrastructure. Meanwhile, Indonesia's coral reef ecosystems are becoming more vulnerable to coral bleaching events associated with rising ocean temperatures. In Cambodia and Myanmar, mangrove ecosystem degradation further increases coastal vulnerability to storms and flooding.

11.5. Strategic Pathways for a Sustainable and Inclusive ASEAN Blue Economy

Effective implementation of the Blue Economy in ASEAN requires a comprehensive strategy to address the region's interconnected economic, environmental, institutional, and social challenges. A key priority should be strengthening governance and regulatory coherence, as many ASEAN Member States continue to face fragmented policy frameworks, overlapping institutional mandates, and limited cross-sectoral coordination. Strengthening regional cooperation through the ASEAN Blue Economy Framework (ABEF), marine spatial planning, integrated coastal management, and cross-border collaboration can improve policy consistency and support the sustainable management of shared marine resources.

At the same time, greater emphasis should be placed on environmental sustainability and ecosystem restoration. Persistent challenges such as overfishing, illegal, unreported, and unregulated (IUU) fishing, marine plastic pollution, coral reef degradation, mangrove loss, and biodiversity decline threaten the long-term viability of marine-based industries across the region. Strengthening marine conservation measures, promoting sustainable fisheries and aquaculture practices, restoring coastal ecosystems, and expanding blue carbon initiatives can help safeguard natural capital, enhance climate resilience, and support economic growth.

It is equally important to address financial and technological constraints in order to accelerate blue economy development. Many ASEAN countries continue to experience limited access to sustainable financing, inadequate infrastructure, insufficient research capacity, and gaps in technological adoption. Expanding innovative financing mechanisms, such as blue bonds, blended finance, public-private partnerships, and impact investment funds, can help mobilize resources for blue economy projects.

Human capital development and stakeholder participation are also necessary to ensure that the blue economy grows inclusively and equitably. Strengthening the technical capacity of government institutions, labor skills, and knowledge transfer can facilitate the transition to more sustainable ocean-based sectors. Additionally, it is essential to ensure the meaningful participation of coastal communities, small-scale fishers, women, youth, and MSMEs to distribute the benefits of blue economy development more equitably and enhance social resilience.

Finally, ASEAN should continue to encourage both traditional and emerging blue economy sectors, while also incorporating climate change adaptation and mitigation into development strategies. ASEAN should strengthen its position as a global leader in sustainable ocean-based development by combining good governance, environmental stewardship, sustainable financing, technological advancement, and inclusive participation. This will ensure long-term economic growth and ecological resilience.

11.6. Conclusion

The Blue Economy has emerged as ASEAN's strategic approach to achieving long-term economic growth while conserving marine and freshwater resources. Adopting the ASEAN Blue Economy Framework (ABEF) demonstrates the region's dedication to integrating economic development, environmental sustainability, and social inclusion into a shared agenda. ASEAN has tremendous potential in several key blue economy sectors, including fisheries and aquaculture, maritime transport, marine renewable energy, and marine and coastal tourism. Fisheries and aquaculture are critical to supporting food security, livelihoods, and regional economic development. Maritime transport benefits from ASEAN's location along some of the world's busiest shipping routes. The region also holds significant potential for developing marine renewable energy, supported by its abundant ocean resources. Marine and coastal tourism also contributes significantly to economic growth, employment, and local community development across ASEAN member states.

Despite these opportunities, implementing the Blue Economy in ASEAN faces challenges such as fragmented regulatory frameworks, environmental degradation, limited financing, institutional and governance constraints, technological gaps, and capacity issues. Overcoming these challenges requires stronger regional cooperation, improved governance and policy coordination, sustainable financing mechanisms, technological innovation, ecosystem conservation, and inclusive stakeholder participation.

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12 Blue Economy Prospects in India: Strengthening ASEAN-India Partnership

Pankhuri Gaur

12.1. Introduction

The concept of the Blue Economy has taken centre stage in contemporary economic and environmental discourse in India. It is broadly defined as the sustainable use of marine and ocean resources to support economic growth, improve livelihoods, and safeguard ecosystem health. The Blue Economy is integrally multi-sectoral, making it one of the most diverse and complex economic sectors globally. The Blue Economy integrates environmental science, technology and innovation, law, economics, and strategic dimensions, and, its scope extends to fisheries, maritime transport, coastal tourism, marine biotechnology, renewable ocean energy, seabed resources, etc. This vast sectoral coverage makes the Blue Economy not only a scientific pursuit but also a strategic economic agenda for nations with significant maritime potential.

With more than 11,098 kilometres of coastline, 1,382 islands, and an Exclusive Economic Zone (EEZ) of approximately 2.4 million square kilometres, India holds a strategic position in the vital global shipping lanes in the Indian Ocean. India's maritime legacy ranges from maritime trade with Mesopotamia to building tidal docks at Lothal, through cultural expansion, naval power, etc. Over the years, the role of the oceans in the Indian economy has increased, with millions directly and indirectly depending on the oceans for their livelihood. For the management of the marine resources, the Government of India established the Department of Ocean Development (DOD) in 1981, under the aegis of the Prime Minister's Office (GoI, 2020). In 2006, the Department was rechristened as the Ministry of Ocean Development (MOD) for promoting and coordinating ocean development activities. During the same year, the roles and responsibilities of the Ministries were restructured under the Ministry of Earth Sciences, which is now the nodal ministry for the Blue Economy in India.

As the Blue Economy is a cross-cutting issue, encompassing the role of more than 24 ministries and state actors in India (MoES and EY LLP, 2025a), the Government is in the process of finalising the National Policy on Blue Economy. It is proposed to establish a National Blue Economy Advisory Council, which would include Secretaries from the relevant ministries/departments and Chief Secretaries or Principal Secretaries from the coastal states and industry as members. Additionally, India foresees this sector to become an important driver of economic growth. In this regard, the country has

rolled out Maritime India Vision 2030, which provides a comprehensive framework for the development of the maritime sector, including shipping, ports and waterways, to increase logistics efficiency through modernised, technology-driven and sustainable initiatives (GoI, 2021). In the long run, the Maritime Amrit Kaal Vision 2047 aims to position India among the global maritime leaders and integrates maritime development with "Viksit Bharat" aspirations (GoI, 2023).

Apart from establishing national goals and policies, India has opened regional initiatives and cooperation with its various regional partners in the Blue Economy sector. India's multi-platform engagement through ASEAN, Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), India-Africa Forum Summit, Indian Ocean Rim Association (IORA), Indo-Pacific Ocean Initiative (IPOI), and BRICS offers a pathway for broader regional coordination and prosperity rooted in shared stewardship of the world's oceanic commons. Following Indonesia's launching of Oceans 20 (O20) in the G20 framework, India also advanced Blue Economy priorities in global governance discourse during its G20 Presidency (G20 India, 2023). ASEAN and India, together, through various regional forums, have been cooperating in the field of the Blue Economy.

12.2. Need for a Blue Economy Accounting Framework

Though it has gained considerable traction in global policy discourse over the past decade, one can witness the emergence of a Blue Voice (Mohanty, 2024); the Blue Economy globally lacks a standardised or universal definition. Several countries and regional organisations have defined the Blue Economy based on the natural endowments, national priorities, technology, and geographical limitations (Surís-Regueiro *et al.*, 2013; NOAA, 2015). India defines its Blue Economy as 'a subset of the national economy comprising the entire system of ocean resources and man-made economic infrastructure in marine, maritime, and onshore coastal zones within India's legal jurisdiction, aiding the production of goods and services, with clear linkages to economic growth, environmental sustainability and national security (GoI, 2020). Thus, India understands the Blue Economy as part of its overall economy, ensuring its integration with macroeconomic planning at the national level. It extends beyond marine activities to encompass maritime and onshore coastal zones, including inland waterways and man-made economic infrastructure such as ports, shipbuilding, and coastal industrial zones.

As a multi-sectoral science, India's approach to the Blue Economy recognises the convergence of diverse activities, spanning from traditional sectors such as fisheries and aquaculture to emerging domains including deep-sea mining, offshore renewable energy, marine biotechnology, and ocean-based tourism. This covers all broad economic sectors, namely, agriculture, mining, manufacturing and industries, and services (Mohanty *et al.*, 2015). However, unlike traditional industries, there are no stylised facts or standardised methodologies that capture its impact on GDP. Several countries rely on their own methodology, shaped by their natural resource endowment and technological capacity. The challenge lies in Blue Economy accounting, which has historically been underestimated. Many sectors and industries remain unrecognised or underreported, leading to an incomplete picture of their economic significance (Colgan, 2016). Identifying and categorising these industries is therefore critical to understanding their true potential.

India's Blue Economy, based on preliminary estimation, accounts for nearly 4 per cent of GDP in 2016–17, highlighting its high economic relevance. Between 2011-12 and 2016-17, the Blue Economy in India witnessed robust growth, outpacing the overall economy. This trajectory demonstrates its potential as a driver of inclusive development, offering opportunities for employment, innovation, and sustainable resource management. Though

not comparable in terms of methodologies and definition, India's Blue Economy estimates surpass those of advanced economies such as the European Union, the United States, Japan, and Canada. This underscores both the scale of India's maritime resources and the dynamism of its coastal industries. It has been noted that Blue Economy accounting remains an underestimate of true scale, owing largely to the non-identification of emerging sectors and sub-sectors (GoI, 2020) and the application of appropriate weights for the partial Blue Economy sector. A benchmark survey of the sector would act as a necessary step to further the Blue Economy Accounting framework in the country. Hence, estimating the contribution of the Blue Economy is complex, but equally essential.

12.3. Blue Economy Sectors

12.3.1. Fisheries and Aquaculture

The fisheries and aquaculture sector occupies a pivotal position in the Indian economy, both in terms of scale and socio-economic impact. The fisheries sector accounts for 7.4 per cent of the agricultural gross value added of India and provides livelihood to nearly 16 million people at the primary level (Rajeev and Bhandarkar, 2022). India is the second largest fish producer globally, contributing 8 per cent of the world's share. The fisheries sector is an essential source of food and nutritional security, along with export earnings. However, the sector faces challenges related to high operational costs, environmental sustainability, technology and infrastructure gaps, among others (Patel *et al.,* 2025; Krishnan *et al.*, 2026). Recent budgetary allocations mark a strong governmental commitment to addressing these constraints. Moreover, policy frameworks like the National Policy on Marine Fisheries (2017), Fisheries and Aquaculture Development Fund (2018), and the Pradhan Mantri Matsya Sampada Yojana (2020) have provided institutional support for modernisation, infrastructure development, and ecosystem-based management of the sector.

12.3.2. Maritime Transport and Infrastructure

Maritime transport is the backbone of India's external trade, with ports handling most of the trade by volume and value, underscoring the strategic importance of port infrastructure for sustaining economic growth. India currently has 12 major ports and over 200 non-major ports under the centre and state jurisdiction, respectively. The country has been heavily investing in port modernisation through its Sagarmala programme since 2015 to reduce logistics costs, improve turnaround times, and create economic clusters around ports. The programme encompasses more than 800 projects for port modernisation, coastal community development, industrial clusters and inland waterways. (GoI, 2025) The adoption of green port practices and the digital transformation of port infrastructure would help India align with international standards. India is actively diversifying its maritime transport modalities. Inland Water Transport (IWT) has gained prominence as an energy-efficient alternative, with the government declaring 111 National Inland Waterways, spanning 14,500 km of navigable routes. Coastal shipping is being promoted through the development of multi-modal corridors for cost-effective cargo movement and regional connectivity.

India also possesses the 13th largest merchant fleet by tonnage globally. The Shipping Corporation of India (SCI) operates a mixed fleet of bulk carriers, tankers, and container vessels. Shipbuilding also has a huge potential in India. Currently, India's share in the world market is nearly 1 per cent. However, with the massive programmes and policies initiated in the sector under Maritime India Vision 2030, India aims to become one of the top 10 shipbuilding nations in the world (GoI, 2021). There are several challenges that the country faces, including stiff competition from global leaders, overcrowded ports, shallow draft, etc., in maritime transport. Yet with revised and effective policies and new initiatives, like Sagarmala, Shipbuilding Financial Assistance Policy, Atal Innovation Mission, Indian Ports Act, 2025 and Merchant Shipping Act, 2025, India is focusing on becoming a global maritime hub by 2047.

12.3.3. Marine Offshore Energy

Marine offshore energy, including hydrocarbons and renewable sources, represents one of the most strategically vital pillars of India's blue economy. Some of the primary offshore hydrocarbon-producing areas in India are the Bombay High field off Maharashtra, the Cauvery basin and Andaman offshore basin in the south and the Krishna-Godavari basin off the east coast. The nation has also introduced the Hydrocarbon Exploration and Licensing Policy (HELP) in 2016 to introduce uniform licensing for the exploration and production of hydrocarbons (GoI, 2016). Though India is an import-dependent country, the offshore oil and gas sector meaningfully contributes to the domestic energy production. However, marine renewable energy provides a frontier for India's energy transition. India has a huge potential in offshore wind energy on the west and south coast, and the government is targeting 30 gigawatts of offshore wind energy capacity by 2030 (GoI, 2023). The country has been endowed with the prerequisites for tidal and wave energy along specific coastal stretches, and pilot projects have been initiated. India has also developed a first-of-its-kind Ocean Thermal Energy Conversion (OTEC)-powered desalination plant with indigenous technology, providing freshwater and generating electricity, particularly useful for the islands. India's Blue Economy strategy increasingly recognises offshore and marine energy, yet to reach its full potential, as a cornerstone for the nation's long-term energy security.

12.3.4. Marine and Coastal Tourism

India's vast maritime landscape, comprising pristine beaches, coral reefs, mangrove forests, estuaries, and marine national parks, presents significant opportunities for developing a vibrant marine and coastal tourism economy. Coastal states and the union territories in India have emerged as premier coastal tourism destinations (MoES and EY LLP, 2025b). From beaches in Goa to backwaters in Kerala, through marine biodiversity in the Andaman and Nicobar Islands, the country provides enormous potential for sports tourism, ecotourism, lighthouse tourism and cruise tourism. The multiplier effect of investment in coastal and marine tourism is enormous, with employment opportunities, infrastructure expansion, local community development, cultural preservation, etc. The economic potential of marine and coastal tourism in India is huge, but it is still considered underutilised relative to global benchmarks. Schemes such as the Swadesh Darshan 2.0 initiative, PRASHAD (Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive) Scheme, and the Sagarmala Programme have specifically earmarked funds for the development of coastal circuits, pilgrimage destinations, port-linked tourism infrastructure, and waterfront regeneration projects.

However, the sector faces formidable challenges, like plastic pollution, unregulated coastal construction, coral bleaching, beach erosion, safety protocols for adventure tourism, etc., that must be addressed to realise its full potential. India has been focusing on addressing such challenges through various schemes and initiatives. For instance, the MISHTI (Mangrove Initiative for Shoreline Habitats and Tangible Incomes) Scheme was launched by the Government of India in 2023 to conserve and restore the mangrove ecosystem, which simultaneously aims at promoting coastal sustainable livelihoods (PIB, 2023). India is developing this sector under the Blue Economy framework for creating prosperity for coastal communities with technology and environmental integration.

12.3.5. Placers and Deep-Sea Minerals

The deep ocean floor holds vast deposits of polymetallic nodules, containing manganese, nickel, copper and cobalt, and polymetallic sulphides, rich in zinc, gold, silver and copper, which are critical for the energy transition, including semiconductors, green technologies and rare earth elements. India has an exclusive right to explore 75,000 square kilometres in the Central Indian Ocean Basin for polymetallic nodules and has recently signed another contract with the International Seabed Authority to explore polymetallic sulphides, making the country the 'pioneer investor' and the first to hold two contracts in the world (PIB, 2025a). In the context of placer mining,

states like Odisha, Kerala, and Andhra Pradesh have rich natural endowments with significant deposits along the coastline. Despite several challenges, such as technological limitations and environmental and regulatory hurdles, India has been addressing these dimensions under its Deep Ocean Mission (DOM), 2021. With an approved budget of INR 4,077 crore for 2021-26, the DOM is focusing on six pillars: deep-sea mining and manned submersible technology; ocean climate change advisory services; deep-sea biodiversity conservation; deep-sea survey and exploration; ocean energy and freshwater generation; and advanced marine biology research. The Samudrayaan programme is the centrepiece of the Mission, advancing India's indigenous capacity for manned deep-ocean exploration to a depth of 6,000 metres (Cranworth, 2025).

12.4. Challenges for the Blue Economy

Despite its considerable potential, India's Blue Economy is confronted with several challenges that constrain both its growth and long-term sustainability. These challenges are multidimensional, encompassing environmental, infrastructural, socio-economic, and geopolitical concerns, and their effective resolution is central to India's maritime development agenda. Coastal and marine ecosystems in India are increasingly affected by environmental degradation arising from untreated sewage, industrial effluents, and plastic waste (CPCB, 2021). In particular, the discharge of untreated industrial wastewater poses a serious threat to marine biodiversity. Furthermore, certain conventional fishing practices, especially those involving mechanised trawlers, have contributed to unsustainable resource extraction and the overexploitation of fish stocks. Climate-related pressures, including sea-level rise, ocean acidification, and increasing sea-surface temperatures, are altering fish migration patterns and placing coastal infrastructure at heightened risk (Jyotsna *et al.,* 2024). The growing frequency and intensity of cyclonic events further exacerbate vulnerabilities among coastal communities and port infrastructure. Consequently, environmental degradation not only disrupts ecological balance but also directly affects livelihood security, thereby making sustainability a core concern within India's Blue Economy framework.

India's port and marine infrastructure continues to lag behind the international benchmarks. Several ports remain constrained by shallow drafts, congestion, and limited integration of advanced logistics systems, which contribute to higher turnaround times and transaction costs, thereby weakening India's competitiveness in global trade (Munjal and Pohit, 2023). Inadequate investment in ocean science, technological innovation, cold-chain infrastructure, processing facilities, and modern marine vessels further limits sectoral efficiency. India faces a persistent financing gap, particularly for small and medium enterprises, artisanal fishing communities, and blue infrastructure projects in the Blue Economy sectors (Patel *et al.,* 2025). Significant gaps persist in autonomous underwater vehicles, deep-sea mineral extraction, and advanced marine monitoring. Emerging sectors like offshore energy and marine biotechnology require specialised skills that are scarce in India's workforce. India's SAGAR (Security and Growth for All in the Region) and MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions) visions link Blue Economy development to maritime security (Gaur and Tiwari, 2026), but operationalising these visions remains a challenge.

Being multi-sectoral in nature, one of the challenges the Blue Economy sector in India faces is the complexity in governance. The Ministry of Earth Sciences is the nodal ministry for Blue Economy activities, but more than 24 other ministries and state actors are involved in sharing the responsibility of India's Blue Economy. This leads to poor coordination, weak enforcement, duplicated efforts and a lack of an integrated framework. Addressing these issues requires a sustainable, inclusive, and technologically advanced approach. Additionally, the absence of a standardised estimation framework is hampering evidence-based policymaking in the sector, which

requires a comprehensive satellite accounting (Colgan, 2016; GoI, 2020). India is pursuing the formal activation of its National Blue Economy Policy, which is still in draft form. A unified National Blue Economy Policy would help India in balancing economic growth with ecological sustainability to leverage its maritime resources to their full capacity.

12.5. Areas of Regional Cooperation

ASEAN is one of India's maritime neighbours, linked by ancient maritime routes that have long connected civilisations, cultures, and trade between the two regions. Sharing resources of the Indian Ocean, ASEAN and India both have huge potential in the Blue Economy but also face common challenges that can be addressed together. The 22nd ASEAN-India Summit in 2025 declared 2026 as the ASEAN-India Year of Maritime Cooperation to leverage the strategic partnership for ocean-centred development (PIB, 2025b). The convergence of ASEAN and Indian frameworks on the Blue Economy provides a structured basis for cooperation across several key areas:

- **Sustainable Fisheries and Aquaculture:** Fisheries represent perhaps the most immediate and people-centred area of collaboration. Both sides grapple with shared threats, including Illegal, Unreported and Unregulated (IUU) fishing, declining fish stocks, overfishing, and climate-driven shifts in marine ecosystems. Joint management frameworks for shared fisheries, data-sharing platforms on fish stocks and weather patterns, with harmonised certification standards for sustainable seafood trade, may benefit both sides enormously. India's experience under the Pradhan Mantri Matsya Sampada Yojana, targeting capacity building, cold chain infrastructure, and livelihood support for small-scale fishers, offers a model that many ASEAN countries could adapt with Indian technical assistance.
- **Marine Pollution and Ocean Health:** Several river systems in ASEAN member states discharge substantial volumes of plastic waste into the global marine environment, while India's coastal zones are similarly affected by industrial effluents, urban waste, and broader forms of environmental degradation. In addition, coral reef bleaching, intensified by rising ocean temperatures, has adversely affected marine ecosystems that sustain the food security and livelihoods of millions of coastal communities across both regions. Cooperation in marine pollution governance could therefore encompass joint clean-up initiatives, coordinated monitoring of plastic waste and oil spills, collaborative research on marine debris movement, and technology transfer for coastal waste management. The ASEAN Blue Economy Framework identifies digital platforms for marine pollution data-sharing as a priority area, and India's expanding capabilities in satellite-based maritime domain awareness could be leveraged to support ASEAN partners in real-time ocean monitoring.
- **Marine Renewable Energy:** The Indo-Pacific region is endowed with vast offshore wind potential, promising tidal and wave energy resources, and significant scope for ocean thermal energy conversion (OTEC). India has been scaling up its offshore wind ambitions, while several ASEAN nations are exploring marine-based renewable energy to meet their net-zero commitments. Joint development projects, co-investment in offshore infrastructure, and the creation of green shipping corridors between Indian ports and Southeast Asian counterparts are among the actionable possibilities. The ASEAN-India Science, Technology, and Innovation cooperation framework already identifies alternative energy and environmental management as priority areas, and a dedicated blue energy workstream could be created under this umbrella to accelerate deployment.
- **Port Connectivity and Maritime Trade:** Maritime infrastructure is the backbone of the India-ASEAN economic relationship. Green port development, digital customs harmonisation, and logistics efficiency improvements could substantially reduce trade costs for both sides. Strengthening

this infrastructure also has an advantage for diversifying regional supply chains away from single-point dependencies.

- **Maritime Tourism:** Coastal and maritime tourism offers another avenue for shared growth. India's rich coastline and ASEAN's world-renowned marine tourism destinations are natural complements. Developing integrated cruise circuits, underwater tourism packages, and heritage maritime routes that connect India with Southeast Asia could significantly boost the tourism economies of coastal communities.
- **Ocean Science, Research, and Capacity Building:** Deep-sea exploration, marine biodiversity research, and ocean science represent areas where India's growing capabilities can serve as a regional public good. India's participation in the Indo-Pacific Oceans Initiative (IPOI) also provides a multilateral framework within which India-ASEAN research collaboration on marine biodiversity, seabed mapping, and oceanographic data can be structured. Capacity-building programmes for ASEAN fishers, marine scientists, and coastal administrators would strengthen human capital across the region (Gupta, 2025). India's network of marine research institutions could partner with ASEAN counterparts on joint expeditions, shared observational infrastructure, and training initiatives, building the institutional depth that long-term ocean governance requires.
- **Climate Resilience and Coastal Ecosystem Protection:** Rising sea levels, intensifying cyclones, and coral bleaching threaten millions of people who depend on coastal ecosystems for their livelihoods. Blue carbon ecosystems, such as mangroves, seagrass beds, and salt marshes, are among the most powerful natural carbon sinks available, and both India and ASEAN countries host significant extents of these habitats. Joint efforts to restore and protect these ecosystems, alongside the development of early-warning systems for maritime disasters, would serve both climate and humanitarian goals. India's established expertise in humanitarian assistance and disaster relief could be channelled into a structured ASEAN-India maritime disaster response framework.

12.6. Conclusion

The geographic proximity, shared ecosystems, and interlinked economies of India and the ASEAN nations create a natural basis for ocean cooperation. The commonalities in the definition of Blue Economy in India and ASEAN raise the need for both regions to set up a regional approach for the sector, which would be a stepping stone for developing a regional economic framework. Institutional depth, technology sharing and sustained financing, through regional blue carbon credit projects, are necessary to bring synergies between India and ASEAN Blue Economy policies. As nations increasingly turn to the oceans for sustainable development, the Blue Economy must be recognised not merely as a collection of maritime industries but as a strategic growth engine for the 21st century.

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13 India-ASEAN Connectivity: Achievements and Way Forward

Prabir De, Adrija Ganguly and Vanshika Goyal

13.1. Introduction

Anchored in the Act East and Neighbourhood First policies, India and ASEAN share a Comprehensive Strategic Partnership (CSP). Over time, trade in goods and services has expanded alongside increases in investment flows, tourism and people-to-people ties between India and ASEAN. As India's largest regional trading partner, ASEAN has become pivotal to India's integration with global and regional value chains.

As noted in the preceding chapters of this report, the changing composition of India's exports to ASEAN between 2015 and 2025 has highlighted a shift towards high-value manufactured goods, alongside growing transport challenges. Unlike traditional bulk commodities, pharmaceuticals, engineering goods, electrical machinery, and perishable agricultural products require efficient transportation of containerised cargo, dependable multimodal logistics, and time-sensitive supply chains. ASEAN member states such as Singapore, Malaysia, Thailand, Vietnam and Indonesia are well integrated into global production networks and connected through major container ports and extensive maritime networks.

Connectivity has become the central pillar of the ASEAN–India Comprehensive Strategic Partnership (CSP). In the contemporary Indo-Pacific, connectivity is no longer limited to roads and ports; it includes digital networks, energy systems, logistics chains, aviation corridors, and regulatory frameworks that facilitate trade and investment. The strategic significance of connectivity has increased as both India and ASEAN seek resilient supply chains, diversified economic partnerships, and greater strategic autonomy amid intensifying geopolitical competition.

The importance of ASEAN–India connectivity lies not merely in increasing exchanges but in reshaping economic geography by linking South Asia and Southeast Asia into an integrated Indo-Pacific growth corridor.

This chapter examines physical and digital connectivity between ASEAN and India and discusses the challenges being faced by the region. The remainder of the chapter is organised as follows. Section 13.2 examines air connectivity, while Section 13.3 analyses maritime connectivity between India and ASEAN. Digital connectivity is discussed in Section 13.4. Section 13.5 examines energy connectivity between ASEAN and India. Connectivity projects, including multimodal transport initiatives, are presented in Section 13.6. Finally, Section 13.7 concludes.

13.2. Air Connectivity

Air transport is a vital link between India and ASEAN. Air connectivity facilitates the rapid movement of tourists, business travellers, and perishable goods between countries[1]. In 2024-25, 74.1 million passengers travelled by air to and from India, up from 66.8 million in the preceding year, representing annual growth of 11 per cent[2]. In 2024-25, ASEAN accounted for one-fifth of total passenger traffic to and from India[3]. This growth has been supported by several bilateral agreements between India and ASEAN member states in recent years. Table 13.1 presents the share of ASEAN in India's total air passenger and freight traffic between 2015-16 and 2024-25.

Table 13.1: ASEAN's Share in India's Air Passengers and Freight Carried between 2015-16 and 2024-25

Year	Passenger	Freight
	(%)	
2015-16	16.20	14.10
2016-17	16.30	14.70
2017-18	17.50	13.90
2018-19	18.80	14.30
2019-20	19.70	14.20
2020-21	2.20	7.40
2021-22	2.80	9.30
2022-23	17.40	11.90
2023-24	19.00	14.00
2024-25	20.40	15.20

Source: Directorate General of Civil Aviation (DGCA), India

ASEAN's share in India's total air passenger traffic has grown from 16.2 per cent in 2015-16 to 20.4 per cent in 2024-25 (Table 13.1). The post-pandemic period saw a substantial rise in the number of Indians visiting the ASEAN member states. According to the *ASEAN Stat*, 4.3 million Indians visited ASEAN in 2023, compared to 2.4 million in 2022, representing annual growth of 79.6 per cent[4]. Except during the pandemic years, the flow of passengers and freight between India and ASEAN has grown, reflecting expanding trade in goods and services. Expanding air connectivity reflects liberalised bilateral air service agreements, expanded seat capacity entitlements, and regional frameworks such as the ASEAN-Transport Sectoral Plan 2026-2030[5]. The following discussion examines bilateral passenger and freight flows.

Table 13.2 presents the annual flow of air passengers and freight transported between India and ASEAN for 2015-16 and 2024-25. The total number of passengers increased from 8.1 million in 2015-16 to 15.9 million in 2024-25, and freight traffic increased from 198,103.6 tonnes to 269,274.7 tonnes over the same period. Passenger traffic between India and ASEAN has increased over the past 10 years but remains concentrated in four ASEAN member states, namely, Malaysia, Singapore, Thailand and Vietnam. Except for Myanmar, which saw a decline in passenger growth, the four major markets recorded passenger growth of more than 5 per cent over the period considered.

Air connectivity between India and Vietnam has witnessed substantial growth, with passenger numbers growing from 0.28 million in 2023-24 to 0.82 million in 2024-25. This can be attributed to the expansion of direct flight services from 2022 onwards by IndiGo, Viet Nam Airlines, VietJet Air, and Air India, connecting Delhi, Mumbai, Kolkata, Ahmedabad, and Kochi directly to Hanoi and Ho Chi Minh City, along with a simplified e-visa regime[6]. Similar trends can be observed for freight traffic. While Singapore has witnessed a slight decline in freight, Vietnam has recorded a sharp increase. Overall, passenger and cargo flows between India and Vietnam have witnessed double-digit growth.

Trends in total passenger traffic between India and ASEAN over the past 10 years are shown in Figure 13.1. Except for Lao PDR and the Philippines, the remaining countries have recorded positive passenger traffic trends.

Trends show that India had temporary air links with Cambodia and the Philippines in 2020-21 and with

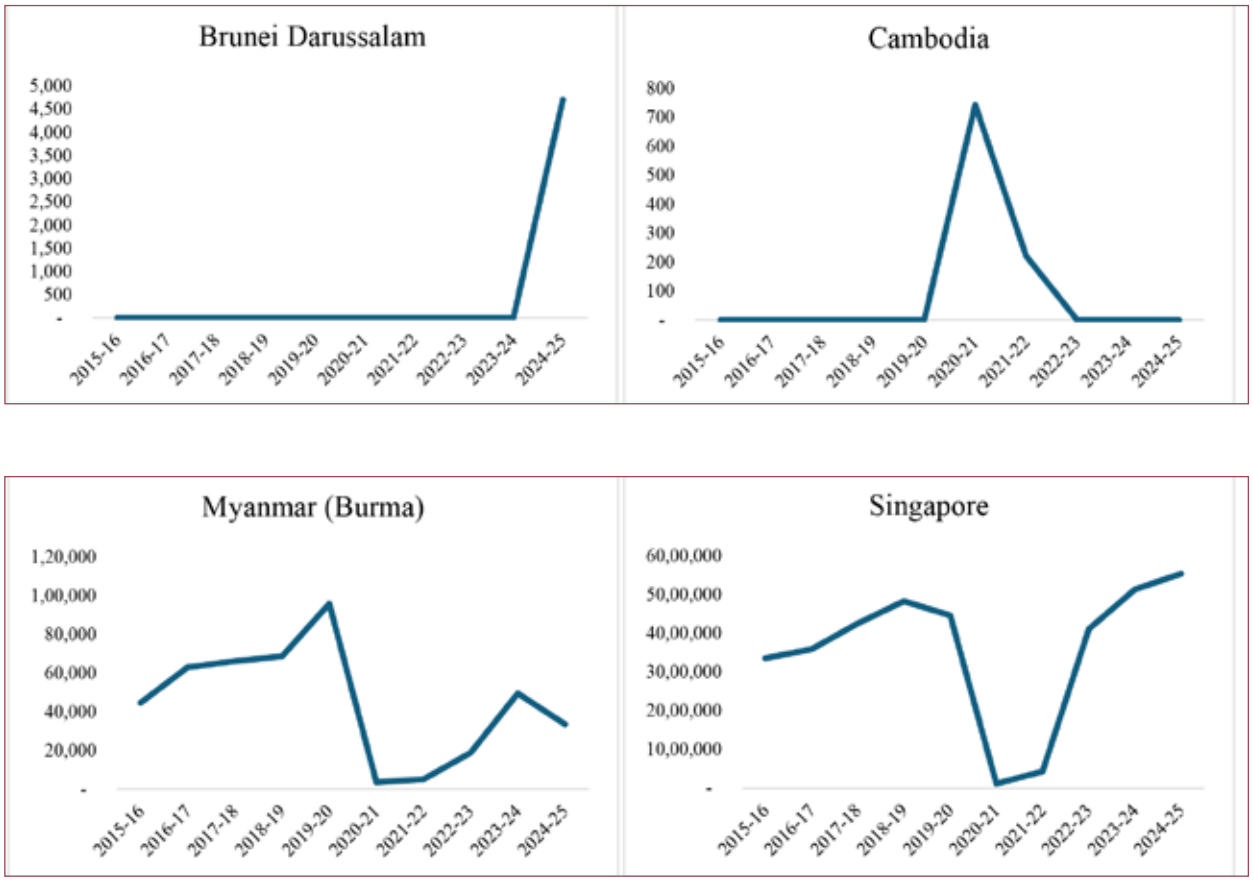
Table 13.2: Passengers and Freight Transported between India and ASEAN

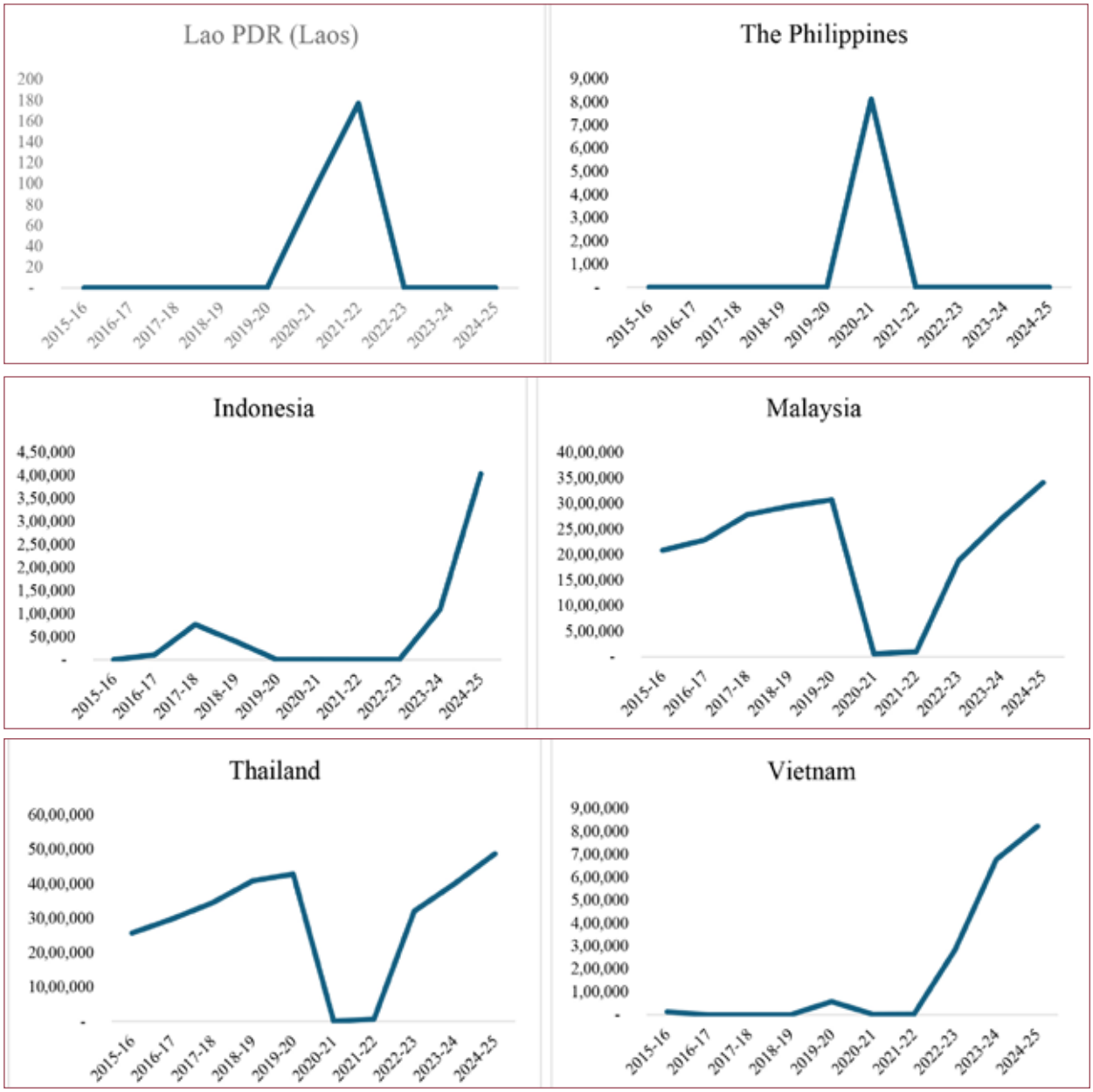
Country	Total Passengers (numbers)			Total Freight (tonnes)		
	2015-16	2024-25	CAGR (%)	2015-16	2024-25	CAGR (%)
Brunei Darussalam	-	4,707	-	-	45.5	-
Cambodia	-	-	-	-	-	-
Indonesia	-	4,03,134	-	-	588.1	-
Lao PDR	-	-	-	-	-	-
Malaysia	20,84,363	34,09,621	5.6	30,553.5	48,574.8	5.3
Myanmar	44,553	33,474	-3.1	76.7	116.4	4.7
The Philippines	-	-	-	-	-	-
Singapore	33,57,684	55,40,018	5.7	1,03,880.4	97,000.2	-0.8
Thailand	25,71,769	48,75,049	7.4	63,363.7	1,01,186.8	5.3
Timor-Leste	-	-	-	-	-	-
Viet Nam	12,849	8,21,973	58.7	229.2	21,762.9	65.9
Total	80,71,218	1,50,87,976	7.2	1,98,103.6	2,69,274.7	3.5

Note: Data represent direct movement of goods and passengers

Source: DGCA

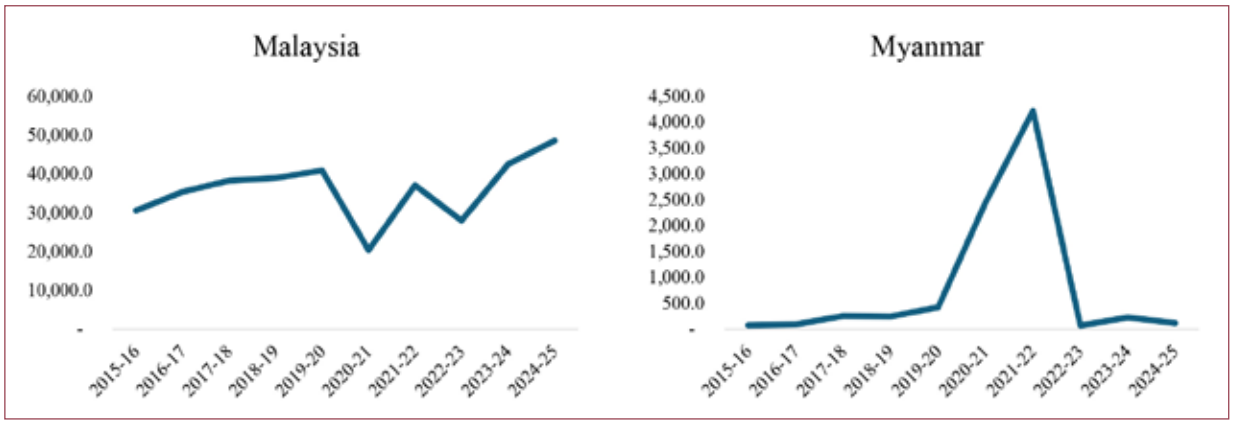
Figure 13.1: Trends in Passenger Travel between ASEAN Member States and India (2015-16 – 2024-25)

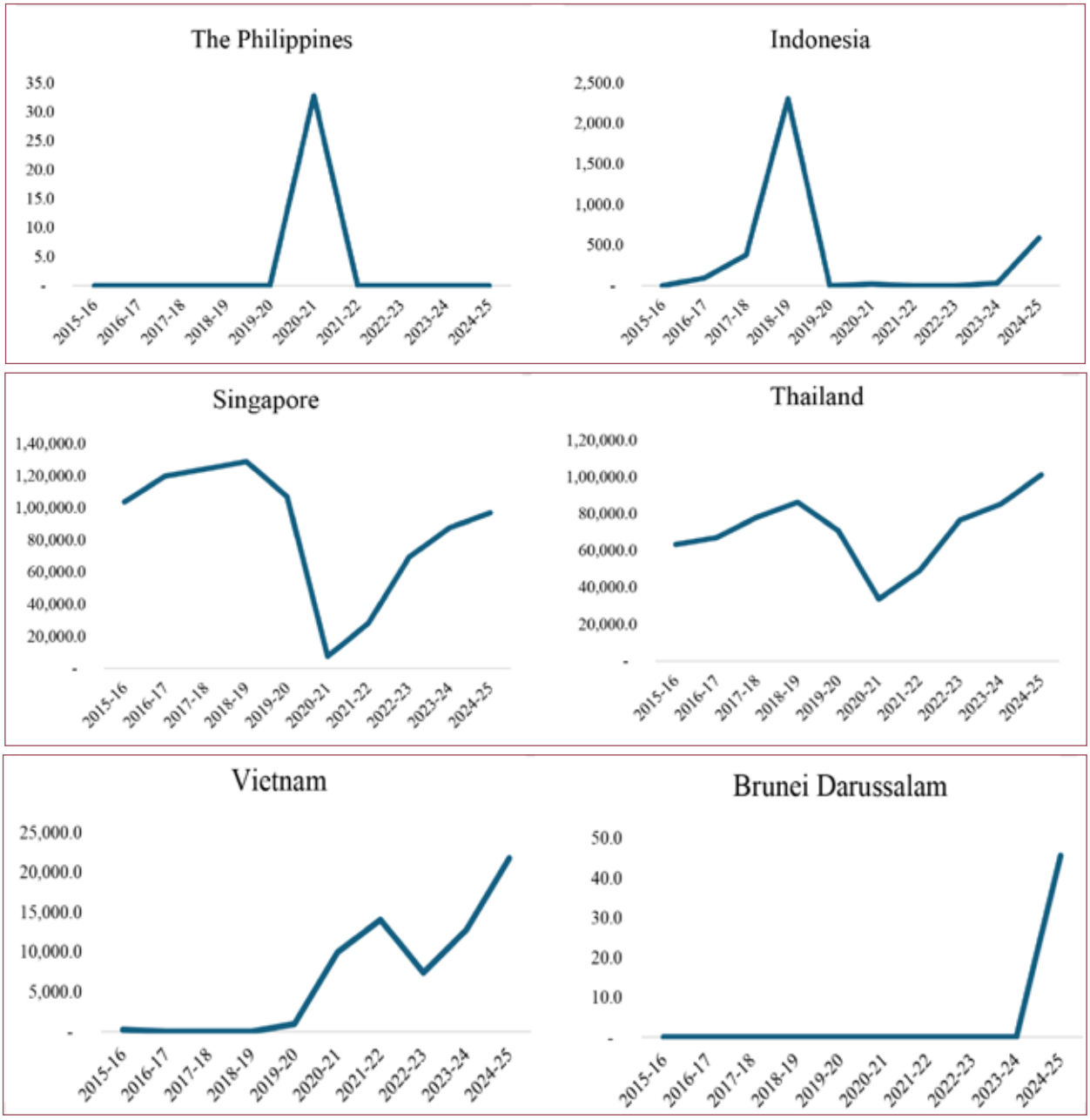




Source: DGCA

Figure 13.2: Trends in Freight Transported between ASEAN Member States and India (2015-16 – 2024-25)





Source: DGCA

Lao PDR in 2021-22 during the COVID-19 emergency. Later, Brunei Darussalam introduced direct flights to India in 2024-25.

Although air connectivity between India and ASEAN member states such as Malaysia, Singapore, and Thailand was affected during the pandemic years, air passenger traffic recovered as pandemic restrictions eased. Indonesia and India have witnessed an increase in air traffic in recent years, with Air India increasing its flight frequency from 7 to 10 services a week between Delhi and Bali to address the growing tourism demand from India to Indonesia, with India becoming the 5th largest source market for tourists[7].

Trends in total freight traffic between India and ASEAN over the past 10 years are shown in Figure 13.2. There are two important observations. First, freight traffic between Malaysia, Singapore and Thailand has remained consistent except during the pandemic years. Second, freight traffic trends are largely aligned with passenger traffic trends.

Several airlines have been strengthening air connectivity between India and ASEAN. Domestic airlines carried 37.6 per cent of the total passenger traffic in 2024-25, among which IndiGo Airlines accounted for the largest share at 55.6 per cent,

Table 13.3: Number of Airlines Carrying Passengers between India and ASEAN (2015-16 – 2024-25)

Country	2015-16	2020-21	2025-26
Brunei Darussalam			1
Cambodia		1	1
Indonesia		1	3
Lao PDR		1	
Malaysia	5	6	7
Myanmar	2	3	2
The Philippines		4	1
Singapore	8	7	7
Thailand	10	5	11
Timor-Leste			
Viet Nam	1	2	4
Total	26	30	37

Source: DGCA

Table 13.4: Number of Airlines Carrying Freight between India and ASEAN (2015-16 – 2024-25)

Country	2015-16	2020-21	2025-26
Brunei Darussalam			1
Cambodia		2	
Indonesia		2	3
Lao PDR			
Malaysia	5	7	7
Myanmar	1	4	3
The Philippines		2	
Singapore	8	9	6
Thailand	9	6	11
Timor-Leste			
Viet Nam	1	5	6
Total	24	37	37

Source: DGCA

followed by Air India (24.8 per cent), Vistara (8.6 per cent), Air India Express (7.5 per cent), and SpiceJet (3.5 per cent). However, domestic airlines carried only 9.8 per cent of the total freight in terms of volume in 2024-25, among which Air India accounted for the largest share at 43.7 per cent, followed by IndiGo (36.2 per cent), Air India Express (7.9 per cent), SpiceJet (7 per cent), and Vistara (5.2 per cent). A total of 30 foreign airlines ferried passengers, and 36 foreign airlines transported freight between India and ASEAN in the last 10 years. Singapore Airlines accounts for the largest share of both passenger and freight traffic in 2025-26. Tables 13.3 and 13.4 show the number of airlines operating passenger and freight services, respectively, between India and ASEAN from 2015-16 to 2025-26. Tables 13.5 and 13.6 present the corresponding numbers of passenger and freight flights from 2015-16 to 2025-26.

Thailand and Singapore have the highest number of airlines carrying passengers between India and ASEAN, aligning with the highest passenger traffic on these routes. Similar trends can be seen in freight traffic. The number of airlines operating freight services between India and each of Myanmar and Viet Nam exceeds the number operating passenger services.

In 2023, out of the 4.3 million Indian visitors to ASEAN, 1.6 million visited Thailand, and 1.1 million visited Singapore, accounting for around two-thirds of the total tourists from India[8]. Thailand, Singapore and Malaysia have the largest number of flights operating between India and ASEAN, together accounting for 85 per cent of flights, making them the busiest routes in the region.

India presently has 131 airports, of which 16 are major, and 115 are non-major airports[9]. Of its 29 international airports, 16 are connected to Southeast Asia. India's Northeast still lacks adequate air links with neighbouring South and Southeast Asia. Past efforts under the UDAN scheme sought to connect India's Northeast with Southeast Asia, but progress has remained limited.

Table 13.5: Total Number of Flight Movements Carrying Passengers between India and ASEAN (2015-16 – 2024-25)

Country	2015-16	2020-21	2025-26
Brunei			1
Cambodia		1	1
Indonesia		2	4
Lao PDR		1	
Malaysia	22	27	40
Myanmar	4	7	6
The Philippines		24	1
Singapore	31	33	38
Thailand	22	10	62
Timor-Leste			
Viet Nam	2	7	10
Total	81	112	163

Source: DGCA

Table 13.6: Total Number of Flights Carrying Freight between India and ASEAN (2015-16 – 2024-25)

Country	2015-16	2020-21	2025-26
Brunei			1
Cambodia		3	1
Indonesia		3	4
Lao PDR			
Malaysia	18	21	30
Myanmar	3	11	4
Philippines		3	
Singapore	29	36	35
Thailand	19	18	54
Timor-Leste			
Viet Nam	2	17	12
Total	71	112	141

Source: DGCA

Given the importance of GVCs and regional production networks, demand for air cargo services between India and ASEAN is growing. Faster movement of raw materials, components, parts, and spares helps firms maintain lower inventories and improve production efficiency. The percentage change in the Air Shipping Ratio (ASR) (i.e., the products that can be transported by air) between 2000 and 2004 for India's exports to ASEAN is higher for countries such as Vietnam, Brunei, Myanmar, Cambodia and the Philippines, relative to other major trading countries such as Singapore, Malaysia, Indonesia and Thailand, and similar trends can be seen in India's imports from ASEAN. In 2023-24, Singapore (50 per cent) and Thailand (40 per cent) together accounted for 90 per cent of total cargo carried to ASEAN countries, followed by Malaysia (9 per cent). Most of India's global trade routed by air is carried by Singapore Air, Malaysian Air and Thai Air, along with DHL, UPS and FedEx. The potential for air cargo growth in India can be gauged from the fact that major global airports such as Hong Kong, Dubai and Incheon handle more cargo volume than all Indian airports put together. These trends underscore the need to liberalise air connectivity between ASEAN and India, particularly air cargo services, to remove bottlenecks and unlock the region's long-term growth potential.

Of the 10 ASEAN countries discussed here, nine member states — Brunei, Cambodia, Malaysia, Myanmar, Singapore, Thailand, Vietnam, the Philippines and Indonesia — have direct flights to and from India. The remaining Lao PDR lacks direct flights but has connections through other ASEAN airports. In 2023-24, passenger traffic between ASEAN and India increased by almost 52 per cent compared to 2020-21, mostly from Singapore, Thailand and Malaysia[10]. To date, a total of 12 airlines from ASEAN and India have been operating services between the two regions. While some of the capital-to-capital flights have been reintroduced post-pandemic, cities known as popular holiday and business destinations are also gaining connections. However, tourism destinations such as Angkor Wat (Siem Reap airport), Varanasi (Varanasi airport), Andaman (Port Blair

airport), etc., are yet to be connected by airlines from ASEAN and India.

Overall, more passengers travel from India to ASEAN than in the opposite direction. Nevertheless, passenger traffic from ASEAN to India is rising, suggesting potential for further growth.

Air services between India and ASEAN primarily serve metropolitan cities such as Chennai, Delhi, Mumbai, Kolkata, Bangalore, and Hyderabad, and Tier I cities such as Ahmedabad, Gaya, Thiruvananthapuram, Bhubaneswar, Cochin, etc. In the post-pandemic period, airlines from ASEAN countries such as Singapore, Thailand, and Malaysia have relaunched air services in Tier II Indian cities.

In view of the rising demand for travel between India and Southeast Asia in the post-pandemic period, new flights are being added by Indian and ASEAN airlines. While established airlines have been increasing frequencies between metro cities, several new airlines have announced new flights. For example, Indonesia's Batik Air started new direct services between North Sumatra (Kualanamu) and Chennai in August 2023. Vietnam's VietJet has already started flights from Hanoi and HCM City to Delhi, Mumbai and Ahmedabad. VietJet has also announced new routes between Hanoi and Ahmedabad. India's IndiGo has already introduced direct flights from India to several ASEAN countries. Recently, it has started four flights between India and Southeast Asia, including two new routes between Bhubaneswar and Singapore and Bhubaneswar and Bangkok, adding a second frequency on the Bangkok-Kolkata route in June 2023. IndiGo also introduced direct flights between Mumbai and Jakarta in 2024. IndiGo currently connects Delhi, Mumbai, Bengaluru and Kolkata to Bangkok and Tiruchirappalli, Bengaluru, Chennai, Kolkata to Singapore. With these new additions, the airline will directly connect 6 cities to Singapore and 5 cities to Bangkok, catering to the increased demand for international travel. These expanded services have improved air connectivity and accessibility between India and Southeast Asia. Still, much of the potential for air connectivity remains unrealised. Three major factors have prevented countries from realising this potential: first, ASEAN is yet to become a single aviation market; second, the Indian aviation market is mostly driven by private players and market conditions, whereas airlines from Southeast Asia are still operating as public sector units; and third, ASEAN and India have failed to conclude a regional air services agreement even though India has bilateral ASAs with all 10 ASEAN member states.

The air liberalisation indices (ALI) for ASEAN and India Bilateral Air Service Agreements show that all ASEAN countries except Cambodia, Lao PDR and Thailand grant India first- to fifth-freedom rights on a reciprocal basis, whereas Cambodia grants first- to fourth-freedom rights while negotiations are still ongoing with Thailand and Lao PDR[11]. ALI scores also suggest that ASEAN-India Bilateral ASAs are restrictive for all the ASEAN countries. For instance, Thailand has the highest ALI score, at 16 out of 50, well below the fully open benchmark of 50. This may be due to limited air connectivity between India and ASEAN countries. Offering fifth freedom rights on a reciprocal basis could help both sides expand trade, tourism, and GVCs.

13.2.1 Addressing Air Connectivity Challenges

The year 2025 was designated ASEAN-India Tourism Year. Capacity is being expanded to accommodate more tourists between India and ASEAN. There is considerable interest among ASEAN passengers in the Northeast region and Tier II or Tier III cities with significant Buddhist heritage in India. This is particularly important as India has offered visas on arrival to all the ASEAN countries. A majority of the ASEAN countries, on the other hand, also provide visas on arrival to Indians.

While ASEAN is yet to become a single aviation market, India offers single aviation market benefits to all its trade partners, including ASEAN. Given this asymmetry, pursuing an 'open skies' approach to passenger services between ASEAN and India may

encourage more country-specific barriers. Under the ASEAN-India Trade in Services Agreement, India and ASEAN have agreed to apply the GATS Annex on Air Transport Services, mutatis mutandis. India and ASEAN should make greater use of this agreement to improve bilateral trade in services.

As a way forward, a comprehensive ASEAN-India Air Transport Agreement (AIATA) is required to expand tourism and trade between the two. Negotiations on this agreement have continued for over a decade. India and ASEAN can strengthen cooperation in building new airports, aviation technology, safety and security, warehouse management, sharing of cargo resources, and logistics know-how. These areas offer opportunities for mutual benefit. Greater cooperation between cargo and airline industry associations in ASEAN and India would strengthen institutional links. Indian airline associations or air cargo associations may consider signing cooperation agreements with their counterparts in ASEAN countries. A stronger aviation relationship between India and ASEAN may help strengthen supply chain resilience and the air connectivity pillar of the ASEAN-India POA (2026-2030). The aviation sector will continue to be critical to the ASEAN-India CSP.

13.3. Maritime Connectivity

Maritime connectivity has been at the forefront of India-ASEAN cooperation. With 80 per cent of trade by volume moving by sea, maritime connectivity has become a critical enabler of ASEAN-India regional trade and integration[12].

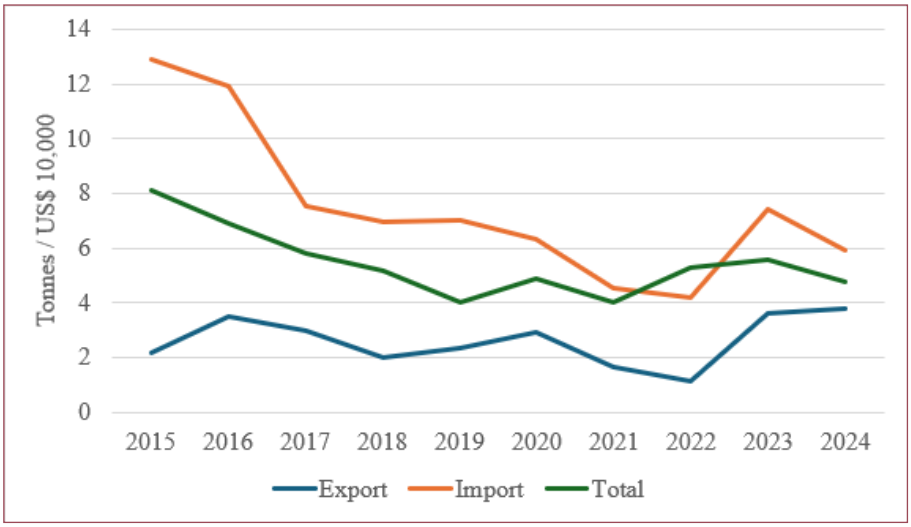
Trade between ASEAN and India is changing as product mixes and unit prices evolve across trading partners. A rising ratio indicates the need for enhanced connectivity between the trading partners. Table 13.7 presents trends in India's exports to and imports from ASEAN in volume (million tonnes) and value (US$ billion). Figure 13.3 shows trends in the trade value-to-volume ratio of India's trade with ASEAN. The ratio of trade value to trade volume indicates changes in average unit values, particularly from 2020 onwards.

Table 13.7: Export and Import of Goods between India and ASEAN (2015-16 – 2024-25)

Year	Exports		Imports		Total	
	(million tonnes)	(US$ billion)	(million tonnes)	(US$ billion)	(million tonnes)	(US$ billion)
2015-16	5.70	26.49	53.70	68.02	55.20	68.02
2016-17	9.40	26.65	45.80	64.99	44.80	64.99
2017-18	10.60	35.45	34.20	80.75	47.00	80.75
2018-19	7.30	36.08	39.70	93.31	48.10	93.31
2019-20	8.00	34.30	40.10	91.35	36.60	91.35
2020-21	8.70	29.58	27.90	73.61	36.10	73.61
2021-22	6.80	40.67	29.30	105.50	42.50	105.50
2022-23	5.10	44.14	37.40	133.25	70.80	133.25
2023-24	14.50	39.93	56.30	115.96	64.90	115.96
2024-25	16.30	43.13	48.50	125.01	59.40	125.01

Sources: Trade in US$ is taken from TradeStat, Department of Commerce; and Trade in tonnes is taken from the Basic Ports Statistics of India, Ministry of Ports, Shipping & Waterways (MoPSW)

Figure 13.3: Trends in Trade Value –Volume Ratio of India's Trade with ASEAN



Source: Authors' calculations based on the sources listed in Table 13.7.

The trend also indicates that changes in trade value were driven by a contraction in physical quantities between 2000 and 2022. However, the trend was reversed from 2022 onward in the case of India's exports to ASEAN. On the other hand, India's imports from ASEAN, although higher in value-to-volume ratio than exports, show a decrease in 2024. India's imports from ASEAN also contracted in volume from 2023-24 to 2024-25 (Table 13.7). Nevertheless, post-pandemic trends suggest a shift towards higher-priced goods in India's exports to and imports from ASEAN. The ASEAN-India strategy for maritime connectivity and trade facilitation needs to adapt to this transformation. India has a trade deficit with ASEAN both in terms of trade value and trade volume.

In 2024-25, India handled a total of 657.7 million tonnes of overseas (international) cargo at its major ports, of which ASEAN accounted for 59.40 million tonnes or almost 10 per cent of India's total maritime cargo. Table 13.7 presents the total cargo exported to and imported from ASEAN member states between 2015-16 and 2024-25. Exports to ASEAN grew at a rate of 12.4 per cent during the period, with petroleum products emerging as the main export commodity. Imports, though higher than exports in terms of volume, saw a slight decline of 1.1 per cent between 2025-16 and 2024-25. Thermal coal and edible oil are the two major commodities India has been importing from ASEAN over the past 10 years.

Table 13.8 presents India's imports from ASEAN member states, whereas Figure 13.4 maps the imports of principal commodities through major ports in 2024-25[13]. Table 13.8 indicates that Brunei, Indonesia, Malaysia, Singapore, Thailand, and Viet Nam are India's main import sources. Brunei exports crude oil to India, which has seen a declining trend over the years from 1.2 million tonnes in 2025-16 to 0.80 million tonnes in 2024-25, with a negative CAGR of 4.6 per cent. Indonesia is India's largest import source in ASEAN, accounting for more than 3/5th of the total goods imported from the region over the 10 years. Malaysia and Singapore are the next two major import sources. Crude oil and edible oil are the main imports from Malaysia. Singapore, on the other hand, exports a large variety of commodities to India, including crude oil and petroleum products. Imports from Thailand mainly include edible oil, and Vietnam exports mainly iron and steel to India.

According to the MoPSW (2025), V.O. Chidambaram Port received the largest share (19.9 per cent) of the cargo from ASEAN, with the largest shipment unloaded being 7.6 million tonnes of coal (other than coking and thermal) from Indonesia. Deendayal

Table 13.8: India's Imports from ASEAN: 2015-16 to 2024-25

('000 tonnes)

Year	Brunei Darussalam	Indonesia	Malaysia	Myanmar	The Philippines	Singapore	Thailand	Viet Nam
2015-16	1211	37298	4680	0	0	10418	45	34
2016-17	1334	32986	6177	0	70	5016	114	70
2017-18	811	24302	5099	0	0	3604	165	182
2018-19	898	30091	6444	0	55	1868	249	125
2019-20	652	29436	6343	0	0	3558	93	38
2020-21	569	19720	4904	0	0	2486	183	15
2021-22	539	23419	3875	0	0	996	453	45
2022-23	156	31308	3527	0	0	1671	520	233
2023-24	471	35363	10488	45	0	6494	1903	1521
2024-25	796	29764	6330	640	237	7523	2193	1040

*India had no direct maritime imports from Cambodia, Lao PDR and Timor-Leste

Source: MoPSW (2026)

Port, Kamarajar Port and Visakhapatnam Port are the next major ports, together accounting for a 40.3 per cent share. India imported 25.6 million tonnes of coal (all types of coal) from ASEAN, with Indonesia exporting 97 per cent of it. Edible oil is the next largest commodity India imported from ASEAN, amounting to 5.5 million tonnes, with Indonesia's share standing at 50 per cent and Malaysia's at 35.9 per cent.

Table 13.9 presents India's exports to ASEAN member states, whereas Figure 13.5 maps the principal commodities exported through India's major ports to ASEAN member states in 2024-25[14]. Indonesia, Malaysia, Myanmar, Singapore, Thailand and Viet Nam are India's main export destinations in ASEAN. Malaysia and Singapore account for more than 3/4th of total shipments from India to ASEAN. Indonesia

Table 13.9: India's Total Exports to ASEAN: 2015-16 to 2024-25

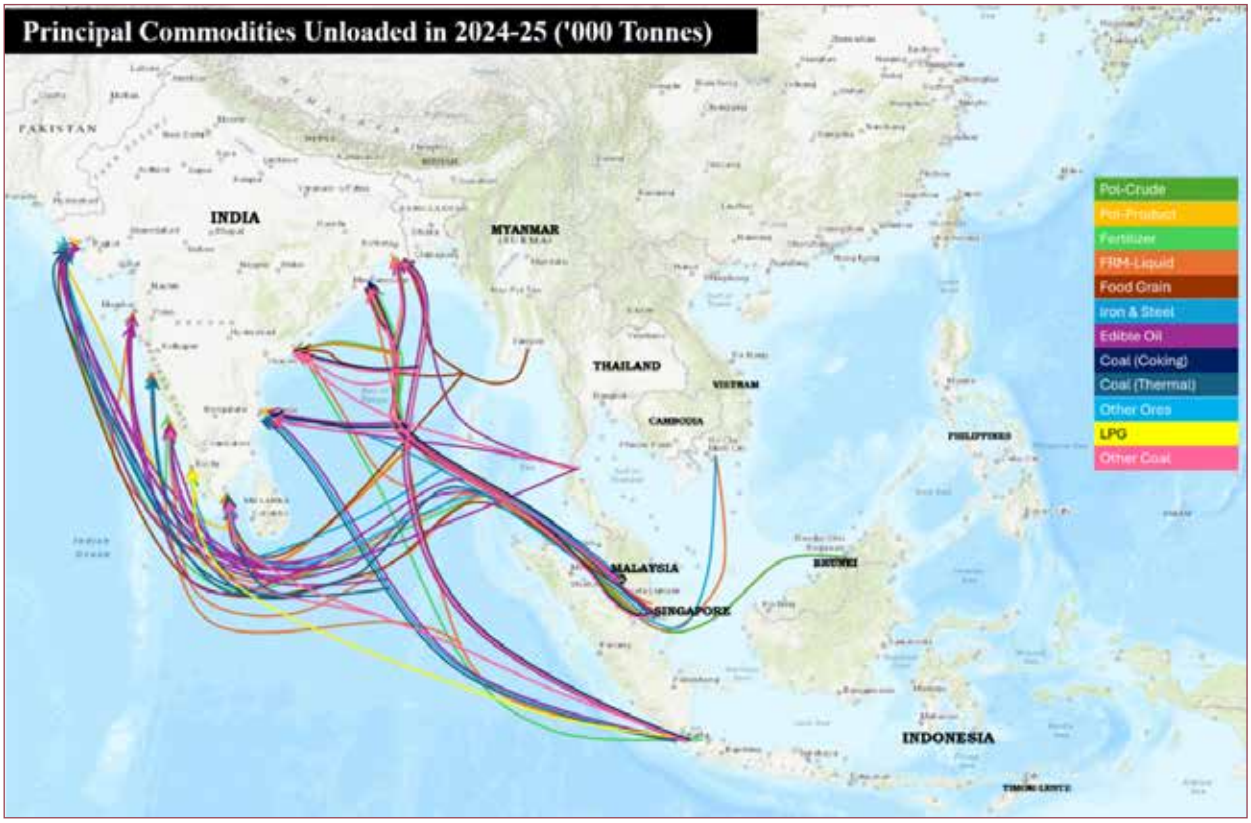
('000 tonnes)

Year	Indonesia	Malaysia	Myanmar	The Philippines	Singapore	Thailand	Viet Nam
2015-16	250	477	20	1	4848	53	68
2016-17	143	1364	31	1	6900	447	551
2017-18	218	2503	86	212	6680	281	624
2018-19	336	2188	17	88	3972	163	525
2019-20	195	2009	7	34	3974	870	933
2020-21	857	991	85	154	4770	638	1191
2021-22	549	1730	38	113	2498	359	1487
2022-23	958	971	0	0	2078	47	1067
2023-24	1379	4869	144	0	5549	794	1798
2024-25	2503	7238	12	0	5387	683	506

*India had no direct maritime imports from Cambodia, Lao PDR and Timor-Leste

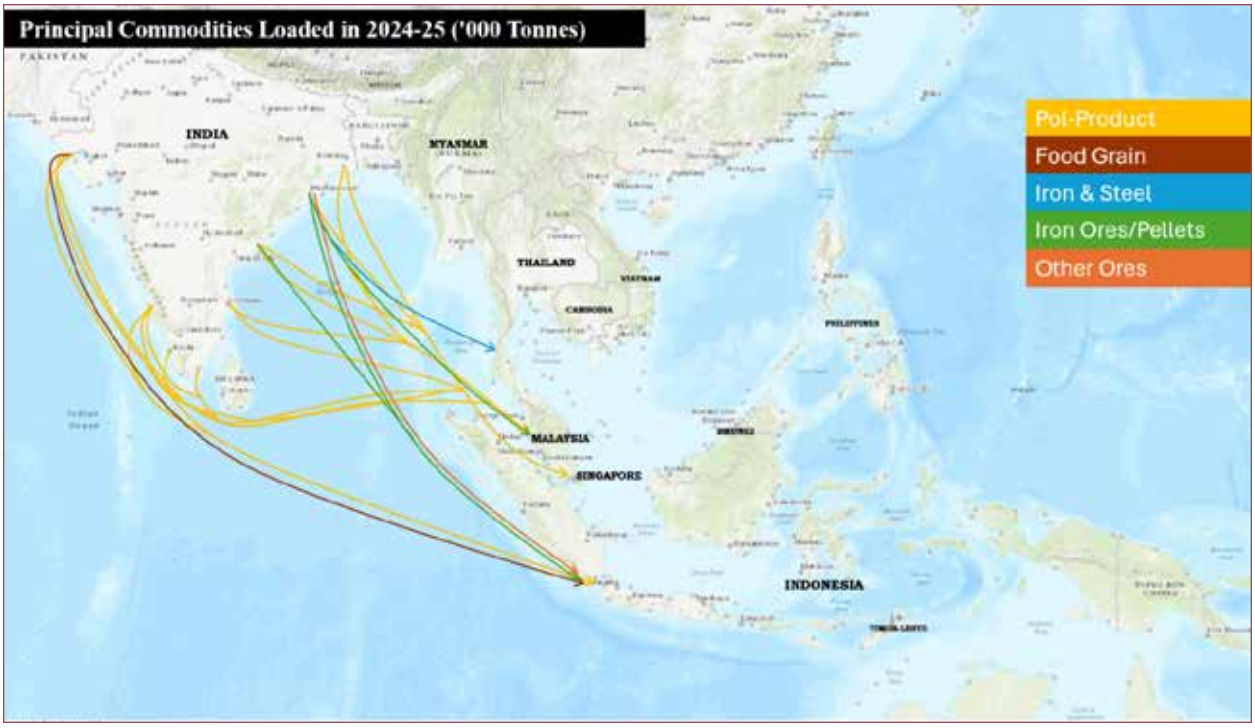
Source: MoPSW (2026)

Figure 13.4: India's Port-wise Imports of Principal Commodities from ASEAN in 2024-25



Source: Authors' illustration based on MoPSW (2026)

Figure 13.5: India's Port-wise Principal Commodity Exports to ASEAN in 2024-25



Source: MoPSW (2026)

Table 13.10: India's Containerised Trade with ASEAN

Country	2024-25		2023-24	
	Export	Import	Export	Import
	(TEUs)			
Indonesia	46,389	1,10,056	35,278	7,12,611
Malaysia	2,74,889	1,91,611	1,79,500	3,14,778
Myanmar	667	7,833	8,000	2,500
The Philippines		13,167		
Singapore	1,55,944	3,29,667	1,48,222	2,88,778
Thailand	34,833	86,889	40,222	77,833
Vietnam	28,111	40,944	66,778	36,056

*Calculated data based on MoPSW (2026)

Source: Authors' calculations

is India's third-largest export destination. Three-quarters of India's merchandise exports to ASEAN go through Visakhapatnam Port, Jawaharlal Nehru Port, and Deendayal Port. Petroleum products are India's main export commodity shipped to ASEAN. The discussion now turns to containerised trade. Table 13.10 presents India's containerised trade with ASEAN for the years 2023-24 and 2024-25[15].

Singapore accounts for the largest share of India's containerised cargo imports from ASEAN; however, most of this is transit cargo. In 2024-25, India imported 329,667 TEUs from Singapore. Indonesia and Malaysia are two major import sources. India's containerised exports are primarily directed to Malaysia, followed by Singapore and Indonesia. Malaysia received the largest number of containers from India in ASEAN in both 2023-24 and 2024-25.

13.3.1 Global Maritime Competitiveness

With around 80 per cent of trade by volume moving by sea, maritime connectivity is pivotal to economic development and integration. Globalisation could not occur without robust maritime transport systems, and containerisation shapes the effectiveness of this infrastructure (Broeze, 2017). Containerisation has not only increased global trade but also reduced variable shipping costs by 16 per cent and 22 per cent (Coşar and Demir, 2018). Therefore, container throughput provides insight into the capacity of port infrastructure and a country's or region's integration into global maritime trade. Table 13.11 provides the container throughput of India and ASEAN member states and the growth between 2015 and 2024. Higher container throughput strengthens a country's position in global maritime trade.

Singapore handles the highest number of containers in the region, followed by Malaysia and Vietnam. In ASEAN, Cambodia and Vietnam witnessed substantial improvements in containerised trade between 2015 and 2024, growing at a CAGR of 11.3 per cent and 9.7 per cent, respectively. India also recorded strong growth, with a CAGR of 7.6 per cent during 2015-2024. In 2024, Vietnam overtook India in container port cargo and ranked third in ASEAN (Table 13.11).

Table 13.12 presents the port-level container cargo handled in India and ASEAN. Cargo volumes indicate a port's role in facilitating global trade through loading, unloading, and transhipment. The Port of Singapore, Port Klang, and Tanjung Pelepas are the top three ports in the India-ASEAN region. These ports handle

Table 13.11: Container Port Cargo of India and ASEAN Member States: 2015-2024

Country	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR (2015 - 2024)
	(Million TEUs)										(%)
Brunei Darussalam	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	-0.5
Cambodia	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	1.0	11.3
India	12.3	13.7	15.5	17.0	17.5	17.6	19.6	19.7	22.2	23.9	7.6
Indonesia	10.1	10.6	11.3	12.6	12.7	11.8	12.9	13.3	13.7	14.7	4.3
Malaysia	24.0	24.6	23.7	25.0	26.2	26.7	28.3	27.3	28.2	30.7	2.8
Myanmar	0.8	1.0	1.0	1.1	1.1	1.1	0.7	0.8	0.8	0.8	-0.6
The Philippines	7.2	7.6	8.2	8.9	9.3	8.0	8.7	9.3	8.8	9.2	2.8
Singapore	30.9	30.9	33.7	36.6	37.2	36.9	37.6	37.3	39.0	41.1	3.2
Thailand	8.9	9.3	9.9	10.4	10.1	9.6	10.4	10.5	10.3	11.4	2.8
Vietnam	10.6	11.3	12.4	13.4	15.3	16.4	19.8	20.5	21.1	24.4	9.7

Source: UNCTAD

Table 13.12: Cargo Handled and Container Cargo of Selected Indian and ASEAN Ports for 2015 and 2024

Major Ports	Country	Total Cargo Handled (million tonnes)			Containerised Cargo (million TEUs)		
		2015	2024	CAGR (%)	2015	2024	CAGR (%)
Singapore	Singapore	575.85	622.91	0.9	30.92	41.12	3.2
Port Klang	Malaysia	219.79	248.57	1.4	11.89	14.64	2.3
Tanjung Pelepas	Malaysia	136.28	181.12	3.2	8.80	12.25	3.7
Laem Chabang	Thailand	72.61	98.66	3.5	6.71	9.39	3.8
Ho Chi Minh City	Veit Nam	89.85	143.74	5.4	5.88	9.16	5
Mundra (GAPL)*#	India	103.47	199.54	7.6	2.31	6.97	13
Tanjung Priok	Indonesia	19.72	62.55	13.7			
Hai Phong	Viet Nam	23.75	19.10	-2.4	1.02	1.27	2.5
Cai Mep	Viet Nam	39.11	128.90	14.2	1.81	7.08	16.4
Jawaharlal Nehru Port (Nhava Sheva)*	India	64.03	92.12	4.1	4.49	7.30	5.5
Manila	Philippines	21.57	28.29	3.10			
Tanjung Perak (Surabaya)	Indonesia	8.24	30.73	15.80			

*Financial Year Basis, #Gujarat Adani Ports Ltd.

Source: Authors' compilation from data provided by respective port authorities

Table 13.13: India's Liner Shipping Bilateral Connectivity Index with ASEAN Member States (Q12015–Q12025)

Country	Q1 2015	Q1 2016	Q1 2017	Q1 2018	Q1 2019	Q1 2020	Q1 2021	Q1 2022	Q1 2023	Q1 2024	Q1 2025
Brunei Darussalam	0.199	0.202	0.205	0.193	0.207	0.211	0.201	0.207	0.214	0.219	0.205
Cambodia	0.219	0.233	0.232	0.220	0.224	0.225	0.229	0.224	0.229	0.240	0.246
Indonesia	0.341	0.333	0.334	0.388	0.382	0.400	0.321	0.316	0.496	0.426	0.441
Malaysia	0.579	0.595	0.593	0.589	0.574	0.574	0.585	0.589	0.600	0.623	0.702
Myanmar	0.292	0.309	0.307	0.243	0.217	0.235	0.233	0.220	0.235	0.244	0.303
The Philippines	0.281	0.369	0.373	0.385	0.385	0.357	0.273	0.279	0.383	0.397	0.405
Singapore	0.576	0.599	0.598	0.597	0.588	0.584	0.598	0.603	0.612	0.635	0.725
Thailand	0.477	0.502	0.494	0.478	0.497	0.491	0.499	0.501	0.505	0.543	0.561
Timor-Leste	0.192	0.168	0.168	0.167	0.167	0.165	0.170	0.167	0.170	0.178	0.180
Vietnam	0.414	0.451	0.518	0.517	0.502	0.488	0.499	0.510	0.526	0.559	0.658

Source: UNCTAD

valuable cargo along one of the most important sea lines of communication (SLOC), the Strait of Malacca. The strait is an important gateway for East Asian countries to connect with India and West Asia.

ASEAN countries clearly have an edge over India in terms of volume of cargo handled. Singapore ranks second in Lloyd's list of One Hundred Ports of 2025, maintaining its position as a prominent transhipment hub in global trade[16], and it has remained the largest port in the India-ASEAN region over the past 10 years. Indonesian ports have witnessed double-digit growth in cargo handling between 2015 and 2024, along with Viet Nam's Cai Mep.

India's Mundra port reported growth of 13 per cent in container throughput measured in TEUs. According to NITI Aayog (2025), Mundra has surpassed major ports in India in capacity utilisation. It also reported that both JNPA and Mundra have been building port capacities in line with their operational needs.

The Liner Shipping Bilateral Connectivity Index (LSBCI) measures a country pair's integration into global liner shipping networks[17]. A higher score indicates greater integration between countries. The index scores are used to understand the role of maritime connectivity in reducing transportation costs (Guerrero et al., 2021). Table 13.13 presents the LSBCI score between India and the respective ASEAN member states for the period Q1 2015 to Q1 2025.

Table 13.14: Turnaround Time at Ports in India and ASEAN for 2023 and 2024

Country	Turnaround time at ports (hrs.)	
	2023	2025
Brunei Darussalam		16.8
Cambodia	21.6	24.0
India	26.4	28.8
Indonesia	43.2	36.0
Malaysia	28.8	26.4
Myanmar	48.0	67.2
Philippines	31.2	28.8
Singapore	28.8	33.6
Thailand	24.0	31.2
Timor-Leste		
Vietnam	21.6	21.6

Source: World Bank

India's bilateral links with Malaysia and Singapore recorded the highest LSBCI scores in Q1 2021, while its links with the Philippines and Vietnam improved substantially between 2015 and 2025.

Average turnaround time at ports is the most important parameter for understanding the efficiency of port terminal operations. More time spent at a port leads to higher cargo-handling costs, thus reducing competitiveness. Table 13.14 presents the average turnaround time of India and ASEAN member states.

Among large, busy ports, Vietnam has the shortest turnaround time among India-ASEAN ports in 2025. The Philippines and Indonesia have recorded substantial reductions in turnaround time from 31.2 and 43.2 hours in 2023 to 28.8 and 36 hours in 2025, respectively. Thailand has recorded an increase in turnaround time from 24 hours to 31.2 hours. In the case of Myanmar, turnaround time has increased from 48 hours to 67.2 hours.

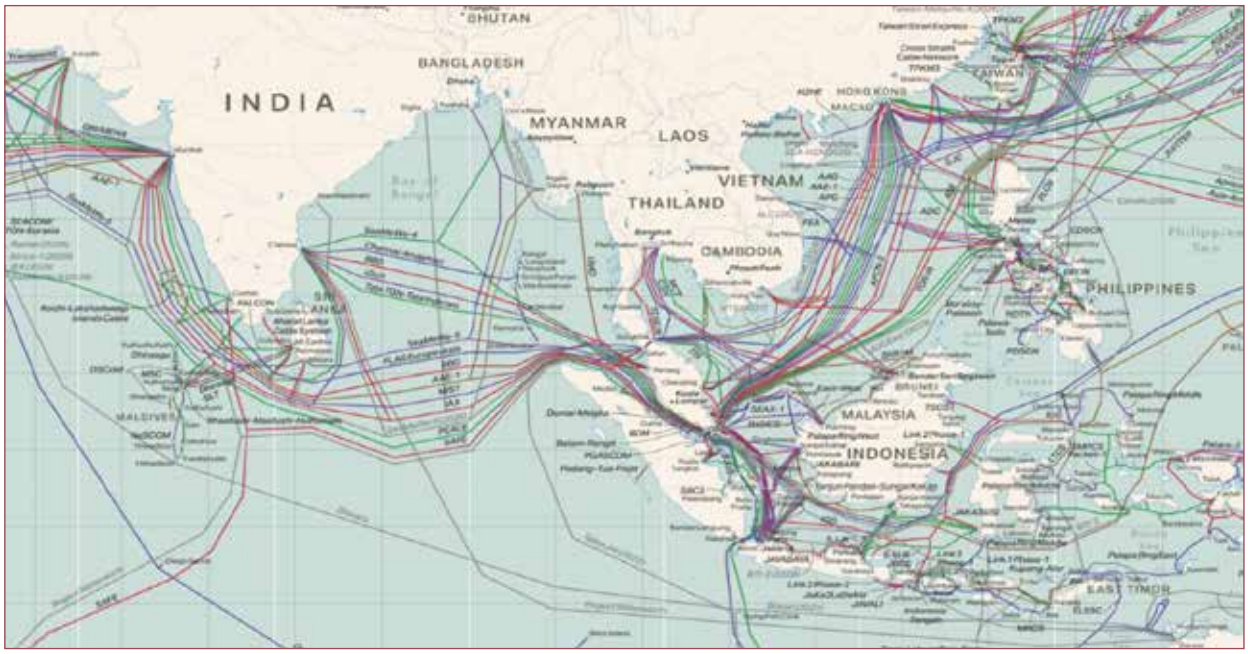
Maritime connectivity between India and ASEAN has improved, as reflected in bilateral liner shipping connectivity and container throughput. However, increasingly busy ports in several ASEAN member states require further improvements in infrastructure and connectivity.

ASEAN-India connectivity cooperation has expanded beyond air and maritime links in the post-COVID-19 period. Digital trade facilitation, undersea cables, and digital payment infrastructure have emerged as newer areas of regional integration. Data protection and seamless digital payments are among the areas requiring substantial progress in digital integration.

13.4. Digital Connectivity

The global submarine cable network is projected to expand significantly as rising internet use, data flows, and media activity increase demand for transmission capacity. Submarine cables are fibre-optic cables installed under the sea to transmit international telecommunication data. Submarine cable systems are installed to improve connectivity and resilience between locations. Major submarine cable routes span the Trans-Atlantic, Trans-Pacific, Americas, Intra-Asia, and EMEA-Asia regions[18].

Figure 13.6: Undersea Submarine Cables between India and ASEAN



Source: TeleGeography

Table 13.15: Major Submarine Cables Connecting India and ASEAN

Cable System	Connected ASEAN Countries	Landing Station in India	Significance
i2i cable network	Singapore	Chennai	Carries India–Singapore internet traffic
Bay of Bengal Gateway (BBG)	Singapore and Malaysia, among other countries	Chennai and Mumbai	Connects South Asia with Southeast Asia and the Middle East
MIST (Myanmar/ Malaysia-India-Singapore Transit)	Myanmar, Malaysia, Singapore	Chennai, Mumbai	Enhances regional digital connectivity through integrated subsea telecommunications
India Asia Xpress (IAX)	Singapore, Thailand, Malaysia	Mumbai, Chennai	High-capacity high-speed internet
SEA-ME-WE 4 & 6	Singapore, Malaysia, Thailand	Mumbai	Telecommunications connecting Southeast Asia, the Middle East and Western Europe
AAE-1 (Asia-Africa-Europe-1)	Malaysia, Myanmar, Singapore	Mumbai	First high-capacity intercontinental submarine cable to connect major Southeast Asian nations

Source: Submarine networks, NEC Corporation

The Asia-Pacific region dominates the global submarine cable market. As Figure 13.6 illustrates, India has emerged as an important node in undersea cable networks, supported by its economic size and growth. India's location at the intersection of Africa, Asia, and Europe has supported the expansion of its undersea cable network.

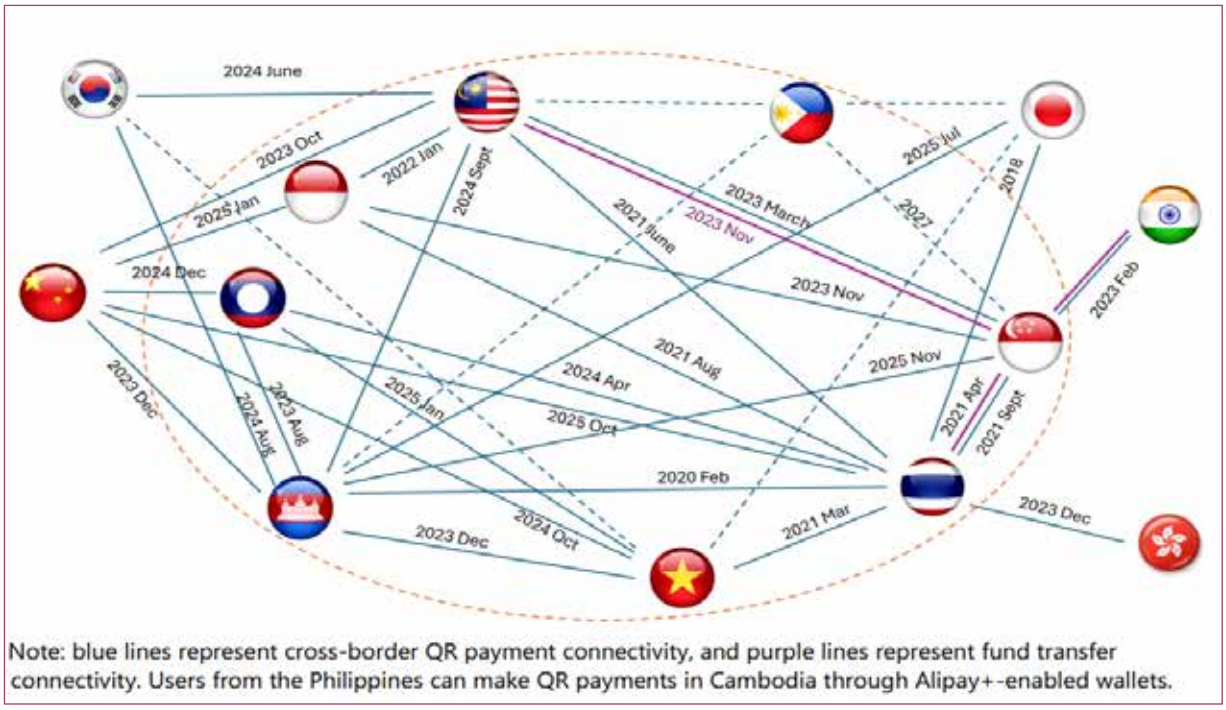
Table 13.15 presents major submarine cables between India and ASEAN. India's submarine cable connectivity with ASEAN member states has emerged as a major pillar of digital connectivity, complementing land, air and maritime transport links[19]. A large share of international internet traffic and cross-border data flows are transmitted through submarine fibre-optic cables. These submarine fibre-optic cables have become indispensable for digital trade, digital financial transactions, advances in artificial intelligence and strategic communications. India is connected with ASEAN member states primarily through cable landing stations at Chennai, Mumbai, Kochi, Trivandrum and Tuticorin, linking Singapore, Malaysia, Myanmar, Thailand and other Southeast Asian countries.

13.4.1. Digital Payment Infrastructure

Digital payment infrastructure (DPI) has been one of the fastest-evolving areas of economic cooperation between India and ASEAN. It supports financial inclusion, trade, tourism, regional economic cooperation, and remittances. Real-time payment platforms and QR-code-based transactions are changing how individuals and businesses make cross-border payments.

ASEAN has undertaken a series of initiatives to enhance cross-border payments (Figure 13.7). ASEAN, as a regional bloc, has introduced strategic initiatives such as ASEAN Regional Connectivity (RPC) and the ASEAN Local Currency Transaction Framework (LCTF). The RPC facilitates the smooth functioning of national payment systems by efficiently linking

Figure 13.7: ASEAN Cross-Border Payment Linkage Network



Note: blue lines represent cross-border QR payment connectivity, and purple lines represent fund transfer connectivity. Users from the Philippines can make QR payments in Cambodia through Alipay+-enabled wallets.

Source: IMF (2026)

them with a user-friendly cross-border payment network. The LCTF, meanwhile, promotes the use of local currencies in cross-border transactions. This complements the RPC's goals of reducing costs and increasing transaction speed. ASEAN is also implementing 'Project Nexus'. Led by the Bank for International Settlements (BIS), this multilateral initiative aims to interlink fast payment systems (FPS) across India, Singapore, Malaysia, Thailand, and the Philippines by 2026 to standardise and scale retail cross-border transactions.

India and ASEAN are actively expanding cross-border financial integration through India's UPI and multilateral payment frameworks (see Boxes 13.1, 13.2 and 13.3). India and ASEAN issued the ASEAN-India Joint Statement on Advancing Digital Transformation in 2024[20]. This joint statement highlights cross-border payment linkages, fintech partnerships, DPI governance, and funding via the ASEAN-India Fund for Digital Future. Several bilateral initiatives complement these efforts.

- **Singapore (UPI-PayNow)**: The real-time cross-border linkage between India's UPI and Singapore's PayNow allows instant, low-cost person-to-person (P2P) and person-to-merchant (P2M) fund transfers.
- **Malaysia (DuitNow)**: Partial interoperability and bilateral integration efforts are underway to connect UPI with Malaysia's DuitNow ecosystem.
- **Indonesia (QRIS)**: Cooperation between India's UPI and Indonesia's Quick Response Code Indonesian Standard (QRIS) enables seamless cross-border QR code payments for travellers and merchants.
- **Thailand (PromptPay)**: Discussions and exploratory frameworks target future QR and fast-payment system interoperability with Thailand's PromptPay.
- **The Philippines (InstaPay/PESONet)**: Exploratory cooperation is ongoing with central bank authorities regarding cross-border retail payment connectivity.

India and Vietnam have taken an important step towards strengthening cooperation in digital payments and financial innovation through a Memorandum of Understanding (MoU) signed by the Reserve Bank of India and the State Bank of Vietnam (SBV). The two countries aim to deepen

Box 13.1: Unified Payment Interface

- Real-time digital payment system developed by the **National Payments Corporation of India (NPCI),** launched in April 2016. Enabling instant fund transfers by users.
- Transactions are completed using mobile numbers, QR codes, or Virtual Payment Addresses (VPAs).
- **UPI** is becoming a flagship Digital Public Infrastructure (DPI), providing the technological ground for cross-border payment connectivity in ASEAN states.
- **UPI** is enabling cross-border e-commerce, trade settlements, tourism, and remittances.

Sources: IMF (2026); NPCI (2024)

Box 13.2: ASEAN Regional Payment Connectivity

- Launched by ASEAN central banks in November 2022 for promotion of seamless cross-border digital payments across Southeast Asian countries.
- Main focus on connecting fast payment systems and the QR code payment network.
- Facilitation of cross-border retail payments, promotion of local currency settlements.
- Strengthening of regional financial integration along with support of ASEAN's **Digital Economy Framework Agreement (DEFA)**
- The benefit for India is to provide an institutional framework for India's UPI, which can be used to integrate with the ASEAN payment ecosystem.
- Consolidating digital connectivity while supporting India's Act East.

Sources: IMF (2026); ASEAN Secretariat (2024)

Box 13.3: India-Singapore UPI-Pay Now Linkage

- **UPI-Pay Now Linkage** was launched in February 2023 as the first real-time payment connection between India and Singapore (an ASEAN member state)
- **PayNow**-UPI linkage happens to be the World's first real-time payment system linkage using scalable cloud-based infrastructure to accommodate remittance traffic.
- Linking India's UPI with Singapore's **PayNow** system, enabling customers of both countries to send and receive money promptly using mobile numbers or virtual payment addresses.
- Serving as a base model for future payment connectivity between India and other ASEAN countries.

Sources: Monetary Authority of Singapore (2023); Reserve Bank of India (2023)

collaboration in areas such as financial innovation, regulatory coordination, information sharing, and digital payment systems[21]. The payment connectivity initiative is expected to facilitate trade and tourism between India and Vietnam, while creating greater export opportunities for businesses in both countries. The framework is expected to streamline cross-border financial activity through cooperation in quick payment systems, message systems and card switches.

Myanmar has set up cross-border fibre-optic networks with India. The first link, established in February 2009, connected Moreh in Manipur to Mandalay in Myanmar. The 640-km-long link passes through Tamu, Kampatwa, Kyi Gone, Shwebo, Monywa and Sagaing. The fibre-optic link supports high-speed broadband voice and data transmission[22]. India is also supporting physical and digital connectivity projects in CLMV countries through a US$ 1 billion Special Fund and developing manufacturing hubs

through the Project Development Fund (PDF) with a corpus of US$ 77 million. These can be used to strengthen digital connectivity between India and the Mekong sub-region. Further, India has also set up the India-Myanmar Centre for Enhancement of IT Skills (IMCEITS) and the Centre of Information and Communication Technology Training (CICTT) in Yangon, providing infrastructure to support digital connectivity between India and Mekong countries.

13.5. Energy Grid Connectivity

Economic activity depends on an uninterrupted energy supply. Electricity demand is expected to rise in new-age sectors such as data centres, electric vehicles, green hydrogen and digital infrastructure. The International Energy Agency (IEA) expects 85 per cent of the incremental global electricity demand to come from developing countries by 2027 (IEA, 2025). Sustainable Development Goal (SDG) 7 calls for ensuring access to affordable, reliable, sustainable, and modern energy for all[23]. Securing a resilient energy supply through source diversification, price stability, and sustainability is therefore paramount for developing countries such as India, Malaysia, Indonesia, the Philippines, Thailand, and Vietnam.

Energy connectivity through the integration of power infrastructure is emerging as a sustainable approach to energy security. Countries are benefiting from Cross-Border Electricity Trade (CBET) through power grid networks, which facilitate access to diverse energy sources and improve power quality. Power connectivity develops in stages: an early stage involving bilateral power purchase agreements (PPAs); shallow integration, involving regional coordination and harmonisation of standards; and deep integration, in which regional partners have open grid access and electricity trade is market-based (Table 13.16)[24].

Table 13.16: Different Levels of Power System Integration

	EARLY STAGE	SHALLOW INTEGRATION	DEEP INTEGRATION
Interconnection Infrastructure	Typically starts between two countries, with a low level of electricity flow. Transmission lines may be used to trade electricity only from specific power plants, without the plants being connected to their domestic network.	Interconnected grids link several neighboring countries with some countries lacking, access to the regional grid and trade. In some cases, regional infrastructure is fragmented and consists of isolated blocks. Interconnection capacity is often underutilized.	Extended infrastructure connects all or most countries in the region and enables them to participate in trade. The utilization level of interconnection gradually increases as the regional market develops and power demand increases.
Planning and Investment Coordination	Planning happens at a national level, possibly with specific regional agreements to develop priority infrastructure.	Some coordination of national investments with an optimized regional investment plan is in place. National plans increasingly take account of regional opportunities to import and export power.	Regional master plans are optimized from a regional perspective. Investment in regional infrastructure may be coordinated. Harmonized scenarios and planning methods may be used for national-level planning.
Technical and Operational Coordination	Simple rules are agreed upon for the operation of the interconnected grids.	Efforts are taken to harmonize regulatory practices and technical and market rules. Common data acquisition and supervision protocols may be used.	A large body of harmonized regulations, as well as common technical and market rules, including grid codes, exist and are enforced.
Commercial Arrangements and Market Design	Long-term bilateral PPAs predominate.	Long-term PPAs may be supplemented with short-term markets. Simple transmission pricing methods that do not reflect costs are often employed.	Fully competitive and cost-reflective regional markets exist with various products being traded, in addition to PPAs. Transmission pricing approach evolves to a more granular one sensitive to the location on the grid.
Institutional Architecture	Primarily based on bilateral agreements with no strong supra-national entity being involved.	Regional regulatory bodies and/or steering committees may be in place but face enforcement challenges.	Regional regulatory bodies and/or steering committees can effectively enforce rules.
Example	Bilateral links (e.g., Laos-Thailand and Laos-China); India and its neighboring countries.	SAPP; EAPP; WAPP; PAEM.	EU's Internal Energy Market; Western Energy Imbalance Market in the US; SIEPAC.

Source: World Bank (2024)

The 8th ASEAN Energy Outlook (ASEAN, 2024) highlights that the region's target of achieving 100 per cent electrification by 2040 is impeded by remote and difficult terrain, and its Total Final Energy Consumption (TFEC) is expected to increase to 2.6 times 2022 levels by 2050, with electricity constituting one-fifth of TFEC. The report further emphasises the role of grid extensions in facilitating electrification in Southeast Asia and fostering regional cooperation through the ASEAN Power Grid (APG) under the ASEAN Plan of Action for Energy Cooperation (APAEC).

APG is the most prominent regional energy infrastructure project, enabling multilateral power trade through the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP), with interconnection capacity reaching 10.2 GW. Another PIP is under consideration among Brunei Darussalam, Indonesia, Malaysia, and the Philippines. The APG is the flagship project of ASEAN for energy security and connectivity, building power infrastructure and harmonising markets and regional cooperation (ASEAN, 2025).

India initially released Guidelines on Cross-Border Electricity Trade in 2016 to facilitate cross-border electricity trade between India and its neighbouring countries through bilateral agreements, underpinned by transparent, consistent, and predictable regulations, uninterrupted grid operations, and sound infrastructure (Ministry of Power, 2025). These guidelines were revised in 2018 as "Guidelines for Import/Export (Cross-Border) of Electricity-2018," followed by the "CERC (Cross-Border Trade of Electricity) Regulations 2019" in 2019. In 2023, Indian power exchanges supplied electricity through the Real Market Time (RMT) under the modified "Procedure for Approval and Facilitating Import/Export (Cross-Border) of Electricity by the Designated Authority (CERC, 2024)." India currently engages in CBET with four neighbouring countries, as shown in Table 13.17. Trade is measured in million units, with negative values indicating exports and positive values indicating imports (CERC, 2025). India

Table 13.17: Trends in Cross-Border Trade of Electricity between India and the Neighbouring Countries: 2013-14 to 2023-24

Year	Bhutan (+)	Nepal (-)	Bangladesh (-)	Myanmar (-)
	(Million Units)			
2013-14	5555.18	840.37	1448.19	0.00
2014-15	5109.48	997.17	3271.89	0.00
2015-16	5555.07	1469.59	3654.4	0.00
2016-17	5863.58	2021.21	4419.61	3.23
2017-18	5611.14	2388.96	4808.83	5.07
2018-19	4657.07	2798.84	5690.31	6.67
2019-20	6310.73	2373.06	6987.94	8.61
2020-21	9318.17	1865.05	7551.99	9.24
2021-22	7670.34	1921.09	7301.74	8.80
2022-23	6379.95	158.05	8622.14	9.8
2023-24	3862.78	154.08	8413.52	8.47

Source: Central Electricity Regulatory Commission

is a net exporter to Nepal, Bangladesh and Myanmar and a net importer from Bhutan.

India also proposed One Sun One World One Grid (OSOEOG) in 2018, under the International Solar Alliance to facilitate cross-border trade in clean, affordable solar energy[25]. At the regional level, India signed an agreement for cross-border electricity cooperation with SAARC (South Asian Association for Regional Cooperation) in 2014[26]. In 2018, an MoU was signed by the BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) countries for "BIMSTEC Grid Interconnection." [27]

Within ASEAN, India already trades electricity bilaterally with Myanmar. However, at the regional level, India-ASEAN engagement on energy grid connectivity was initially recognised in the Plan of Action (PoA) for 2010-15, which called for support for energy cooperation through programmes such as the APG (ASEAN, 2012). The PoA for 2026-30 calls for continued cooperation through APG, sharing of best practices, standardisation of technical and regulatory frameworks, sharing of technology for facilitating multilateral power trade, and integration of renewable energy into the grid[28].

India also seeks to engage with other ASEAN members. For instance, during Singapore International Energy Week (SIEW) 2025, India explored green energy exports to Singapore with an expected capacity of 2,000 MW (ET, 2025). India and Thailand are connected through BIMSTEC for grid interconnection.

CBET can help energy-deficient countries access reliable supplies from countries with surplus energy, addressing regional imbalances; for instance, South Asia can benefit from Nepal and Bhutan's hydropower and India's solar and wind energy (Jha et al., 2025). CBET reduces the cost of energy by facilitating the import of off-peak-hour electricity from one country to another during its peak hours (Antweiler, 2016). Thus, CBET in South Asia and Southeast Asia can promote decarbonisation through the adoption of renewable energy at a lower cost[29]. Stronger regional cooperation in CBET brings economies of scale in capital investment and strengthens energy security across the region (Singh et al., 2018).

However, CBET faces technical and operational challenges, including data sharing, standardisation, and grid codes. Limited trust and political will, difficulties in harmonising regulations, and high project development costs pose significant obstacles to grid connectivity (UNESCAP, 2018).

India's peak power demand reached 277 GW (gigawatts) in FY26 and is anticipated to grow at 6-6.5 per cent annually over the medium term (IBEF, 2026), and ASEAN's rising power demand makes securing uninterrupted energy supply a necessity. Regional cooperation through CBET provides an efficient solution. However, it faces various challenges. India and ASEAN should address these challenges and work towards building integrated energy grid infrastructure.

13.5.1. Renewable Energy

Renewable energy has been a key focus area of ASEAN-India energy cooperation since the adoption of the 'New Delhi Declaration on ASEAN-India Cooperation in Renewable Energy' in 2012. In January 2018, as the India-ASEAN partnership entered its 25th year, a Delhi Declaration was issued to mark the occasion. The ASEAN and Indian leadership recommended: "Continue to enhance cooperation for ensuring long-term food and energy security in our region through strengthening cooperation in agriculture and energy sectors; work together to promote the development of renewable energy technology through international platforms including the International Solar Alliance (ISA) where applicable."[30] In 2021, the India Smart Grid Forum (ISGF) and the ASEAN Centre for Energy (ACE) signed an MoU establishing a framework for cooperation in smart grids, electric mobility and renewable energy development.

In 2022, India and ASEAN celebrated 30 years of partnership, and their relations were upgraded from

a strategic partnership to a comprehensive strategic partnership, with energy cooperation accorded high priority. India has been supporting various initiatives in climate action, energy efficiency, clean technologies, and renewable energy under the ASEAN-India Green Fund. India has been building hydropower projects, power transmission lines and substations, and oil and gas pipelines, among others, to develop energy infrastructure in ASEAN; however, these efforts are limited to the CLMV countries (De and Kumarasamy, 2020; and De and Venkatachalam, 2023). India already has bilateral power exchange interconnections with Nepal, Bhutan, and Bangladesh. Meanwhile, ASEAN is developing two region-wide grids, including the ASEAN Power Grid and the Trans-ASEAN Gas Pipeline.

The ISA targets US$ 1 trillion in solar investment by 2030, which would support the global energy transition. To further boost energy connectivity, India has launched a "green grid" initiative named "One Sun, One World, One Grid" at COP 26, which aims to connect inter-regional energy grids to transfer solar energy across borders, leveraging the differences in time zones, seasons, resources, and prices between countries and regions[31]. At the G20 Summit, held in Delhi in 2023, the G20 countries underscored the importance of renewable energy in building a sustainable, clean-energy society.

ASEAN-India energy cooperation offers considerable potential for advancing renewable energy. India not only shares maritime boundaries with ASEAN but also has a land border through Myanmar. Both have access to substantial wind, solar, ocean and other renewable energy resources. India's limited power grid connection with Myanmar could be expanded in scale and capacity.

As cross-border demand for green energy grows, improving solar energy connectivity is crucial for building greater economic integration between India and ASEAN. Developing the solar supply chain between ASEAN and India will provide new business opportunities for manufacturers to enter the upstream and downstream manufacturing markets, as well as enhance knowledge sharing and diffusion of technology. The solar supply chain will provide easy access to credit and increase the pool of investors in the region. A strong, secure solar supply chain in India would create jobs, reduce foreign exchange outflows, attract investment, and support sustainable long-term growth (FICCI, 2016). Building strong regional supply chains and/or production networks for solar energy will play an important role in strengthening regional energy security in the coming years.

Developing collaborative mechanisms between India and ASEAN will create unique opportunities to secure the regional solar supply chain. Northeast India could serve as a bridge between the two regions through power grid and gas pipeline connections via Myanmar. The India-Bangladesh electricity grid can further be linked to Myanmar, allowing energy access from not only Bangladesh and Myanmar but also ASEAN member states like Indonesia and Malaysia.

Since the amendment of the ISA framework agreement, only four ASEAN member states, namely Cambodia, Myanmar, Singapore, and Vietnam, have signed and ratified the framework agreement so far. However, if other ASEAN member states also join the ISA framework, it will help to build a global grid capable of transmitting renewable energy across member states at any given time and help reduce carbon emissions and energy costs.

ASEAN and India can collaborate through joint research studies in areas such as grid stability and green management. Public-private partnerships between India and ASEAN can also be explored to further strengthen energy connectivity and accelerate energy transition efforts.

ASEAN and India may consider harmonising legal and regulatory frameworks dealing with cross-border trade, along with an Energy Charter Treaty for greater security for cross-border energy transfer-related investments and transactions.

India may develop a framework for a regional energy exchange along with operational procedures and regulatory and commercial requirements for cross-border trade with ASEAN.

There is a need to identify technically and economically feasible cross-border interconnections to improve the investment environment for both electricity generation and transmission between India and ASEAN.

There is therefore considerable scope to deepen cooperation, advance low-carbon growth and address shared challenges.

To deepen engagement, secretary-level policy dialogues on energy cooperation can be organised with participation from energy think tanks in ASEAN and India. An ASEAN-India Network of Energy Think-Tanks may be set up to facilitate knowledge transfer with the ultimate objective of strengthening energy connectivity between the two.

13.6. India's Multimodal Connectivity Projects with Southeast Asia

India's main connectivity projects with Southeast Asia include the India-Myanmar-Thailand Trilateral Highway (TH), its extension to Cambodia, Lao PDR and Vietnam, and the Kaladan Multimodal Transit Transport Project. These initiatives are at different stages of implementation.

13.6.1. Trilateral Highway

The TH linking India, Myanmar and Thailand, together with its proposed extension to Cambodia, Lao PDR and Vietnam (CLV), would facilitate trade in goods and services and the movement of people between India and Southeast Asia. Connecting India's Northeastern Region (NER) with Southeast Asia would increase trade and investment, strengthen regional value chains, create jobs and deepen people-to-people ties. The NER could thus play a central role in strengthening ASEAN–India connectivity.

The TH project involves the construction of a 1,360-km highway connecting Moreh in Manipur to Mae Sot in Thailand through Myanmar. The TH is presently under construction. The Tamu–Kalewa-Kalemyo road, or the India-Myanmar Friendship Road, as part of the TH, was inaugurated in 2001.

ERIA completed a study on the extension of the Trilateral Highway to Cambodia, Lao PDR and Vietnam (ERIA, 2020). According to ERIA, except for one small section between Xieng Kok and Luang Namtha via Muang Sing in the Lao PDR, all sections of the suggested northern route are already designated as parts of the Asian Development Bank (ADB), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), and Master Plan on ASEAN Connectivity (MPAC) 2025 transport corridor projects (ERIA, 2020). All sections of the southern route of the eastward extension overlap with the East-West Economic Corridor, North-South Economic Corridor, and the Southern Economic Corridor of ADB. The development of the TH's eastward extension, therefore, requires close cooperation with international projects executed by ASEAN, ADB, AIIB, UNESCAP, and the World Bank.

At the same time, the Trilateral Motor Vehicle Agreement (T-MVA) is being negotiated. This agreement will allow vehicles and passengers to move seamlessly for regional and international trade transportation purposes along the Trilateral Highway. The MVA would establish operating procedures (OP) for vehicles, customs procedures, and other measures to facilitate cargo and passenger movement along the corridors. The MVA will also provide transit and transportation rights and obligations through annexes and protocols. This Agreement will have a critical role in realising seamless movement of passengers, private vehicles and cargo vehicles along the Trilateral Highway. Without the MVA, the TH will be non-operational. However, progress in negotiating the MVA between India, Myanmar, and Thailand for the TH has been slow.

Another important cross-border connectivity project is the Mekong-India Economic Corridor (MIEC), which involves integrating four Mekong countries, namely, Myanmar, Thailand, Cambodia, and Vietnam, with India. It aims to connect Danang (Vietnam) with Dawei (Myanmar) via Bangkok (Thailand), Phnom Penh (Cambodia), and Chennai in India. A major part of the necessary investment is for the development of a port and a special economic zone (SEZ) at Dawei. This corridor, when completed, is expected to augment trade between Southeast Asia and India by reducing travel distances and removing supply-side bottlenecks.

13.6.2. Kaladan Multimodal Transit Transport Project

One of the objectives of the Kaladan Multimodal Transit Transport Project is to provide access to the Bay of Bengal to India's landlocked Northeastern Region, particularly the state of Mizoram. The components of this project include: (i) construction of an integrated port and Inland Water Transport (IWT) terminal at Sittwe including dredging; (ii) development of a navigational channel along the Kaladan River from Sittwe to Paletwa (158 km); (iii) construction of an IWT-highway transhipment terminal at Paletwa; (iv) construction of six IWT barges (each with a capacity of 300 tonnes) to transport cargo between Sittwe and Paletwa; and (v) building a double-lane highway (109 km) from Paletwa to the India-Myanmar border (Zorinpuri) in Mizoram.

A framework agreement and two protocols (Protocol on Transit Transport and Protocol on Maintenance) were signed by India and Myanmar on 2 April 2008. Construction of the integrated port-cum-IWT jetty at Sittwe was completed and inaugurated in 2023-24. Construction of the IWT terminal at Paletwa was also completed. The Border to NH 54 (Lawngtlai) Road on the Indian side in Mizoram is in progress under the Ministry of Road Transport and Highways, Government of India. A 109 km road from Zorinpuri on the India-Myanmar border to Paletwa in Myanmar is under construction.

13.6.3. Mekong-India Economic Corridor (MIEC)

Another important cross-border connectivity project is the Mekong-India Economic Corridor (MIEC), which involves integrating four Mekong countries, i.e., Myanmar, Thailand, Cambodia and Viet Nam, with India. It will connect Danang (Vietnam) with Dawei (Myanmar) via Bangkok (Thailand), Phnom Penh (Cambodia), and Chennai in India. A major part of the necessary investment is for the development of a port and special economic zone (SEZ) at Dawei. While the construction of the SEZ has been ongoing for quite some time, construction of the Dawei deep-water port has not yet started. This corridor, when completed, is expected to augment trade between Southeast Asia and India by reducing travel distances and removing supply-side bottlenecks. The corridor focuses on expanding the manufacturing base as well as trade with the rest of the world, and particularly between ASEAN and India. It may enable ASEAN economies and India to integrate further and collectively emerge as a globally competitive economic bloc[32].

Establishing rail connectivity with Myanmar would be crucial in terms of both increasing bilateral trade and improving people-to-people contacts. Rail links will significantly reduce journey times, especially for long-distance freight and passenger services. The study for a rail link from Jiribam in Manipur to Mandalay in Myanmar was conducted by Rail India Technical and Economic Service (RITES) Limited in 2005. According to the study, the total length of the rail line from Jiribam to Mandalay is 885.4 km, out of which the length of the Jiribam –Imphal – Moreh route is 219 km, and the length of the Tamu–Kalay route is 127.4 km. This rail project is part of the southern corridor of the Trans-Asian Railway network. On completion of the Jiribam–Imphal–Moreh route, potential onward connections could include (i) the India-Myanmar-Thailand-Malaysia-Singapore rail link, and (ii) the India-Myanmar-Thailand-Hanoi rail link.

Missing rail and road links in Myanmar obstruct overland connectivity between India and Southeast

Asia. Therefore, road conditions and the railway system in Myanmar need improvement and upgrading. Extension of the Trilateral Highway (TH) to Mekong countries, direct air links, completion of ongoing connectivity projects, and maritime links with Cambodia and Vietnam are some of the projects that will take cooperation between India and the Mekong countries to a new level. A better coordination mechanism between Mekong countries and India would be helpful in building cross-border connectivity.

13.7. Conclusions

ASEAN–India connectivity has evolved from an infrastructure agenda into a comprehensive strategy for economic integration and Indo-Pacific cooperation. Land projects such as the IMT Highway and Kaladan Corridor seek to physically connect India with Southeast Asia. Maritime connectivity underpins trade and security. Air links facilitate mobility and services integration. Digital cooperation, particularly through the 2024 ASEAN–India Digital Transformation initiative, represents the new frontier of partnership. Energy cooperation supports both security and sustainability, while trade facilitation ensures that connectivity generates measurable economic benefits.

India-ASEAN connectivity needs to evolve from facilitating bilateral trade to enabling deeper integration of regional production networks and greater economic resilience. Connectivity policies, combined with physical infrastructure development, digital integration, and institutional cooperation, can advance regulatory harmonisation.

Priority should be given to completing the India-Myanmar-Thailand Trilateral Highway, expanding maritime cooperation in the Bay of Bengal, and improving air connectivity to increase regional accessibility.

India needs to leverage its strategic geographical position in the Indo-Pacific by strengthening ties with ASEAN through an integrated port-led approach, coastal shipping, multimodal logistics, and digital platforms. Areas for cooperation between India and ASEAN include customs modernisation, digitalisation of logistics, green and smart ports, sustainable aviation, and more efficient transport systems.

ASEAN and India face common SDG targets and challenges in renewable energy. Therefore, regional cooperation can generate wider benefits through knowledge exchange, training and capacity building to address shared challenges. The development of sustainable energy solutions is imperative for enhancing cross-border energy trade. Among renewable energy sources, solar energy is a promising option, given the region's position within the highest band of average annual solar energy globally. Therefore, forging ties in the energy sector assumes critical importance in ASEAN-India relations.

Ultimately, connectivity should be viewed as a comprehensive development strategy encompassing trade, investment, tourism, services and people-to-people exchanges between India and ASEAN. A coordinated approach, involving central and state governments and cooperation with ASEAN partners, can make India-ASEAN connectivity a driver of sustainable economic growth, regional integration and supply chain resilience.

Enhancing connectivity cooperation with Southeast Asia is expected to generate substantial benefits for the Northeastern Region of India (NER). Enhanced connectivity between India's NER and Southeast Asia is also important for Bhutan and Nepal, as it could strengthen their trade linkages with ASEAN.

The central challenge facing ASEAN and India today is not the absence of connectivity initiatives but their effective implementation. If current projects are completed and accompanied by regulatory reforms, ASEAN–India connectivity can become a cornerstone of a resilient, prosperous, and multipolar Indo-Pacific order.

Endnotes

1 AIC-RIS (2016)
2 Authors' calculation based on DGCA
3 ibid.
4 ASEANstats
5 Nugraha (2020)
6 Ministry of External Affairs (MEA)
7 Consulate General of India (2026)
8 ASEANstats
9 Ministry of Civil Aviation (a)
10 Ministry of Civil Aviation (b)
11 World Trade Organization.
12 World Bank
13 Figure 4 does not map the 'other commodity' category.
14 Figure 5 does not map the 'other commodity' category.
15 Authors have obtained the value of containerized cargo in TEU by dividing the total 'other commodity' (given in terms of tonnes) unloaded and loaded by India to ASEAN by a conversion factor of 18 tonnes.
16 Lloyd's List (2025)
17 It is based on 5 components: number of transshipments required between two countries, number of direct connections common to both countries, number of common connections by country pair with one transshipment, level of competition on services that connect the countries and size of the largest ship on the weakest route
18 GlobeNewswire (2023)
19 ICPC (2023)
20 Ministry of External Affairs (2024)
21 Economic Times (2026)
22 Global Times
23 United Nations
24 World Bank (2024)
25 International Solar Alliance (2026)
26 SAARC (2014)
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31 PIB (2021)
32 Theparat (2017)

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14 India-ASEAN Maritime Engagement: From Cooperation to Collaboration

Sujeet Samaddar and Vanshika Goyal

14.1. Introduction

Since ancient times, oceans have connected civilisations. They have facilitated long-distance trade, cultural exchange, and people-to-people connections. Peninsular India connects with West Asia across the North Indian Ocean and the Arabian Sea, and through the Bay of Bengal, the Andaman Sea, and the Eastern part of the Indian Ocean, it connects with East Asia and even further into the Pacific Island States. India has gained immensely from this geographical advantage.

India, in alignment with its declared vision of a free, open and inclusive Indo-Pacific, has been enhancing maritime engagement and forging partnerships with its maritime neighbours.[1] One such partnership that India seeks to beneficially strengthen is with ASEAN. ASEAN, with 10 of the 11 members being coastal states, is fundamentally a maritime region, and from a strategic viewpoint, the "region's major sea lines of communication, such as the Malacca, Singapore, and Lombok Straits, and the South China Sea, are vital arteries in the world's supply chain, energy security, and connectivity".[2] The maritime space between the two has served as the foundation of economic and cultural connections and contributed immensely to each other's well-being and prosperity since pre-modern times. It continues to do so even today. The modern period economic engagement between the two began in the early 1990s when India announced a major overhaul of its economic policies. Since then, ASEAN has become a key trading partner of India, with an 11 per cent share in its global trade, with bilateral trade reaching about US$ 128 billion in 2025-26[3], up from US$ 5.84 billion in 1996-97.[4] However, India has consistently recorded a merchandise trade deficit with ASEAN, and the deficit was approximately US$ 45.2 billion in 2024-25.[5]

In recent years, maritime engagements between ASEAN and India have seen an upward trend. The sea lines of communication (SLOCs) in the region, including the Straits of Malacca and Singapore, carrying one-third of the world's crude oil, are a key medium for merchandise and energy shipments, and therefore a stable maritime environment becomes a matter of global importance from both an energy and commodity security perspective. Food security is another consideration. The region accounts for nearly 22 per cent of global fishery production, but overfishing and Illegal Unreported and Unregulated (IUU) fishing have become a constant threat to this important source of protein for the regional population. Marine debris and solid waste remain untreated and eventually flow into the seas and oceans. Single-use plastic compounds the problem, particularly as microplastics enter the food chain through salt and marine fisheries. Other concerns

include maritime crime, terrorism, smuggling and human trafficking, piracy and armed robbery against ships.[6]

For these reasons, maritime issues between ASEAN and India extend well beyond shipping and transport to encompass trade, investment, blue economy cooperation, maritime safety and security, sustainable development, digital innovation, capacity building and resilient supply chains. Though earlier engagements between India and ASEAN have focused more on maritime security in the region but, now there is a visible thrust to explore a multifaceted agenda that entails ocean management, safety at sea, compliance and regulation requirements in accordance with international treaty obligations, renewable energy, climate resilient infrastructure, sustainable use of ocean resources, all of which significantly and cumulatively impact the region's economic development. This requires a paradigm shift in maritime engagement that scales from tactical cooperation towards operational and strategic collaboration.

Therefore, the paper distinguishes between maritime cooperation and maritime collaboration between India and ASEAN. It identifies additional maritime issues that could form the baseline agenda for future dialogue, suggests convergences, and presents actionable pathways and institutional mechanisms for leveraging synergies in existing institutional mechanisms for the common purpose of co-prosperity.

14.2. ASEAN-India Maritime Partnership

14.2.1. Political Engagement

India and ASEAN began their formal engagement in 1992 through a Sectoral Dialogue Partnership. In 1996, it was elevated to a full Dialogue Partnership. In 2002, the first India-ASEAN Summit took place, marking the start of an annual apex leader-level meeting and by 2012, the engagement had expanded into a Strategic Partnership.[7] After India-ASEAN relations were elevated to the summit level, the two jointly presented normative action plans to strengthen maritime engagement and coordination in the priority areas discussed. The first Plan of Action (POA) was adopted for 2004 - 2010 to implement the partnership, and subsequently it focused on trade and economic cooperation, Science and Technology (S&T), and tourism and cultural exchanges.[8] In 2022, the collaboration reached its highest level when the two sides celebrated 30 years of engagement with the establishment of the Comprehensive Strategic Partnership (CSP)[9]. As per a Ministry of External Affairs briefing note, "India's engagement with the ASEAN has been driven primarily by (i) Act East Policy (AEP) with focus on ASEAN; (ii) build on our Indo-Pacific Oceans Initiatives (IPOI); and (iii) enhancing physical and digital connectivity"[10].

14.2.2. Trade Relations

ASEAN is India's second-largest regional trading partner, with bilateral merchandise trade at about US$ 128 billion in 2025-26. This underscores that ASEAN-India engagement is beyond strategic or geopolitical contours but is very significantly economic in nature too.

However, the trade deficit has been consistently widening, reaching approximately US$ 45.2 billion in 2024-25[11] from about US$ 14.1 billion in 2015-16.[12] This widening trade deficit highlights the need to complement trade liberalisation with deeper industrial and maritime collaboration. Considering that the core connectivity is oceanic, deepening maritime engagement could enhance the efficiency, resilience, and competitiveness of bilateral trade and enlarge its constituent elements. Joint initiatives in shipbuilding, maritime logistics, port digitalisation, marine technology, and Blue Economy value chains could help shift the partnership from one driven primarily by merchandise trade towards one based on co-production, innovation, and integrated maritime supply chains that may ultimately narrow the deficit in the future if not reverse it altogether.

14.2.3. Regional Maritime Cooperation Through the Decade

Maritime issues were not initially recognised as a specific area for cooperation, but as engagements evolved and dialogue intensified, it was given specific mention in the POA for 2016 -2020, which called for promoting cooperation in maritime security, counter-piracy, and search and rescue cooperation, along with strengthening maritime transport connectivity[13].

India - ASEAN maritime cooperation spans the entire Indo-Pacific region. Individually, in 2018, India unveiled its vision for the Indo-Pacific through the IPOI, calling for a free, open, and inclusive order,[14] and ASEAN articulated its maritime perspective on the Indo-Pacific through the ASEAN Outlook on the Indo-Pacific (APOI), launched in 2019.[15] Both visions espouse the principle of ASEAN Centrality.

Maritime cooperation has, therefore, assumed a new salience since 2018. The POA to implement the ASEAN-India Partnership for Peace, Progress and Shared Prosperity (2021-2025) calls for exploring implementation activities to advance cooperation between APOI and IPOI, with a focus on maritime connectivity and the Sustainable Development Goals (SDGs).[16]

The extracts of the Plan are placed in Box 1. The Plan, therefore, reflects a transition from a predominantly security-centric conception of maritime cooperation towards a multidimensional cooperation agenda encompassing other elements such as sustainability, economic development, and ocean governance.

14.2.4. Joint Statement on Maritime Cooperation

In 2023, India and ASEAN issued a joint statement on maritime cooperation at the 20th ASEAN-India Summit in Indonesia.[17] The statement builds upon the CSP signed in 2022. It states, "Reaffirming their commitments towards peace, stability, and security in the Indo-Pacific region through a rules-based approach and recognising the importance of oceans and seas, they declared to:

Box 14.1: Extract from Plan of Action to Implement the ASEAN-India Partnership for Peace, Progress and Shared Prosperity (2021-2025)

14. Promote maritime security and safety, freedom of navigation and overflight, unimpeded commerce, mutual trust and confidence, exercise of self-restraint, the non-use of force or of the threat to use force, and the resolution of disputes by peaceful means, in accordance with universally recognised principles of international law, including the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the relevant Standards and Recommended Practices of the International Civil Aviation Organization (ICAO), and the relevant instruments and conventions of the International Maritime Organization (IMO).
15. Explore cooperation, where appropriate, to promote common principles, objectives and elements between the ASEAN Outlook on the Indo-Pacific (AOIP) adopted at the 34th ASEAN Summit in Bangkok and the Indo-Pacific Oceans Initiative (IPOI) announced by India at the 14th East Asia Summit in Bangkok.
16. Promote maritime cooperation, including maritime security, counter piracy, maritime safety and search and rescue (SAR) cooperation, and information sharing, through appropriate mechanisms under the ASEAN-India framework and other appropriate Final 4 ASEAN-led mechanisms, including EAS, ADMM-Plus, ARF, Expanded ASEAN Maritime Forum and where appropriate, promote technical cooperation, capacity building and development, exchange of experience and sharing of knowledge and expertise.
36. Promote maritime transport cooperation between ASEAN and India and encourage potential private sector participation in the development of seaports, maritime logistics network and maritime services in order to create greater efficient linkages.

Sources: ASEAN Secretariat

a) Explore cooperation on the sustainable use of the oceans, seas, and marine resources,
b) Enhance connectivity by exploring synergies between the 'Master Plan on ASEAN Connectivity (MPAC) 2025',
c) Promote cooperation in the Blue Economy,
d) Prevent and reduce marine debris,
e) Development of maritime infrastructure, including maritime industries focusing on the areas of fisheries and shipbuilding,
f) Enhance food security and nutrition,
g) Enhance ASEAN-India Space Cooperation,
h) Cooperation for the development and research of marine technology, including digitisation, data analytics, and data statistics,
i) Conservation and preservation of underwater natural and cultural heritage,
j) Task appropriate mechanisms to strengthen maritime cooperation."

Therefore, this 'Joint Statement' prepares a comprehensive bilateral maritime agenda, encompassing maritime domain awareness (MDA), humanitarian assistance and disaster relief (HADR), counter-piracy, combating IUU fishing, capacity building, sustainable ocean management, and enhanced maritime connectivity.

Further, realising the potential of marine transport connectivity, the POA 2026-2030[18] outlines areas of cooperation such as private-sector participation in the development of seaports, maritime logistics network and maritime services to improve maritime efficiency, lowering logistics costs and deepening supply chains.

14.2.5. Recent Initiatives

In the 21st ASEAN-India Summit meeting held in Vientiane, Lao PDR, the joint statement declared, "To Advance the implementation of ASEAN-India Joint Statement on Maritime Cooperation and continue to cooperate on areas such as maritime security, blue economy, sustainable fisheries, marine environmental protection, marine biodiversity, and climate change issues, among others"[19]. The declaration also referred "Enhance connectivity between ASEAN and India in line with the "Connecting the Connectivities" approach, by exploring synergies between the Master Plan on ASEAN Connectivity (MPAC) 2025 and its successor document, the ASEAN Connectivity Strategic Final 5 Plan (ACSP) and India's connectivity initiatives in the region under India's Act East Policy and Security and Growth for All in the Region (SAGAR) vision". Incidentally, the concept of 'Connecting the Connectivities' was first articulated in an ASEAN Plus Three summit meeting in 2018[20].

At the 22nd India-ASEAN Summit, held on 26 October 2025 in Kuala Lumpur, Malaysia, the year 2026 has been designated as 'ASEAN-India Year of Maritime Cooperation', under which, among other activities, ASEAN-India Conference on Blue Economy, ASEAN-India Maritime Exercise, East Asia Summit Conference on Maritime Security Cooperation and East Asia Summit Maritime Heritage Festival are planned to be organised to forge partnerships with the ASEAN members[21]. Therefore, the maritime engagement between ASEAN and India continues to grow proactively.

As seen from the foregoing, ASEAN-India maritime relations reflect a clear evolution. From an initial focus on political dialogue and maritime security, it is now a comprehensive partnership encompassing connectivity, sustainable development, technological innovation, environmental stewardship, and ocean governance. This historical progression provides the foundation for the next phase of the partnership characterised by jointly developed capabilities, new institutions, technologies, and practical initiatives that deliver tangible sustainable benefits for regional peace, stability, and shared prosperity on the principle of mutual respect, equity, and transparency.

14.2.6. Bilateral Maritime Engagements with ASEAN Member States

India has also engaged bilaterally with ASEAN member states for maritime cooperation. For instance, with Indonesia, through the India-Indonesia Security Dialogue (2022), both countries agreed to enhance

maritime, defence, and cyber security cooperation[22]. India extended a Letter of Credit (LoC) for US$ 100 million (2014) and another US$ 500 million (2023) and transferred an Indian Navy Corvette to Vietnam.[23] The Philippines and India signed a US$ 375 million deal for BrahMos supersonic cruise missiles[24]. India along with Cambodia, Indonesia, Malaysia, the Philippines, Singapore, and Thailand has periodic interactions with the Indian Navy on maritime security, including maritime exercises in 2023.[25] In 2024, the Philippine Coast Guard and the Indian Navy concluded a White Shipping Information Exchange. Earlier, India had concluded White Shipping Agreements with Singapore, Malaysia, and Myanmar. During the discussion on the POA for the Implementation of the India-Vietnam CSP for the period 2024-2028, Vietnam and India signed an MoU for the development of a national maritime heritage complex at Lothal, Gujarat.[26]

Table 14.1: India's Bilateral Maritime Engagements with ASEAN Member States

Countries	Key Maritime Milestones with India	Strategic Significance
Singapore	SIMBEX has been going on since 1994, including naval logistics, submarine rescue exercises, maritime training, and port cooperation.	India's longest-running bilateral naval exercise, a benchmark for interoperability.
Vietnam	US$600 million Defence Lines of Credit. Also, India transferred INS Kirpan in 2023. Cooperation in hydrography, MDA, naval training and defence-industrial cooperation is ongoing.	India's most comprehensive maritime strategic partnership in ASEAN.
Philippines	Export of the BrahMos coastal defence missile system (2022) and expansion of naval and coast guard cooperation and training.	India's emergence as a regional defence and maritime security partner.
Indonesia	Cooperation on Sabang Port, conduct of coordinated patrols along the maritime boundary line, naval exercises and maritime security cooperation. Renewal of the Memorandum of Understanding (MoU) on Maritime Safety and Security Cooperation and the conclusion of the Implementing Arrangement between BAKAMLA RI and Indian Coast Guard	Strategic partnership at the gateway to the Strait of Malacca.
Thailand	India - Thailand Naval CORPAT, White Shipping and maritime security cooperation.	Enhances security in the Andaman Sea and eastern Indian Ocean.
Myanmar	Joint naval exercises, transfer of patrol vessels, coastal surveillance and maritime infrastructure assistance such as the Development of Port Sittwe and the Kaladan Multimodal Transport Project.	Critical for Bay of Bengal security and connectivity. Entry port to ASEAN hinterland.
Malaysia and Brunei	Naval visits, training exchanges and maritime capacity building.	Expanding operational engagement with ASEAN maritime partners.
South Korea	Comprehensive Framework for Partnership in Shipbuilding, Shipping & Maritime Logistics, Cooperation in the Field of Ports, Maritime Heritage	Joining the Indo-Pacific Oceans Initiative

Source: Authors' own.

ASEAN-India naval engagement has evolved from bilateral confidence-building exercises and coordinated patrols to increasingly complex multilateral engagements such as MILAN 2026 and International Fleet Review 2026, which was held in Visakhapatnam in February 2026. Nine ASEAN navies[27] participated in a range of exercises and professional exchanges, and the ASEAN Navy leadership also joined a "Conclave of Chiefs" following the operational phase. Interestingly, the theme of the IFR and MILAN 2026 was "Camaraderie, Cooperation, Collaboration"[28].

This evolution reflects a transition from tactical interoperability and maritime security cooperation towards broader maritime collaboration encompassing MDA, HADR, anti-submarine warfare, cyber resilience, and coordinated responses to emerging maritime challenges. A summary of the significant bilateral maritime engagements with ASEAN member countries is placed in Table 14.1.[29]

There has, therefore, been substantial improvement in maritime engagement which have become pivotal in strengthening dialogue, cooperation, and coordination in the Indo-Pacific region across not only with ASEAN member countries but also in other regional forums.

Though only five of the eleven ASEAN states are members of the Indian Ocean Rim Association (IORA), a Memorandum of Understanding (MoU) between ASEAN and IORA was concluded on 4 September 2023 on the sidelines of the 43rd ASEAN Summit and Related Summits in Jakarta. The MoU is aimed at setting out, "practical cooperation between ASEAN and IORA to be undertaken by their respective Secretariats, particularly in the following areas: i) priority areas of cooperation of the AOIP and the IORA outlook on the Indo-Pacific (IOIP); ii) blue economy; iii) people-to-people exchanges; and iv) digital and green economies"[30] which focuses on enhancing cooperation and the adoption of sustainable practices in the Indian Ocean[31].

As per a PIB Release[32], "India launched SAGAR (Security and Growth for All in the Region) in 2015 to secure its immediate Indian Ocean neighbourhood. It later evolved and expanded its reach globally by launching MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions) in 2025 to build partnerships across the broader Global South. Both doctrines work to improve regional security, grow the ocean economy, and respond to disasters".

These statements and briefings provide clear guidance for policymakers in identifying specific maritime aspects that are potential areas of constructive and productive maritime engagement.

14.3. Making the Next Move: From Cooperation to Collaboration

14.3.1. Cooperation and Collaboration

Although the terms "maritime cooperation and maritime collaboration" are frequently used interchangeably in policy discourse, they represent different levels of engagement between states and institutions. While no universally accepted definition in maritime law or international maritime policy formally distinguishes the two, the broader literature on international relations and collaborative governance provides a useful conceptual framework.

Maritime cooperation refers to the coordination of policies and activities among sovereign states in pursuit of shared or compatible interests. As Robert O. Keohane[33] argues, "cooperation occurs when states adjust their behaviour to accommodate the preferences and interests of others because they recognise that such coordination produces mutual benefits, even though each actor continues to pursue its own national objectives". In the maritime domain, cooperation typically encompasses information sharing, MDA, naval exercises, search and rescue operations, hydrographic surveys, coast guard

training, and coordinated responses to piracy, illegal fishing, marine pollution, or humanitarian disasters. Such activities generate interoperability and Standard Operating Protocols (SOPs) that strengthen confidence, reduce uncertainty, and improve collective maritime security while preserving the autonomy of participating states.

Maritime collaboration represents a more advanced, sophisticated and complex phase of engagement. It moves beyond coordination towards the joint creation of capabilities, institutions, technologies, or policies that no single participant could develop as effectively on its own. Barbara Gray[34] defines collaboration as "a process through which parties who

Table 14.2: Maritime Cooperation and Maritime Collaboration

Domain	Maritime Cooperation	Maritime Collaboration
Strategic Objective	Coordinate national policies and activities to address shared interests.	Jointly create regional capabilities, institutions, and long-term strategic outcomes.
Maritime Security	Naval exercises, White Shipping agreements, information sharing, coordinated patrols, search and rescue.	Integrated Maritime Domain Awareness (MDA), jointly developed surveillance systems, common maritime security architecture, and co-development of autonomous maritime systems.
Blue Economy & Trade	Facilitate shipping, port calls, logistics dialogue, customs cooperation, fisheries management.	Joint port development, integrated logistics corridors, maritime industrial clusters, common digital trade platforms, regional blue economy value chains.
Maritime Technology and Innovation	Exchange technical expertise, training, best practices, and academic exchanges.	Joint R&D, co-development of autonomous vessels, AI-enabled shipping, smart ports, digital twins, maritime cybersecurity platforms, shared innovation hubs.
Climate and Ocean Sustainability	Information exchange on marine pollution, disaster response, ocean observations, and conservation initiatives.	Joint blue carbon programmes, collaborative marine scientific research, regional ocean observing systems, common climate adaptation projects, co-financed ecosystem restoration.
Marine Living Resources	Fisheries agreements, stock assessments, capacity building.	Joint aquaculture research, marine biotechnology, sustainable seafood value chains, shared resource management institutions.
Critical Marine Infrastructure	Coordination on submarine cable protection, navigational safety, and emergency response.	Joint investment in subsea cable resilience, offshore renewable energy, strategic ports, and resilient maritime infrastructure.
Industrial Development	Business delegations, investment promotion, regulatory dialogue.	Joint shipbuilding programmes, green ship technologies, offshore engineering, maritime manufacturing ecosystems.
Knowledge and Human Capital	Student exchanges, professional training, workshops, policy dialogue.	Joint centres of excellence, common research agendas, shared doctoral programmes, regional maritime innovation networks.
Governance	Consultation and coordination while retaining independent national implementation.	Shared governance mechanisms, joint funding, common standards, institutionalised decision-making, co-ownership of regional initiatives.

Sources: Authors' own

see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision". Similarly, Chris Huxham[35] argues that, "collaboration generates 'collaborative advantage' by enabling organisations to create outcomes that exceed what each could achieve independently". Applied to the maritime sector, collaboration implies shared governance, co-investment, joint research and development, common technological platforms, and long-term institutional arrangements. Examples include jointly developed maritime digital infrastructure, collaborative shipbuilding programmes, regional centres for marine scientific research, blue carbon restoration initiatives, or common maritime innovation ecosystems. Table 14.2 summarises the distinction between these terms.[36]

As shown in Table 14.2, the objective of maritime cooperation is to build trust, confidence, and mutual understanding among partners through dialogue, coordination, and shared action. The desired outcome of maritime collaboration is creating shared capabilities through joint investment, technological innovation, institutional partnerships, and scientific research. Cooperation enables states to manage shared challenges through coordination and confidence-building, whilst collaboration enables partners to create shared capabilities and institutional capacities that can shape regional governance and jointly influence the future maritime order. Hence, cooperation and collaboration are successive stages of institutional maturity in diplomatic engagement.

This distinction has important implications for the future of ASEAN-India maritime relations. Over the past three decades, ASEAN and India have established a strong foundation of maritime cooperation through political dialogue, naval interactions, capacity-building programmes, MDA, and support for a rules-based order under United Nations Convention on the Law of the Sea (UNCLOS). These initiatives have strengthened mutual confidence and trust and hence contributed to regional stability. However, the strategic and technological challenges of the Indo-Pacific now require a much more elevated engagement.

A transition from maritime cooperation to maritime collaboration calls for advancing a more resilient, innovative, imaginative, and sustainable partnership across the Indo-Pacific. This transition can trace its origins to the two visionary documents of India and ASEAN, namely IPOI and the AOIP. An analysis of these documents could possibly prepare a pathway for substantive collaboration.

14.3.2. IPOI and the AOIP: Convergence for Collaboration

As the POA (2021-25) calls for cooperation with IPOI and AOIP as the foundational basis, the first step is to identify convergences between the two. Both the initiatives emphasise, firstly, an open and rules-based Indo-Pacific, secondly, ASEAN Centrality, and finally, a cooperative maritime governance framework. The strategic vision is to have inclusive engagement rather than exclusive collaboration, underlying the significance of ASEAN's central role in the Indo-Pacific. They share four overlapping pillars, namely maritime cooperation, connectivity, sustainable development (including maritime ecology and resources), and economic cooperation.

14.3.3. Pillars of Collaboration

Three ASEAN member states co-lead various IPOI pillars that map to the AOIP's four priority areas. First, Thailand with Australia is the co-lead on maritime ecology, which also includes sustainable development. Second, Indonesia is the co-lead with France on maritime resources. Third, Singapore and Italy co-lead the science, technology, and academic cooperation pillar. However, the IPOI's trade, connectivity, and maritime transport pillar is co-led by Japan and the US, while maritime security, which has been subsumed under the AOIP's maritime cooperation umbrella pillar, is co-led by India and the UK, and disaster risk reduction and management is co-led by India and Bangladesh. All three are without

ASEAN co-lead partners. Similarly, capacity building and resource sharing is co-led by Germany with no other partner country. Potentially, the capacity building pillar could accommodate an ASEAN member country, such as Vietnam or the Philippines.

Under the maritime cooperation pillar, maritime security, freedom of navigation, environmental protection, and sustainable ocean governance are the common objectives outlined in both initiatives. These areas cannot be effectively mitigated by one state as they require high human and capital resources, technological capabilities, and collaboration. Crucially, non-participation of even one relevant stakeholder can disrupt decades of cooperative efforts.

Significantly, the region, specifically the Bay of Bengal littoral, is prone to natural disasters such as cyclones, which have become an annual phenomenon causing substantial economic and human losses to the littoral states, India, Indonesia, Myanmar and Thailand. Therefore, a higher level of collaboration on HADR could be considered through more institutionalised and robust alignment on knowledge sharing and research in associated S&T and instituting collaborative frameworks.

The other common pillar is trade connectivity and maritime transport. AOIP also calls for focusing on physical, institutional, and digital connectivity. Since most of the trade between India and ASEAN is seaborne, maritime connectivity becomes a paramount subject for enhancing both cooperation and collaboration. Measures to ruggedise supply chains and leverage technological means to track vessels and cargoes via satellites, for shared real-time information sharing, etc., to ensure the safety and security of shipping could be considered.

Another pillar of convergence includes a commitment to sustainable development through climate-resilient infrastructure, biodiversity protection, and blue economy cooperation. Capacity building through institutional platforms, resource sharing, and training then becomes an area of potential collaboration.

Hence, both visions provide a solid foundation for maritime collaboration and offer a platform to prepare a comprehensive agenda for maritime collaboration.

14.4. Agenda for Maritime Collaboration

As per a World Bank report, "The ASEAN region is geographically diverse, covering a land area of 4.5 million km^2 or 3.3 per cent of the world area, and a coastline of 173,252 km, the third longest in the world". Adding India's own 2.4 million km^2 of EEZ and 11,098 kms of coastline[37] makes the region one of the world's largest contiguous maritime domains. Hence, with a total population base of more than 2 billion people, a combined GDP approaching US$ 8 trillion[38], an Exclusive Economic Zone (EEZ) of approximately 12.4 million km^2, and annual bilateral merchandise trade exceeding US$ 120 billion, makes the partnership one of the largest and most strategically significant maritime jurisdictions in the world, underscoring its potential to shape the future of the Indo-Pacific's maritime economy, security architecture, and ocean governance. Particularly, this region is home to some of the world's largest fisheries, substantial offshore energy resources, blue carbon ecosystems, and marine biodiversity, amongst other resources, with globally critical SLOCs transiting through its adjoining ocean spaces. Indeed, ASEAN and India possess the credentials to shape the future of the Indo-Pacific maritime order through deeper maritime collaboration to unlock the full economic and strategic potential offered by geography, geo-economics and geo-politics to the region.

Therefore, recognising this latent potential, the ASEAN-India maritime agenda has undergone a significant but incremental transformation over the past three decades. Initially, cooperation was driven largely by traditional maritime security concerns, including sovereignty, freedom of navigation, and the peaceful resolution of disputes, together with non-traditional threats such as piracy, maritime terrorism, illegal trafficking, and HADR.

As the Indo-Pacific emerged as the centre of global economic activity and strategic competition, these concerns became increasingly intertwined with broader economic, environmental, and developmental challenges. The sustainable management of marine resources, maritime connectivity, the Blue Economy, marine pollution, food security, climate resilience, and marine scientific research have consequently become integral components of the maritime agenda.[39] This entails jointly developing technologies, investing in resilient maritime infrastructure, strengthening regional maritime institutions, fostering coordination on international forums, and undertaking collaborative scientific research. The convergence of security and economic interests, reinforced by intensifying strategic competition in the Indo-Pacific,[40] underscores the need for practical, outcome-oriented initiatives.

Although ASEAN and India have established a comprehensive normative framework for maritime engagement, implementation has yet to keep pace with ambition. The next phase of the partnership must therefore focus on translating shared principles into concrete, time-bound programmes that deliver measurable outcomes for regional security, sustainable development, and shared prosperity. The issue, therefore, is to move beyond fragmented national initiatives towards creating trusted regional value chains supported by resilient connectivity.

14.4.1. ASEAN-India Blue Economy Collaboration

The Blue Economy has emerged as one of the most promising pillars of ASEAN-India cooperation because it combines economic growth with sustainable management of marine resources. The Blue Economy should also be recognised as a strategic instrument for supply-chain diversification in an increasingly uncertain geopolitical environment. As global production networks become more distributed, maritime industries will play a central role in ensuring resilient trade and secure access to critical resources. The Blue Economy,[41] collaboration agenda mentioned in the Annex to the PoA (2021-25) focuses on the sustainable development of ocean resources, the reduction of marine debris, fisheries and agriculture, amongst others[42].

14.4.1.1. ASEAN Policy on Blue Economy

ASEAN has progressively institutionalised the Blue Economy as a central pillar of regional cooperation through a series of policy initiatives. The ASEAN Leaders' Declaration on the Blue Economy (2021)[43] noted the 'emerging significance of the Blue Economy' and called for 'developing a regional action plan' to promote sustainable and inclusive ocean-based development. Building on this political commitment, the ASEAN Blue Economy Framework (2023)[44] established the Blue Economy as a new engine of regional growth, which accorded priority "to facilitate value creation, resilience, inclusivity, and sustainability. The Framework also advances the 'ASEAN ambition to develop an inclusive, equitable, and sustainable blue economy, making the region a significant contributor to economic growth and prosperity'. These priorities are further operationalised through the ASEAN Blue Economy Implementation Plan (2026-2030)[45], which "aims to guide ASEAN Member States (AMS) in harnessing the full potential of the Blue Economy as a driver of inclusive, sustainable, and resilient growth". It is "structured around five cross-cutting 'Blue outcomes' which provide the foundation for identifying broad, integrative activities and supporting initiatives that reflect the ambition of the Blue Economy to promote regional coherence and collaboration. The outcomes focus on growing financial, physical, natural, human, and social capital to achieve the overall vision of ASEAN Blue Wealth".

14.4.1.2. India's Blue Economy Policy

India has prepared a draft Blue Economy Policy[46]. It stated, "India's Blue Economy can be defined as a subset of the national economy comprising the entire system of ocean resources and man-made economic infrastructure in marine, maritime and the onshore coastal zones within India's legal jurisdiction, which aid in the production of goods and services and have clear linkages with economic growth, environmental sustainability and national

security." Though the policy is awaiting formal approval before promulgation, other documents, such as the Maritime India Vision 2030[47] and the Maritime Amrit Kaal Vision 2047[48] introduce many elements of the Blue Economy as "policy". It "recognizes the vital importance of the Blue Economy as one of the fundamental pillars of economic growth. It also outlines a roadmap for sustainable development related to oceans, rivers and coastal regions, while also focusing on equity, inclusivity and innovation"[49].

14.4.1.3. ASEAN - India Blue Economy Roadmap

Despite the importance attached to the Blue Economy both in India and ASEAN, as well as convergence between the ASEAN Blue Economy Framework, the AOIP and the IPOI, a Joint ASEAN - India Blue Economy Roadmap is considered necessary for creating a common maritime economic architecture that links governments, industry, academia, and financial institutions. Such an approach would transform the regional Blue Economy from a collection of sectoral initiatives into a comprehensive and inclusive framework for sustainable, equitable and inclusive regional prosperity. Given the strategic importance of the maritime economy to both partners, this roadmap would provide an institutional mechanism for translating visionary political commitments into practical coordinated programmes covering all aspects and related activities of the Blue Economy, particularly focusing on sustainable fisheries, maritime connectivity, shipbuilding, marine technology, ocean science, blue finance, and resilient coastal infrastructure.

14.4.2. Collaboration on Ocean Governance

14.4.2.1. Ocean Health and the Indo-Pacific Economy

As the world is increasingly challenged by the impact of climate change and global warming, many of its solutions are to be found in our oceans. Every second breath we take, we owe it to our oceans. The oceans provide critical ecosystem services such as carbon storage and oxygen generation, and products such as energy, food, and salt, apart from their central role in climate regulation. More than ninety per cent of the excess heat generated by global warming is absorbed by the oceans, with visible detrimental impacts on sea-level rise, marine biodiversity, fisheries, and coastal communities. However, these "oceanic public goods" are under increasing threat due to overexploitation of marine genetic resources, increasing marine pollution, unplanned mariculture, irresponsible marine tourism, indiscriminate wind farms, offshore infrastructure, wanton port expansion, offshore exploration, etc., leading to the creation of "ocean slums".

Marine pollution presents another area for collective action. Plastic waste, fertiliser runoff, agro-pesticides, hazardous chemicals and even abandoned fishing gear do not recognise man-made maritime boundaries. Increasingly, the world community believes this is a present and growing threat to energy, food, and climate security, which can have a downstream impact on migration, livelihoods, and eventually conflict between nations and, finally, on all of mankind. Ultimately, ocean health is no longer solely an environmental concern, but it has now assumed the contours of economic resilience, food security, and regional stability. Investing together in healthy oceans is, therefore, an investment for the long-term prosperity and security of the Indo-Pacific.

The oceans should, therefore, become the central platform for ASEAN-India environmental collaboration. Coordinated regional approaches to waste management, circular economy practices, and sustainable fisheries management would deliver both environmental and economic benefits. Such engagement can begin with strengthening scientific collaboration in ocean observation systems, climate modelling, marine biodiversity research, and early warning systems for cyclones, storm surges, and tsunamis. Equally important is the protection and restoration of blue carbon ecosystems such as mangroves, seagrass meadows, and salt marshes,

which not only capture significant quantities of carbon but also provide natural coastal protection against increasingly frequent extreme weather events.

These critical issues directly impact mankind's collective future and remain largely unaddressed in maritime discussions. For ASEAN and India, whose economies and populations are closely tied to the sea, oceans are integral to their existence. Therefore, the safety, security, stability, and sustainability of our oceans cannot be left only to the goodness of humankind and the good sense of nations or the lack of it.

14.4.2.2. Global Maritime Accord

The time is now for mankind to together prepare a Transformational Framework for the governance and administration of the global oceanic commons. A Global Maritime Accord (GMA), under the stewardship of India and ASEAN, can become a beacon of hope for a beleaguered world that sees the exploitation of oceanic public goods for private benefit. The GMA is proposed to be a novel, important, and timely initiative towards mitigating the risks of global warming, climate change, and unsustainable marine production through the judicious and equitable exploitation of oceanic resources in alignment with achieving broad-spectrum human security by leveraging the oceans.

Significantly, COP16[50] reaffirmed the commitment to conserve at least 30 per cent of coastal and marine areas by 2030, strengthened biodiversity monitoring and reporting frameworks, advanced biodiversity finance, and reinforced the sustainable management of marine and coastal ecosystems. The Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement)[51] marked a significant shift in global ocean governance. Table 14.3 highlights how these two global frameworks can serve as practical drivers of ASEAN-India maritime collaboration.

These recent developments offer a unique opportunity for ASEAN-India maritime collaboration. India and ASEAN could jointly develop regional scientific research programmes, establish interoperable marine biodiversity observation systems, collaborate on blue biotechnology and marine genetic resources, undertake coordinated environmental impact assessments for transboundary maritime activities, and co-design networks of ecologically connected marine protected areas. By jointly implementing the key requirements of this framework for the common good of humanity, ASEAN and India can strengthen regional ocean governance while assuming stewardship in building a resilient, sustainable, and science-driven Indo-Pacific maritime order.

Table 14.3: ASEAN-India Collaboration on Ocean Governance

Agreement	Objective	Relevance for ASEAN-India Collaboration
Kunming-Montreal Global Biodiversity Framework (implemented through CBD COP16)	Implement the global biodiversity framework, including the "30×30" target, biodiversity monitoring, restoration and finance.	Joint marine biodiversity conservation, connected Marine Protected Area (MPA) networks, ocean observation systems, coastal ecosystem restoration, Blue Economy and marine scientific research.
BBNJ Agreement (High Seas Treaty)	Conservation and sustainable use of marine biodiversity beyond national jurisdiction through MPAs, environmental impact assessments, marine genetic resources, capacity building and technology transfer.	Collaborative ocean governance, marine scientific research, blue biotechnology, marine spatial planning, environmental impact assessments, ocean data sharing, capacity building, and development of common regional positions in future BBNJ COP negotiations.

Source: Authors' own

The GMA can become the base framework document for the international community to adopt as its primary mechanism for safe, secure, stable, and sustainable oceans. Hence, to halt and prevent further degradation of the oceans from human activities, a comprehensive GMA to conjoin forces in an organised and systematic manner for the conservation, preservation, protection and sustainable use of marine areas beyond national jurisdiction is necessary.

ASEAN and India, by collaborating on a jointly drafted GMA, a unique pact between oceans and mankind, will have an opportunity to shape emerging global ocean governance by coordinating their positions on biodiversity beyond national jurisdiction, sustainable ocean finance, and marine scientific research.

14.4.3. Case for the BBNJ Secretariat in the Global South

The BBNJ Agreement also presents an opportunity for ASEAN and India to collaborate in strengthening the emerging institutional architecture for global ocean governance. ASEAN and India could work together to support the establishment of an effective, accessible, and representative BBNJ Secretariat that reflects the interests of the Indo-Pacific and the Global South. Given that almost all International Bodies have located their Secretariats in the Global North, it merits consideration that the BBNJ Secretariat be located in the Global South. ASEAN and India could diplomatically collaborate to identify a suitable candidate city for locating the BBNJ Secretariat in the region.

14.4.4. Maritime Technology and Strategic Industry Collaboration

For nearly three decades, ASEAN-India maritime engagement has been characterised by operational cooperation through confidence-building measures, naval exercises, MDA, hydrographic cooperation, search and rescue, HADR, and institutional capacity building. Today, however, the maritime domain is being transformed by digitalisation, artificial intelligence, autonomous systems, satellite-enabled surveillance, smart ports, advanced shipbuilding, and offshore renewable energy.

The next phase of the partnership should position ASEAN and India as co-developers of regional maritime solutions and innovation ecosystems that will shape the future of the Indo-Pacific. India's strengths in software engineering, digital public infrastructure (DPI), artificial intelligence, space technologies, and maritime analytics complement ASEAN's capabilities in advanced manufacturing, electronics, maritime logistics, and industrial production.

Collaborative initiatives could include smart ports, maritime cybersecurity platforms, autonomous navigation systems, digital logistics corridors, predictive maintenance technologies, marine data platforms, and green shipping solutions. Such partnerships would strengthen supply-chain resilience, promote technological self-reliance, and reduce dependence on extra-regional technology providers. These would build joint capabilities, shared institutions, and pooled innovation ecosystems that will provide the underlay for the next generation of maritime industries.

Shipbuilding is perhaps the most compelling opportunity for collaboration. India's share of global shipbuilding is only 0.06 per cent, placing it at the 18th position in shipbuilding rankings, whereas three ASEAN states (South Korea, Vietnam and the Philippines) are placed in the top 6 shipbuilding nations[52]. As global demand grows for low-emission vessels, offshore support ships, autonomous surface vessels, research platforms, and specialised maritime infrastructure, ASEAN and India can build complementary industrial capabilities through joint design, co-development, co-production, and technology transfer rather than competing for the same markets. Universities, research institutions, classification societies, start-ups, and private industry should be integrated into collaborative innovation networks that accelerate research, demonstration

projects, skills development, and commercialisation across the maritime sector.

Ultimately, maritime technology should not be viewed solely through a commercial or industrial lens. It is increasingly a strategic enabler of economic competitiveness, environmental sustainability, maritime security, and regional resilience. By moving beyond technology cooperation towards a more integrated technological collaboration, ASEAN and India can jointly create trusted maritime capabilities, resilient industrial ecosystems, and shared innovation platforms that strengthen both strategic autonomy and regional prosperity. The avenues to institutionalise maritime industrial collaboration are discussed as follows:

14.4.4.1. ASEAN-India Maritime Innovation Collaboration Initiative

Such an initiative would be a state-backed program that could be jointly developed by the ASEAN Secretariat working with the think tanks of the member countries. The elements of such a program could include, firstly to identify generation after next blue economy technologies notably oriented towards sustainability, reliability, and resilience. Secondly, co-design, co-development and co-production of innovative blue economy products and services that could be led by each Member State, and finally set up a special fund to support such innovations to grow in scope, scale and size for the benefit of all parties.

14.4.4.2. ASEAN-India Maritime Industrial Collaboration Initiative

This initiative is proposed to be led by the captains of industry on both sides. The aim would be to create opportunities, leads and prospects for encouraging, facilitating and promoting maritime industry 4.0 within the ASEAN-India maritime industrial collaboration framework. It would structure mechanisms to encourage larger industrial participation/investment in the regional maritime manufacturing ecosystem, by sharing technology, systems and processes for the common good of the region.

14.4.5. Maritime Collaboration on Security

Maritime security is a broad term encompassing the measures, policies, and practices adopted to combat threats to maritime interests. Maritime security and the Blue Economy evolve and develop in an interdependent manner. Maritime security provides the underlay for the Blue Economy, for example, through securing freedom of navigation and overflight, providing safe navigation and safety of the merchant marine fleet, sharing weather and oceanographic information with industries, and protecting assets and resources within the jurisdictional zones of its maritime arena. As the Blue Economy evolves, there is a natural requirement for greater demand for maritime security, which triggers investment and growth in the induction of appropriate capabilities. It is, therefore, vital that India and ASEAN balance these diverse issues to derive the maximum benefit from the maritime domain.

The enhanced and increasingly diverse role that maritime security will continue to play in the Blue Economy can be seen across all sectors in the Indo-Pacific arena. However, the oceans become a source of concern as non-state and state actors use the oceans in manners that impinge upon the safety of crew and cargo, the security of SLOCs, blocking of straits and passages that challenges the sovereign rights of nations for freedom of navigation and overflight, etc. These cause turbulence in maritime affairs that test political stability in the region. To preserve, protect and promote the sustainable use of the ocean spaces and support the precepts and principles of the Blue Economy Model of socio-economic development requires apex-level collaboration, contribution and cooperation from all stakeholders.

14.4.5.1. Baseline Requirements for Maritime Security and Safety

A combination of shared space, surface and seabed surveillance systems, supported by high-speed rapid response platforms such as interceptor crafts, hovercrafts and seaplanes is required to ensure that

the oceans are not degraded by miscreants and criminals. None of these platforms are built at scale in the region though India can build hovercrafts.

14.4.5.2. Surveillance Mechanisms

In the context of developing a robust MDA architecture, there is a strong case for collaboration in developing and deploying an India-ASEAN equatorial orbit satellite system, Long Range Identification and Tracking systems, and widespread application of Automated Identification Systems for Dark Vessel tracking and recognition supported with Big DATA and artificial intelligence.

14.4.5.3. Seaplanes

The region is well suited for seaplane operations. These aircraft combine surveillance with response in one platform and offer a unique capability for MDA, SAR, HADR, logistics support to remote islands, environmental monitoring, and law enforcement. Such a platform would be highly useful for implementing the COP 16 and the BBNJ provisions. Given the archipelagic geography of Southeast Asia and India's extensive island territories, collaborative development, acquisition, production, training, and operational employment of amphibious aircraft could become an important new area of ASEAN-India maritime collaboration. India had earlier evinced interest in the Japanese US-2 amphibian aircraft for maritime safety and security operations in the entire IOR, although its acquisition did not materialise owing to its high capital cost. A future India-Japan-ASEAN collaboration on amphibious aircraft would fit naturally within the broader theme of moving from maritime cooperation to maritime collaboration by focusing on shared capability development rather than isolated national acquisitions. ASEAN and India could explore collaboration on amphibious aircraft for maritime security and humanitarian assistance.

14.4.5.4. White Shipping Agreements

At the state level, White Shipping Agreements and generation of data-fused common operational pictures shared amongst the relevant security and intelligence agencies would require the combined resources and strengths of nations working together for a common sustainable, safe, secure and stable future.

Towards institutionalising the above concepts for developing a structured maritime security collaboration mechanism, the following is proposed.

14.5. Recommendations

14.5.1. Maritime Automated Routing and Reporting System (MARRS)

MARSS is conceived as a structured integration of earth-based information centres, intelligence and surveillance systems, with space-, sea-based and coastal sensors to create a composite picture of all activities in the common ocean spaces of interest. It is designed to identify and track all vessels in the region and provide early warning of deviations from established ocean routes. Leveraging AI algorithms that provide pattern recognition and anomaly detection features, MARSS can thus provide early warning of disruptions in maritime traffic, which will improve the safety of shipping and seafarers, reduce crime at sea, detect IUU fishing, and trace polluting vessels, thus contributing to better ocean governance in the region.

14.5.2. ASEAN-India Maritime Policy Coordination Mechanism

To strengthen maritime legal cooperation, it is proposed to create an ASEAN -India Maritime Policy Coordination Mechanism to facilitate regular consultations before major international maritime meetings, develop common positions on maritime security and safety, coordinate interventions in negotiations under the IMO, ILO, and UNCLOS frameworks, and promote joint initiatives on emerging issues such as autonomous shipping, maritime cybersecurity, green shipping, and marine environmental governance.

14.5.3. ASEAN-India Cooperation to Address Grey-zone and Hybrid Threats

The rapid digitalisation of the maritime sector has expanded maritime vulnerabilities beyond conventional security challenges to include cyberattacks, GPS interference, AIS spoofing, attacks on critical port infrastructure, offshore energy installations, and subsea communication cables. ASEAN and India could, therefore, move beyond information sharing towards jointly developing cyber resilience frameworks, common technical standards, shared maritime threat intelligence, coordinated incident response mechanisms, and regular joint exercises to strengthen the security and resilience of the Indo-Pacific maritime domain. This would help build regional resilience against grey-zone and hybrid maritime threats

14.5.4. ASEAN-India Institute for HADR Training

Given the frequency and intensity of climate-induced events combined with limited resources available in some of the ASEAN member countries, HADR assumes a critical humanitarian priority for collaboration. India has consistently demonstrated its credentials as a reliable first responder through HADR operations not only in the Indo-Pacific but more recently, through long-range emergency assistance to Venezuela, underscoring its growing capability to support humanitarian missions beyond its immediate neighbourhood. Building on the existing cooperation between India's National Disaster Management Authority (NDMA) and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre), ASEAN and India could collaborate to create an ASEAN-INDIA institute for HADR training at a location to be jointly agreed._

Maritime Administration and Governance Information Collation Systems (MAGIC): ASEAN and India should jointly develop an AI-enabled Maritime Administration and Governance Information Collation (MAGIC) System to support evidence-based maritime governance and data-driven decision-making. MAGIC would seamlessly source and synergistically integrate information from spaceborne and ground-based systems and combine it with open-source intelligence sources. Using advanced multi-source data fusion and Retrieval-Augmented Generation (RAG) technologies, MAGIC converts isolated 'dots of data' into a coherent vector representing the larger operational picture while providing for event or activity related deep dives. Its RAG-based query architecture enables users to retrieve only the most relevant information for a specific operational or policy requirement, converting large volumes of disparate data into concise, evidence-based intelligence while avoiding information overload.

The above-mentioned collaboration opportunities can translate strategic dialogue into shared principles and into tangible outcomes through outcome-driven practical collaboration.

14.6. Conclusion

This chapter argues that the ASEAN-India maritime relationship should evolve from operational and tactical cooperation towards deeper strategic collaboration. Maritime cooperation builds trust, confidence, and mutual understanding through dialogue, coordination, and shared action. Maritime collaboration goes a step further by creating shared capabilities through joint investment, technological innovation, institutional partnerships, and scientific research. While cooperation enables ASEAN and India to respond effectively to contemporary maritime challenges, collaboration, on the other hand, equips them to anticipate, shape, and deal with future challenges and opportunities of the future. As the maritime domain becomes increasingly central to regional security, economic prosperity, environmental sustainability, and technological advancement, the enduring success of this partnership will ultimately be determined by the depth and impact of its collaboration. Such an approach

would elevate this engagement from tactical and operational cooperation to strategic collaboration and coordination.

The institutional foundations for this transition are already in place through the AOIP, IPOI, the ASEAN Blue Economy Framework, the ASEAN-India Comprehensive Strategic Partnership, successive Plans of Action, and India's Act East and MAHASAGAR policies.

India-ASEAN maritime collaboration can truly shape a secure, rules-based, resilient, and sustainable Indo-Pacific maritime order that could generate enduring regional value through shared capabilities, innovation, and co-prosperity.

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15 From Maritime Connectivity to Maritime Corridor Performance: Connectivity Competence in ASEAN–India Cooperation

Ruth Banomyong

15.1. Introduction

Maritime connectivity has become increasingly important for economic integration and regional stability in the Indo-Pacific (Niazi, 2024). Maritime transport remains the backbone of international trade and economic integration. In the case of ASEAN and India, maritime connectivity plays a critical role in facilitating trade, investment, supply chain integration, and broader cooperation across the Indo-Pacific (ASEAN–India Centre [AIC] and Research and Information System for Developing Countries [RIS], 2021).

ASEAN and India are connected by a shared maritime geography centred on the Bay of Bengal and the wider Indo-Pacific. This maritime space supports growing trade, investment, and connectivity between the two regions. As a result, maritime cooperation has become an increasingly important pillar of ASEAN–India relations, supported by initiatives such as the Act East Policy, the ASEAN Outlook on the Indo-Pacific (AOIP), the Indo-Pacific Oceans Initiative (IPOI), and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) (Bhogal, 2018; Rao, 2019).

This chapter examines the transition from connectivity expansion to maritime corridor performance in ASEAN–India cooperation. Although considerable progress has been made in improving maritime connectivity, infrastructure alone does not guarantee economic integration, resilience, or efficiency. The chapter argues that future cooperation should focus on enhancing the performance of maritime corridors and the capabilities required to support them.

ASEAN–India relations have deepened considerably over the past three decades. Alongside growing trade and investment ties, maritime cooperation has emerged as an important area of collaboration, particularly in relation to connectivity, supply chains, and regional development (AIC and RIS, 2021). The ASEAN Outlook on the Indo-Pacific (AOIP) and the Indo-Pacific Oceans Initiative (IPOI) provide complementary frameworks for supporting this cooperation.

Existing literature and policy initiatives generally view connectivity as a driver of economic integration. As a result, considerable attention has been devoted to developing transport infrastructure, ports, shipping services, and regional corridors connecting India and ASEAN (Negara, 2012; Bhogal, 2018). Initiatives such as BIMSTEC, the India–Myanmar–Thailand Trilateral Highway, and the Mekong–India Economic Corridor illustrate this emphasis on connectivity expansion.

However, connectivity should not be viewed as an end in itself. Recent disruptions, including the COVID-19 pandemic, geopolitical tensions, and the Red Sea crisis, have shown that physical infrastructure alone cannot guarantee efficient and resilient supply chains. The challenge is no longer simply to create connectivity, but to ensure that it performs effectively. Consequently, future regional integration will depend increasingly on resilience, interoperability, digitalisation, and logistics performance rather than infrastructure expansion alone (Banomyong, 2025).

The challenge facing ASEAN–India maritime cooperation is no longer simply one of connectivity expansion. The more important question is whether existing connectivity can deliver reliable, resilient, and efficient outcomes. Achieving this requires a greater focus on the operational capabilities that underpin maritime corridor performance.

This chapter therefore introduces the concept of connectivity competence. Connectivity competence refers to the institutional and operational capabilities required to transform connectivity into effective corridor performance. It is built upon three pillars: performance transparency, functional interoperability, and maritime–hinterland integration. The concept shifts attention from the provision of infrastructure towards the capabilities needed to ensure that connectivity systems operate efficiently, reliably, and resiliently. In short, infrastructure creates connectivity, while competence creates performance.

The chapter first reviews the evolution of ASEAN–India maritime relations and assesses recent trends in maritime connectivity. It then examines how maritime corridors contribute to economic integration before introducing connectivity competence as a framework for improving corridor performance. Finally, it proposes an ASEAN–India Maritime Corridor Initiative (AIMCI) to support more effective and resilient maritime cooperation.

15.2. ASEAN–India Maritime Relations: From Strategic Partnership to Maritime Cooperation

The development of ASEAN–India maritime relations reflects the broader deepening of ties between South and Southeast Asia. Maritime cooperation has evolved from a supporting element of economic engagement into an important area of strategic collaboration. Although ASEAN and India have established a range of frameworks to support cooperation, future progress will depend on their ability to translate these commitments into tangible outcomes.

15.2.1. Historical Evolution of ASEAN–India Maritime Relations

The Look East Policy, introduced in the early 1990s, marked a significant shift in India's engagement with Southeast Asia. ASEAN was identified as a key partner for strengthening economic cooperation and expanding India's links with the wider Asian region. The policy laid the foundation for the deeper ASEAN–India relationship that developed over the following decades (Bhogal, 2018).

The introduction of the Act East Policy in 2014 marked a broadening of India's engagement with ASEAN. Beyond economic cooperation, the policy emphasised connectivity, maritime cooperation, and strategic engagement, reflecting the growing importance of the Indo-Pacific in regional affairs (Rao, 2019).

The elevation of ASEAN–India relations to a Comprehensive Strategic Partnership in 2022 reflected the growing importance of cooperation beyond trade and investment. Connectivity, maritime cooperation, supply chain resilience, and economic integration have become increasingly important areas of engagement. The partnership provides an institutional foundation for advancing these priorities (AIC-RIS, 2021).

15.2.2. Maritime Cooperation in the Indo-Pacific Context

The emergence of the Indo-Pacific as a strategic construct has further strengthened the maritime dimension of ASEAN–India relations. Both ASEAN and India recognise that the Indian and Pacific Oceans are increasingly interconnected through trade, investment, logistics networks, and security challenges. Consequently, maritime cooperation has become an important component of regional stability and economic development (AIC-RIS, 2021; Niazi, 2024).

ASEAN's response to evolving regional dynamics is articulated through the ASEAN Outlook on the Indo-Pacific (AOIP), which emphasises inclusivity, dialogue, cooperation, connectivity, sustainable development, and ASEAN centrality (ASEAN, 2019). Rather than promoting exclusive geopolitical alignments, the AOIP seeks to strengthen practical cooperation in areas such as maritime cooperation, connectivity, sustainable development, and economic integration. The AOIP therefore provides an important framework through which ASEAN–India maritime cooperation can be advanced (ASEAN, 2019; RIS, 2026).

India's Indo-Pacific Oceans Initiative (IPOI), launched in 2019, complements many of the objectives contained within the AOIP (Government of India, 2019). The IPOI focuses on maritime security, maritime ecology, maritime resources, disaster risk reduction, science and technology cooperation, trade connectivity, and capacity building. Recent efforts to align the AOIP and IPOI demonstrate growing recognition that ASEAN and India share common interests in promoting maritime stability, connectivity, and sustainable development throughout the Indo-Pacific region (RIS, 2026). More importantly, the AOIP–IPOI dialogue has increasingly shifted attention from strategic declarations towards practical cooperation and implementation.

At the subregional level, BIMSTEC occupies an important position within ASEAN–India maritime cooperation. Situated at the intersection of South and Southeast Asia, BIMSTEC provides a platform for strengthening economic integration and connectivity across the Bay of Bengal. Transport connectivity, logistics facilitation, maritime transport, and multimodal corridor development have become central priorities within the BIMSTEC agenda (Yhome, 2017). However, despite strong political support, implementation challenges continue to constrain progress, highlighting the need for stronger institutional coordination and operational capabilities (Yhome, 2017).

15.2.3. Maritime Security Cooperation

Maritime security has emerged as another important pillar of ASEAN–India cooperation. Shared concerns regarding maritime safety, piracy, illegal fishing, transnational crime, humanitarian emergencies, and the protection of sea lines of communication have encouraged greater collaboration between ASEAN member states and India (AIC and RIS, 2021; Niazi, 2024).

Cooperation has expanded in areas such as maritime domain awareness, information sharing, naval diplomacy, coast guard engagement, and capacity building (Government of India, 2019; Niazi, 2024). Joint exercises, training programmes, and dialogue mechanisms have contributed to enhanced confidence-building and improved interoperability among maritime agencies. Humanitarian Assistance and Disaster Relief (HADR) cooperation has become particularly important given the vulnerability of the Indo-Pacific region to natural disasters, climate-related events, and humanitarian crises. The experience of the 2004 Indian Ocean tsunami, together with subsequent disaster response operations, has reinforced the importance of coordinated maritime response capabilities across the region (ASEAN, 2019; Government of India, 2019).

Maritime security cooperation has expanded considerably; it remains characterised by varying levels of institutional development and operational capacity across participating countries. As a result,

maritime security cooperation often remains project-based rather than system-based, limiting its contribution to broader maritime corridor resilience (RIS, 2026; Niazi, 2024).

15.2.4. From Institutional Foundations to Operationalisation

The evolution of ASEAN–India maritime relations demonstrates that the institutional foundations for maritime cooperation are already firmly established. Through the Comprehensive Strategic Partnership, the ASEAN Outlook on the Indo-Pacific (AOIP), the Indo-Pacific Oceans Initiative (IPOI), BIMSTEC, and various bilateral and multilateral mechanisms, ASEAN and India possess a broad framework capable of supporting deeper maritime engagement (AIC & RIS, 2021; ASEAN, 2019; Government of India, 2019).

However, the existence of institutional frameworks does not automatically translate into effective maritime cooperation. Despite substantial progress in establishing political commitments and strategic partnerships, implementation remains uneven and fragmented (RIS, 2026; Yhome, 2017). The challenge facing ASEAN–India maritime cooperation is therefore no longer the creation of additional frameworks, but rather the operationalisation of existing commitments. Future cooperation must focus on translating strategic intentions into practical outcomes that improve maritime connectivity, enhance corridor performance, strengthen interoperability, and support resilient regional supply chains.

This challenge provides the rationale for examining the current state of maritime linkages between ASEAN and India, which forms the focus of the next section.

15.3. Maritime Linkages between ASEAN and India

The maritime relationship between ASEAN and India is fundamentally underpinned by shipping connectivity. Maritime transport remains the dominant mode of trade between the two regions, carrying the majority of merchandise trade and supporting participation in regional and global production networks. As ASEAN and India have become increasingly integrated into global supply chains, maritime connectivity has emerged as an important determinant of trade competitiveness, market accessibility, and economic resilience (UNCTAD, 2024).

This section assesses maritime linkages between ASEAN and India using the Liner Shipping Bilateral Connectivity Index (LSBCI) developed by the United Nations Conference on Trade and Development (UNCTAD). The LSBCI measures the strength of maritime connectivity between pairs of countries by capturing the ease with which containers can move through the global liner shipping network. The index incorporates factors such as transshipment requirements, direct shipping connections, service competition, and vessel deployment. Higher LSBCI values indicate stronger maritime connectivity and greater accessibility between two countries (UNCTAD, 2025).

The LSBCI is particularly suitable for this analysis because it measures bilateral maritime connectivity rather than a country's overall integration into global shipping networks. Unlike the Liner Shipping Connectivity Index (LSCI), which assesses national connectivity, the LSBCI directly captures the strength of shipping linkages between India and individual ASEAN member states. The analysis therefore provides insights into how maritime connectivity has evolved between 2020 and 2025 and highlights the extent to which connectivity remains uneven across the region.

15.3.1. Maritime Connectivity Trends between ASEAN and India

Table 15.1 presents India's bilateral liner shipping connectivity with selected ASEAN member states between 2020 and 2025. The LSBCI ranges from 0

Table 15.1: India's Bilateral Liner Shipping Connectivity with ASEAN Member States (LSBCI), 2020–2025

Country	2020	2021	2022	2023	2024	2025
Singapore	0.58	0.60	0.60	0.61	0.64	0.72
Malaysia	0.57	0.58	0.59	0.60	0.62	0.70
Vietnam	0.49	0.50	0.51	0.53	0.56	0.66
Thailand	0.49	0.50	0.50	0.51	0.54	0.56
Indonesia	0.40	0.32	0.32	0.50	0.43	0.44
Philippines	0.36	0.36	0.36	0.38	0.39	0.40
Myanmar	0.24	0.23	0.22	0.23	0.24	0.30
Cambodia	0.22	0.23	0.22	0.23	0.24	0.25
Brunei Darussalam	0.21	0.20	0.21	0.21	0.22	0.20

Source: Author's compilation based on United Nations Conference on Trade and Development (UNCTAD) UNCTAD Stat database, Liner Shipping Bilateral Connectivity Index (LSBCI), 2025.

to 1, with higher values indicating stronger maritime connectivity between two countries. Higher scores generally reflect more direct shipping services, fewer transshipments, and stronger integration within global liner shipping networks (UNCTAD, 2025). As a result, countries with higher LSBCI scores tend to enjoy better maritime accessibility and more efficient shipping connections.

Although the LSBCI does not have explicit threshold values, scores above 0.60 generally indicate relatively strong bilateral maritime connectivity, reflecting extensive shipping services and integration into major liner shipping networks. Scores between 0.40 and 0.60 suggest moderate connectivity, while scores below 0.30 indicate relatively weak maritime linkages characterised by fewer direct connections and greater dependence on transshipment services. The index should therefore be interpreted comparatively rather than as an absolute measure of performance.

The data in Table 15.1 reveal a general strengthening of maritime connectivity between India and ASEAN over the period under review. With the exception of Brunei Darussalam, all ASEAN member states recorded improvements in bilateral connectivity with India between 2020 and 2025. This trend suggests that maritime integration between India and ASEAN has continued to deepen despite disruptions associated with the COVID-19 pandemic and broader geopolitical uncertainties.

The results suggest the existence of three tiers of ASEAN–India maritime connectivity: a highly connected tier comprising Singapore, Malaysia, and Vietnam; an intermediate tier comprising Thailand, Indonesia, and the Philippines; and a lower-connectivity tier consisting of Myanmar, Cambodia, and Brunei Darussalam.

15.3.1.1. Strongest Maritime Linkages

The strongest maritime linkages are observed between India and Singapore, Malaysia, and Vietnam. In 2025, Singapore recorded the highest LSBCI score (0.72), closely followed by Malaysia (0.70) and Vietnam (0.66). These findings reflect the central role of Southeast Asia's major maritime hubs within regional and global liner shipping networks.

Singapore's position is unsurprising given its role as the leading transshipment hub in Asia and a key gateway linking the Indian Ocean with East Asian and global shipping routes. Similarly, Malaysia's strong connectivity reflects the importance of Port Klang

and Tanjung Pelepas as major transshipment and gateway ports serving both regional and long-haul shipping services. Together, Singapore and Malaysia illustrate the continued importance of hub-and-spoke shipping networks in shaping ASEAN–India maritime connectivity. A significant proportion of maritime trade between India and ASEAN continues to rely on these established regional gateways.

The emergence of Vietnam as India's third most connected ASEAN maritime partner is particularly noteworthy. Between 2020 and 2025, Vietnam recorded the largest increase in connectivity among ASEAN member states, rising from 0.49 to 0.66. This development reflects broader shifts in regional production networks and supply chain geography. As multinational firms diversify manufacturing activities beyond China, Vietnam has become an increasingly important production and export platform, generating stronger trade and shipping linkages with India. The growth in connectivity also reflects the increasing economic significance of the Mekong region and the expanding role of Vietnam within regional value chains.

More broadly, the findings suggest that ASEAN–India maritime connectivity is increasingly shaped by two complementary dynamics. The first is the continued dominance of established maritime hubs such as Singapore and Malaysia. The second is the growing importance of emerging manufacturing and supply chain centres such as Vietnam. This indicates that future ASEAN–India maritime cooperation will depend not only on traditional gateway ports but also on the ability to integrate new production centres into regional maritime and logistics networks.

15.3.1.2. Emerging Maritime Linkages

Thailand and Indonesia represent a second tier of ASEAN–India maritime connectivity. Thailand's connectivity improved from 0.49 in 2020 to 0.56 in 2025, while Indonesia recorded a more modest increase from 0.40 to 0.44 over the same period. Although both countries maintain important economic and strategic relationships with India, their maritime connectivity remains below that of Singapore, Malaysia, and Vietnam.

Thailand's position is particularly noteworthy given its central role in several regional connectivity initiatives, including BIMSTEC, the India–Myanmar–Thailand Trilateral Highway, and broader Mekong cooperation frameworks. Thailand also occupies a strategic geographic position linking mainland Southeast Asia with the Indian Ocean through both maritime and land-based transport networks. Despite these advantages, the growth in maritime connectivity between India and Thailand has been relatively modest compared with Viet Nam. This suggests that strong political relationships and participation in regional connectivity initiatives do not automatically translate into stronger maritime transport linkages. It also highlights the continuing dominance of established maritime hubs and shipping networks in shaping regional connectivity patterns.

The relatively slower growth in India–Thailand connectivity may also reflect the fact that many ASEAN–India maritime flows continue to be routed through major transshipment hubs such as Singapore and Malaysia rather than through direct shipping services. Consequently, Thailand's strategic importance within regional connectivity frameworks is not yet fully reflected in bilateral maritime connectivity indicators. This observation reinforces the distinction between connectivity initiatives and connectivity outcomes that underpins the broader argument of this chapter.

Indonesia's relatively moderate performance is equally noteworthy. As the largest economy in ASEAN and the world's largest archipelagic state, Indonesia occupies a strategic position along some of the most important maritime routes connecting the Indian and Pacific Oceans. Yet maritime connectivity between India and Indonesia remains only moderate when compared with Singapore, Malaysia, and Vietnam. One explanation may be the geographic dispersion of Indonesia's economic activities across a vast archipelago, which can dilute

the concentration of shipping services observed in major regional hub economies. Another explanation is that India–Indonesia maritime trade remains less integrated into regional manufacturing and supply chain networks than the rapidly expanding India–Viet Nam relationship.

At the same time, Indonesia represents one of the most significant opportunities for future ASEAN–India maritime cooperation. The strategic location of the Andaman Sea, the Malacca Strait, and the eastern Indian Ocean creates natural opportunities for strengthening maritime linkages between the two countries. Enhanced cooperation in port development, maritime logistics, coastal shipping, and supply chain integration could contribute to stronger connectivity and support the emergence of new maritime corridors linking South and Southeast Asia.

Taken together, the experiences of Thailand and Indonesia suggest that geographic proximity and political cooperation alone are insufficient to generate strong maritime connectivity. The effectiveness of maritime linkages depends on the extent to which shipping networks, logistics systems, production networks, and trade flows become integrated. This finding further reinforces the need to move beyond connectivity expansion towards a broader focus on maritime corridor development and performance.

15.3.1.3. Weak Maritime Linkages

The weakest maritime linkages are observed between India and Myanmar, Cambodia, and Brunei Darussalam. Although Myanmar's connectivity improved from 0.24 in 2020 to 0.30 in 2025, overall connectivity remains comparatively low. Cambodia and Brunei Darussalam similarly maintain relatively weak maritime connections with India, recording LSBCI scores of 0.25 and 0.20 respectively in 2025.

These findings are significant because they highlight the uneven nature of ASEAN–India maritime integration. While some countries benefit from extensive shipping services and strong connections to global liner shipping networks, others remain relatively peripheral to regional maritime flows. The existence of such disparities raises important questions regarding the extent to which regional connectivity initiatives generate broad-based benefits across ASEAN.

Myanmar presents a particularly interesting case. Despite occupying a strategic geographic position between South and Southeast Asia and serving as a key component of India's Act East Policy, BIMSTEC, and the India–Myanmar–Thailand connectivity framework, maritime connectivity with India remains relatively weak. Political instability, infrastructure constraints, limited port development, and wider economic challenges have constrained the development of maritime transport linkages. The findings suggest that geographic proximity and strategic importance alone are insufficient to generate strong maritime connectivity when institutional and operational constraints remain unresolved.

Cambodia's relatively low connectivity can partly be explained by its limited role within regional maritime shipping networks. Much of Cambodia's international trade continues to rely on regional gateway ports and transshipment services, particularly through neighbouring countries. As a result, direct maritime connectivity with India remains relatively underdeveloped despite growing economic relations between the two countries.

Brunei Darussalam's low connectivity reflects the structure and scale of its economy. Brunei is a small, resource-based economy with relatively limited containerised trade volumes, Brunei naturally attracts fewer liner shipping services than larger ASEAN economies. Consequently, maritime trade between India and Brunei remains dependent on indirect shipping connections and regional transshipment hubs.

Taken together, the experiences of Myanmar, Cambodia, and Brunei illustrate that maritime connectivity is not distributed evenly across ASEAN.

The benefits of regional shipping networks tend to concentrate around major hubs, gateway ports, and manufacturing centres, while smaller or less integrated economies remain dependent on indirect connections. This pattern reinforces the hub-centric nature of ASEAN–India maritime connectivity and suggests that improvements in regional connectivity do not automatically translate into more balanced integration across all ASEAN member states.

More importantly, the findings highlight a broader policy challenge. Expanding maritime connectivity at the regional level does not necessarily ensure that all countries benefit equally from that connectivity. Future ASEAN–India cooperation must therefore consider not only how to strengthen overall connectivity, but also how to improve access, integration, and participation for countries that remain relatively peripheral to regional maritime networks.

15.3.2 Connectivity Expansion and Its Limitations

The LSBCI evidence demonstrates that maritime connectivity between ASEAN and India has improved between 2020 and 2025. However, the findings reveal that connectivity remains both uneven and highly concentrated. The strongest linkages are associated with major maritime hubs and manufacturing centres, while several ASEAN member states continue to maintain relatively weak shipping connections with India. This suggests that maritime connectivity is shaped not only by geography or political cooperation, but also by the concentration of trade, logistics capabilities, and shipping services.

The findings also indicate that stronger connectivity does not necessarily imply deeper economic integration. While Singapore, Malaysia, and Viet Nam benefit from increasingly dense shipping networks, connectivity alone does not guarantee efficient logistics systems, seamless border procedures, or resilient supply chains. Maritime connectivity should therefore be viewed as a necessary but insufficient condition for broader economic integration.

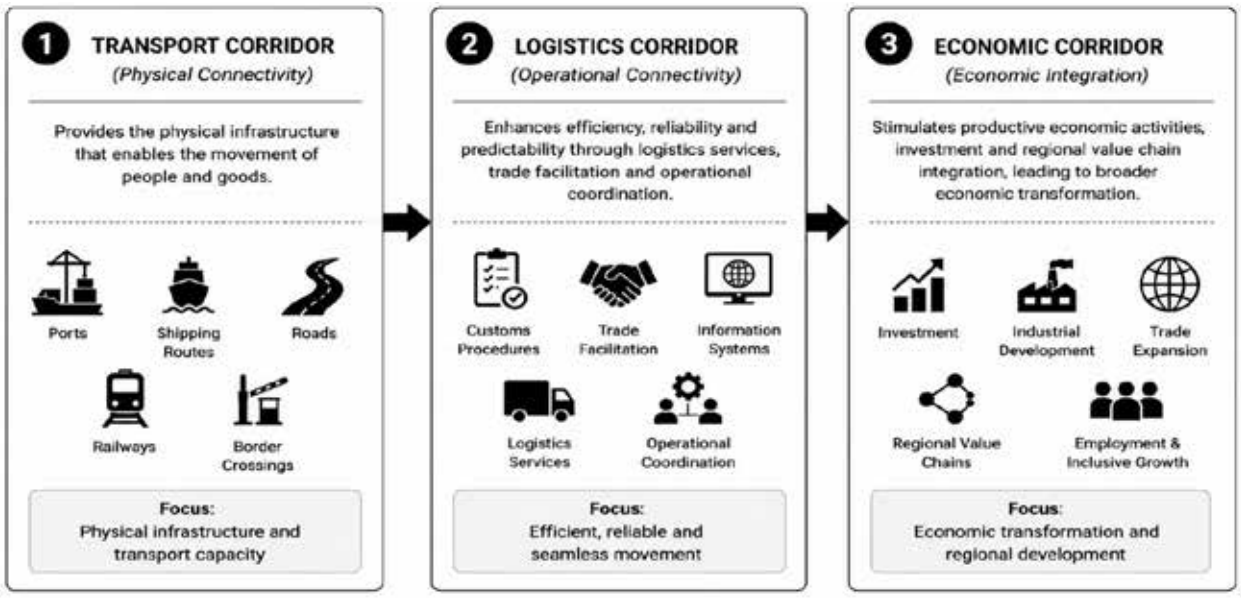
More importantly, the results highlight the distinction between connectivity and performance. The existence of shipping connections does not reveal how effectively maritime corridors function or how efficiently goods move between origins and destinations. Understanding this distinction requires a broader corridor perspective that considers institutions, logistics systems, and governance arrangements alongside physical connectivity. This forms the focus of the next section.

15.4. Maritime Corridors: From Connectivity to Economic Integration

The analysis of maritime linkages in the previous section demonstrates that connectivity between India and ASEAN has strengthened over time. However, stronger maritime connectivity alone does not necessarily translate into greater economic integration, improved supply chain performance, or broader developmental outcomes. While connectivity may facilitate the movement of goods between locations, the extent to which these flows generate economic value depends on the existence of supporting institutions, logistics systems, governance mechanisms, and productive economic activities. Consequently, connectivity should be viewed not as an end in itself but as a means of facilitating broader economic integration.

This distinction is particularly important in the context of ASEAN–India maritime cooperation. Much of the policy discourse surrounding regional connectivity has focused on infrastructure development, transport links, and the expansion of shipping services. While these initiatives are necessary, they are insufficient to generate sustainable economic benefits unless they are embedded within broader corridor development strategies. The challenge therefore lies in transforming connectivity into economic integration through the development of effective maritime corridors.

Figure 15.1: From Transport Corridors to Economic Corridors



Source: Adapted from Banomyong (2012)

15.4.1. From Transport Corridors to Economic Corridors

The relationship between connectivity and economic integration can be understood through a corridor development framework that distinguishes between transport corridors, logistics corridors, and economic corridors (Banomyong, 2012). As illustrated in Figure 15.1, corridor development involves a progression from physical connectivity to operational connectivity and ultimately to economic integration.

A transport corridor provides the physical infrastructure required for the movement of goods and people. A logistics corridor extends this foundation through trade facilitation, logistics services, customs procedures, and operational coordination that improve the efficiency and reliability of supply chains. An economic corridor emerges when improved connectivity and logistics performance stimulate investment, industrial development, and regional value chain integration.

The distinction is important because infrastructure alone does not guarantee economic outcomes. Many connectivity initiatives succeed in creating transport corridors but fail to develop the logistics systems and institutional arrangements necessary to generate broader economic benefits. This challenge is particularly relevant to ASEAN–India maritime cooperation, where stronger connectivity must be complemented by improvements in corridor performance if deeper economic integration is to be achieved.

This corridor framework suggests that maritime connectivity should be assessed not only in terms of transport links but also in terms of its contribution to logistics efficiency and economic integration. From this perspective, the key question is whether ASEAN–India maritime cooperation is creating corridors that facilitate broader economic activity rather than simply improving physical connectivity. The following section examines several emerging maritime corridors to assess their potential contribution to regional integration.

15.4.2. Maritime Corridors as Instruments of Regional Integration

Maritime corridors can be viewed as specialised economic corridors in which ports and shipping networks serve as the principal links between production centres, logistics hubs, and markets (Banomyong, 2012; Banomyong, 2026). Their effectiveness depends not only on maritime transport

infrastructure but also on the integration of shipping services, logistics systems, hinterland connections, and trade facilitation mechanisms.

For ASEAN and India, maritime corridors provide a mechanism for translating connectivity into economic outcomes. The challenge is therefore not simply to strengthen maritime links, but to ensure that these links support efficient logistics systems, resilient supply chains, and broader economic integration.

15.4.2.1. Bay of Bengal Maritime Corridor

The Bay of Bengal occupies a central position within ASEAN–India maritime relations. Situated between South and Southeast Asia, it serves as a critical interface connecting India with Myanmar, Thailand, and the wider ASEAN region. Historically, the Bay of Bengal has facilitated trade and economic interaction, while more recently it has become an important focus of India's Act East Policy and BIMSTEC cooperation (Rao, 2019; Yhome, 2017).

The Bay of Bengal Maritime Corridor possesses significant potential to support regional integration by linking ports, logistics hubs, industrial zones, and emerging supply chains. However, despite its strategic location and growing policy attention, the corridor remains characterised by uneven infrastructure development, varying regulatory regimes, and fragmented governance arrangements (Yhome, 2017). While physical connectivity has improved, the corridor has yet to realise its full economic potential due to persistent operational and institutional constraints.

The Bay of Bengal Maritime Corridor therefore illustrates the distinction between connectivity and corridor performance. The principal challenge is no longer the creation of connectivity, but the ability to coordinate infrastructure, logistics systems, and institutional arrangements across multiple countries. The case suggests that stronger maritime connectivity alone is unlikely to generate deeper economic integration unless accompanied by improvements in corridor governance and operational performance (Banomyong, 2012).

15.4.2.2. The India–Myanmar–Thailand–Mekong Interface

A second corridor of strategic importance is the India–Myanmar–Thailand–Mekong Interface, which links the Bay of Bengal with the economic centres of mainland Southeast Asia. The corridor occupies a strategic position connecting maritime networks in the Indian Ocean with the rapidly developing economies of the Mekong subregion.

The significance of this interface extends beyond transport connectivity. Dang et al. (2022) Mekong–India Economic Corridor (MIEC) was conceived to support such outcomes by integrating transport infrastructure, logistics services, industrial development, and investment promotion (Banomyong, 2012).

However, progress has been slower than anticipated. While transport infrastructure and physical connectivity have improved, institutional coordination, logistics integration, and regulatory harmonisation continue to lag behind. As a result, the corridor has yet to generate the level of economic transformation originally envisaged. The case illustrates a broader lesson for ASEAN–India maritime cooperation: infrastructure development alone is insufficient to create an effective economic corridor. Corridor performance ultimately depends on the ability to align logistics systems, institutions, and governance arrangements across multiple countries (Banomyong, 2012).

15.4.3. Connectivity Alone Is Not Enough

The corridor cases highlight a common lesson: connectivity is a necessary condition for economic integration, but it is not a sufficient one. Infrastructure and shipping services can facilitate movement, yet corridor performance ultimately depends on effective institutions, efficient logistics systems, and appropriate governance arrangements (Banomyong,

2026). The experience of ASEAN–India connectivity initiatives therefore suggests that the challenge is no longer simply to create connectivity, but to ensure that connectivity delivers economic outcomes. This raises a broader question concerning the capabilities required to transform connectivity into performance, which forms the focus of the next section.

Connectivity is a necessary condition for economic integration, but it is not a sufficient one. Infrastructure and shipping services may enable movement, yet the ability of corridors to generate economic value depends on a wider set of institutional, operational, and governance factors.

15.5. Connectivity Competence: Operationalising ASEAN–India Maritime Cooperation

The analysis presented in the previous sections suggests that connectivity alone does not guarantee economic integration, logistics efficiency, or supply chain resilience. Although maritime connectivity between India and ASEAN has improved, significant differences remain in corridor performance and operational effectiveness. Well-connected countries and ports may still experience congestion, delays, fragmented logistics systems, and vulnerability to external disruptions. These observations suggest that connectivity should be viewed as a necessary but insufficient condition for successful maritime cooperation. The critical issue is not simply the existence of connectivity, but the capability of connectivity systems to function effectively in practice.

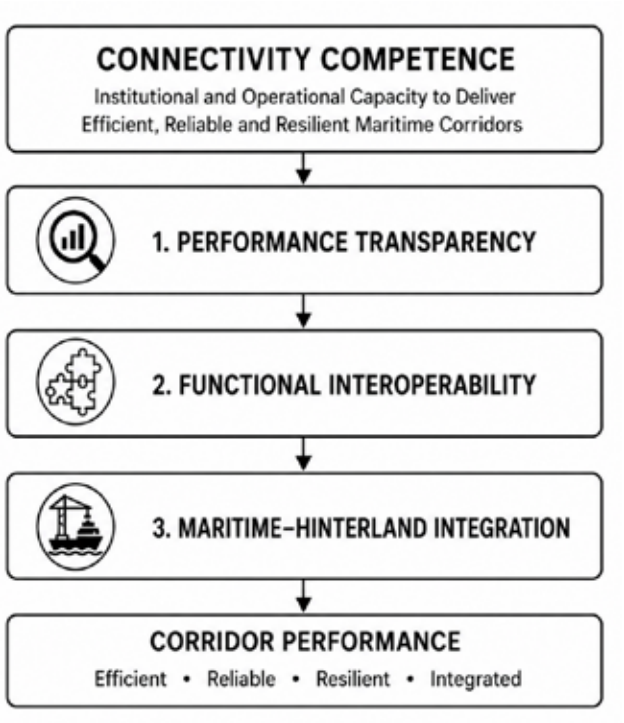
This chapter argues that the answer lies in connectivity competence. Connectivity creates opportunities for interaction, whereas connectivity competence determines whether those opportunities can be converted into reliable, efficient, and resilient outcomes. Future progress in ASEAN–India maritime cooperation therefore depends not only on expanding connectivity, but also on improving the capability of connectivity systems to perform effectively.

15.5.1. Defining Connectivity Competence

This section introduces the concept of connectivity competence, defined as the institutional and operational capacity required to ensure that connectivity systems function efficiently, reliably, and resiliently in support of economic and strategic objectives.

Figure 15.2 presents the conceptual framework of connectivity competence developed in this chapter. The framework argues that the effectiveness of maritime connectivity depends not only on the existence of infrastructure and transport links, but also on the institutional and operational capabilities that enable connectivity systems to function effectively. Connectivity competence is therefore conceptualised as comprising three interrelated pillars: performance transparency, functional interoperability, and maritime–hinterland integration. Together, these pillars contribute to improved corridor performance by enhancing the efficiency, reliability, resilience, and integration of maritime transport and logistics systems.

Figure 15.2: Connectivity Competence Framework



Sources: Authors' own

These three pillars were selected because they address the principal limitations identified in the preceding analysis. Performance transparency addresses the need to measure and monitor connectivity outcomes. Functional interoperability addresses the fragmentation of procedures and systems that constrain corridor efficiency. Maritime–hinterland integration addresses the challenge of translating maritime connectivity into broader economic integration. Together, these dimensions provide a practical framework for improving maritime corridor performance.

15.5.1.1. Pillar One: Performance Transparency

Performance transparency refers to the ability to measure and monitor maritime connectivity and corridor performance. Indicators such as the LSCI, LSBCI, PLSCI, and CPPI enable policymakers to identify bottlenecks, benchmark performance, and support evidence-based decision-making. Transparency encourages a shift in focus from infrastructure provision towards performance outcomes.

The LSBCI analysis demonstrated that maritime connectivity across ASEAN and India is uneven. Measuring such differences is a prerequisite for identifying connectivity gaps and prioritising interventions. Performance transparency enables corridor managers and policymakers to identify bottlenecks, benchmark outcomes, and prioritise interventions. Without measurement, connectivity performance cannot be effectively managed or improved.

15.5.1.2. Pillar Two: Functional Interoperability

Functional interoperability refers to the ability of institutions, systems, and processes to operate seamlessly across organisational and national boundaries. Customs procedures, Port Community Systems, National Single Windows, and digital trade platforms play a critical role in reducing transaction costs and facilitating the efficient movement of goods and information. As maritime logistics becomes increasingly digitalised, interoperability becomes a key determinant of corridor performance. The Bay of Bengal and Mekong corridor cases illustrate that infrastructure investments alone do not guarantee efficient flows when procedures and systems remain fragmented.

15.5.1.3. Pillar Three: Maritime–Hinterland Integration

Maritime–hinterland integration refers to the extent to which ports are connected with inland logistics systems, production networks, and economic activities. Effective integration requires coordination among ports, dry ports, logistics centres, industrial zones, and transport corridors. Guerrero et al. (2026).

The corridor framework presented in Section 15.4 suggests that economic benefits emerge only when maritime gateways are effectively connected with inland logistics and production systems.

15.5.2. Infrastructure Creates Connectivity, Competence Creates Performance

The three pillars of connectivity competence highlight that connectivity alone is insufficient to achieve the objectives of ASEAN–India maritime cooperation. While ports, shipping services, and transport corridors create opportunities for interaction, the benefits of connectivity depend on the ability of institutions, systems, and stakeholders to operate effectively. Performance transparency, functional interoperability, and maritime–hinterland integration therefore represent the core capabilities required to transform connectivity into efficient, reliable, and resilient corridor performance.

The distinction is straightforward: infrastructure creates connectivity, whereas competence creates performance. For ASEAN–India maritime cooperation, the challenge is no longer whether connectivity exists, but whether it can consistently deliver economic and strategic outcomes. Addressing

this challenge requires moving beyond conceptual frameworks towards practical implementation. The next section therefore proposes an ASEAN–India Maritime Corridor Initiative (AIMCI) designed to operationalise connectivity competence through targeted monitoring, interoperability, integration, and resilience measures.

15.6. Towards an ASEAN–India Maritime Corridor Initiative

The preceding analysis suggests that the next phase of ASEAN–India maritime cooperation should focus on improving corridor performance rather than expanding connectivity alone. While maritime connectivity has strengthened over the past decade, significant gaps remain in transparency, interoperability, resilience, and maritime–hinterland integration.

To address these challenges, this chapter proposes an ASEAN–India Maritime Corridor Initiative (AIMCI). Rather than creating new institutions, the AIMCI would build upon existing ASEAN–India, AOIP, IPOI, and BIMSTEC mechanisms to strengthen the operational capabilities required for high-performing maritime corridors.

As shown in Table 15.2, the AIMCI translates the three pillars of connectivity competence into a set of practical initiatives designed to improve corridor performance and support more resilient and integrated maritime cooperation.

15.6.1. Component 1: Maritime Connectivity Monitoring System

Objective: Establish a common evidence base for monitoring ASEAN–India maritime connectivity.

Key Actions

- Develop an annual ASEAN–India Maritime Connectivity Report.
- Monitor maritime connectivity using indicators such as the LSCI, LSBCI, and PLSCI.
- Identify emerging connectivity gaps, underserved routes, and opportunities for network expansion.
- Benchmark maritime connectivity performance across ASEAN member states and India.

Expected Outcome

Improved transparency and evidence-based decision-making regarding maritime connectivity trends and priorities.

Table 15.2: Aligning Connectivity Competence with the ASEAN–India Maritime Corridor Initiative (AIMCI)

Connectivity Competence Pillar	AIMCI Initiative	Expected Outcome
Performance Transparency	Maritime Connectivity Monitoring System	Improved monitoring of maritime connectivity and corridor performance
Performance Transparency	Maritime Corridor Performance Dashboard	Evidence-based policymaking and benchmarking of corridor performance
Functional Interoperability	Port and Logistics Interoperability Programme	Improved coordination among customs, ports, logistics providers, and digital platforms
Maritime–Hinterland Integration	Critical Minerals and Energy Corridor Platform	Stronger integration of maritime corridors with strategic supply chains and inland economic activities
Cross-Cutting Support	Maritime Security and Resilience Cooperation	Enhanced corridor resilience, security, and continuity of maritime trade flows

Source: Authors' own

15.6.2. Component 2: Maritime Corridor Performance Dashboard

Objective: Measure whether improvements in connectivity are translating into better corridor performance.

Key Actions

- Develop a common set of corridor performance indicators.
- Monitor port efficiency, vessel turnaround times, cargo dwell times, corridor transit times, and customs clearance performance.
- Incorporate international benchmarks such as the Container Port Performance Index (CPPI).
- Publish regular corridor performance assessments.

Expected Outcome

A stronger focus on operational performance and improved accountability for corridor outcomes.

15.6.3. Component 3: Port and Logistics Interoperability Programme

Objective: Improve operational coordination across maritime and logistics systems.

Key Actions

- Promote interoperability among National Single Window systems.
- Encourage integration of Port Community Systems (PCS).
- Harmonise digital trade and transport documentation.
- Develop data-sharing protocols among customs authorities, ports, shipping lines, and logistics providers.
- Pilot digital trade corridors linking selected ASEAN and Indian ports.

Expected Outcome

Reduced transaction costs, fewer administrative delays, and more seamless cross-border logistics operations.

15.6.4. Component 4: Strategic Supply Chain Corridor Platform

Objective: Strengthen the resilience of strategic maritime supply chains linking ASEAN and India.

Key Actions

- Map critical mineral and energy supply chains dependent on maritime transport.
- Identify vulnerable maritime routes and logistics nodes.
- Conduct corridor risk assessments and resilience planning exercises.
- Promote information sharing among governments, ports, logistics providers, and industry stakeholders.
- Support coordination of strategic infrastructure investments.

Expected Outcome

More resilient and secure maritime supply chains supporting industrial development and energy transition objectives.

15.6.5. Component 5: Maritime Security and Resilience Cooperation

Objective: Enhance the security and resilience of ASEAN–India maritime corridors.

Key Actions

- Strengthen maritime domain awareness and information-sharing mechanisms.
- Expand cooperation among maritime enforcement agencies and coast guards.
- Conduct joint Humanitarian Assistance and Disaster Relief (HADR) exercises.
- Promote maritime cybersecurity cooperation.
- Develop contingency and disruption-response protocols for key maritime corridors.

Expected Outcome

Greater resilience and continuity of maritime transport operations during security incidents, natural disasters, and other disruptions.

15.6.6. From Connectivity Expansion to Connectivity Competence

Taken together, these five components provide a practical mechanism for operationalising connectivity competence. The AIMCI seeks to move ASEAN–India maritime cooperation from a primary focus on connectivity projects towards a stronger emphasis on corridor performance. Rather than creating new institutions, the initiative builds upon existing ASEAN–India, AOIP, IPOI, and BIMSTEC mechanisms while strengthening the capabilities required to support efficient, reliable, resilient, and integrated maritime corridors.

15.7. Conclusion

This chapter has argued that ASEAN–India maritime cooperation is entering a new phase of development. While significant progress has been made in strengthening maritime connectivity and establishing institutional frameworks for cooperation, connectivity alone is insufficient to deliver resilient and efficient maritime corridors. The central challenge is no longer how to create additional connectivity, but how to improve the performance of existing and emerging connectivity systems. In order to address this challenge, the chapter introduced the concept of connectivity competence, defined as the institutional and operational capacity required to ensure that connectivity systems function efficiently, reliably, and resiliently. Three pillars were identified as critical to improving corridor performance: performance transparency, functional interoperability, and maritime–hinterland integration. Together, these capabilities enable connectivity to generate broader economic and strategic outcomes.

Building upon this framework, the chapter proposed the ASEAN–India Maritime Corridor Initiative (AIMCI) as a practical mechanism for operationalising connectivity competence through enhanced monitoring, interoperability, integration, and resilience cooperation. The broader implication is that ASEAN–India maritime cooperation must move beyond a traditional focus on infrastructure development towards a stronger emphasis on corridor performance. As supply chains become more complex and the Indo-Pacific faces growing geopolitical, economic, and environmental uncertainties, the ability to manage connectivity effectively will become increasingly important. Infrastructure creates connectivity; competence creates performance. The future success of ASEAN–India maritime cooperation will therefore depend on its ability to transform connectivity into capability and capability into sustainable regional prosperity.

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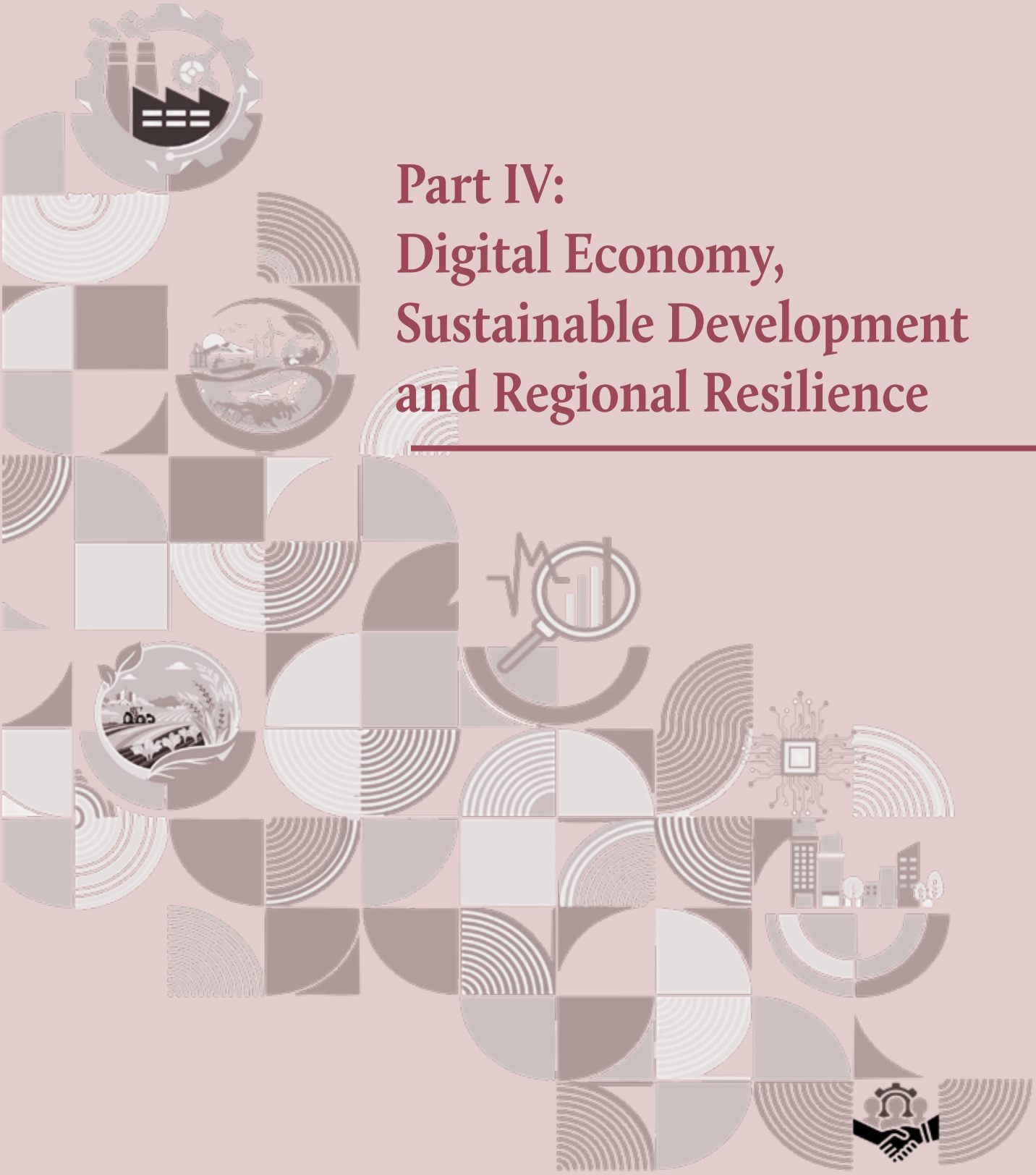
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Part IV:
Digital Economy, Sustainable Development and Regional Resilience



16 Digital and AI-led Transformation in India and ASEAN: Policy Frameworks, Governance Strategies and Sectoral Impacts

Sineenat Sermcheep, Amit Kumar, Sneha Sinha and Alaknanda Mishra

16.1. Introduction

The rapid spread of digital technologies and artificial intelligence (AI) has altered the global developmental landscape, reshaping the character of governance, economic systems and regional cooperation. India and the Association of Southeast Asian Nations (ASEAN) have emerged as key actors in the Indo-Pacific region in advancing digital transformation and AI-driven development through policy innovation, institutional frameworks and technological integration. The India–ASEAN partnership is increasingly at the forefront in the larger discourse on digital cooperation.

India's digital transformation journey has been powered by a combination of state-led policy initiatives, digital public infrastructure, and fast-growing technology ecosystems. Initiatives such as Digital India, Start-up India, Aadhaar, Unified Payments Interface (UPI), Ayushman Bharat Digital Mission (ABDM), and IndiaAI Mission have fundamentally transformed public services, financial systems, digital governance, and innovation networks. India's evolving AI governance framework, including Responsible AI principles and wider digital governance strategies, also reflects the country's effort to strike a balance between technological progress and inclusion, ethics and regulatory accountability. Together, these initiatives make India an important model for digital governance and AI-enabled development amongst emerging economies.

Alongside national digital transformation efforts such as those pursued by India, ASEAN has steadily advanced a regional approach to digital integration and AI governance. Through initiatives such as the Bandar Seri Begawan Roadmap (BSBR), ASEAN Digital Master Plan 2026-2030, and the forthcoming ASEAN Digital Economy Framework Agreement (DEFA), ASEAN seeks to promote interoperable digital systems, cross-border data flows, digital payments, e-commerce, and digital talent development across its member states. The region has also taken important steps in shaping responsible AI adoption through the ASEAN Guide on AI Governance and Ethics, and the ASEAN Responsible AI Roadmap. These initiatives reflect ASEAN's commitments to deeper digital integration and closer regional cooperation on digital and AI governance.

The chapter is framed in the context of the larger India-ASEAN digital cooperation, but the current study is mainly focused on the analysis of India's policy frameworks and sectoral experiences. It looks at how digital technologies and AI are transforming

critical areas such as financial inclusion, the digital economy and trade, banking and fintech, healthcare, education, agriculture, and start-up ecosystems. The chapter seeks to leverage this sector-specific analysis to assess the development impact of India's digital public infrastructure and AI-enabled governance mechanisms in terms of improving efficiency, accessibility, transparency, and economic participation.

The chapter also engages with the wider regional context by briefly placing India's initiatives alongside ASEAN's evolving digital and AI strategies, including frameworks on digital integration and AI governance, and regional connectivity. This contextual approach also helps to shed light on the rising importance of India-ASEAN cooperation in areas such as digital trade, cybersecurity, AI ethics, innovation ecosystems, and capacity building. The study also finds that digital transformation continues to be shaped by persistent challenges related to digital divides, data protection, cybersecurity risks, technological capacity, and institutional readiness.

The chapter contributes to contemporary discussions on digital governance, technological development and inclusive growth in the Global South by focusing on India's digital and AI-led transformation in the broader India-ASEAN context. It argues that the experience of India offers important lessons for developing economies seeking to harness digital technologies and AI as instruments of sustainable and human-centric development.

16.2. Digital and AI Policies, Strategies and Initiatives in India

India's digital and AI policy landscape has evolved into one of the world's most deliberate and layered governance architectures spanning a decade of digital infrastructure built through Digital India, the landmark IndiaAI Mission launched in March 2024 to position India as a global AI leader, and the India AI Governance Guidelines of November 2025 establishing a comprehensive national framework for the safe and responsible deployment of artificial intelligence.

Launched in 2015, the Digital India programme serves as the Government of India's flagship initiative to transform the country into a digitally empowered society and knowledge economy. The programme is built around three core vision areas: digital infrastructure as a utility for every citizen, governance and services on demand, and digital empowerment of citizens.[1] Through initiatives such as Aadhaar-enabled services, Digital Public Infrastructure (DPI), DigiLocker, Unified Payments Interface (UPI), and digital service delivery platforms, Digital India has significantly expanded access to public services and strengthened digital inclusion across sectors[2].

The programme has also supported the development of emerging technologies, including Artificial Intelligence, cloud computing, cybersecurity, and digital skilling, thereby contributing to India's broader digital transformation agenda[3]. Digital India has emerged as a foundational framework for India's digital economy, and a model for digital public infrastructure cooperation with developing countries, including ASEAN partners, by promoting interoperable digital platforms and citizen-centric governance.

A key component of India's digital transformation strategy is Digital Public Infrastructure (DPI), which offers interoperable digital platforms that facilitate safe identity verification, digital payments, and large-scale data interchange. India's DPI model, which is based on platforms like Aadhaar, UPI, DigiLocker, and the Account Aggregator framework, aims to enhance digital governance, financial inclusion, and public service delivery.[4]

In addition to incorporating cutting-edge technology like artificial intelligence to improve service efficiency and creativity, the Indian government has increasingly positioned DPI as a global public benefit and a crucial tool for equitable development.[5] ASEAN member states and other developing economies can learn from DPI, which has been acknowledged by

international organisations as a fundamental layer for digital government and socioeconomic development (OECD, 2024).

The Ayushman Bharat Digital Mission (ABDM), which was introduced in 2021, aims to establish an integrated digital health ecosystem by facilitating the safe, interoperable, and consent-based sharing of medical records across healthcare providers. The Ayushman Bharat Health Account (ABHA), Health Facility Registry, Healthcare Professional Registry, and interoperable electronic health records are among the essential digital pillars upon which the goal is based.[6] ABDM seeks to provide citizens with more control over their health data while enhancing healthcare accessibility, effectiveness, and continuity of service. The mission promotes data-driven healthcare governance and establishes the groundwork for the adoption of cutting-edge technologies, such as artificial intelligence and breakthroughs in digital health, by utilising the principles of digital public infrastructure.

With over 90 crore ABHA IDs created, ABDM, implemented by the National Health Authority under the Ministry of Health and Family Welfare, has achieved a major milestone with over 100 crore health records successfully linked with Ayushman Bharat Health Accounts (ABHA) in May 2026. The achievement marks a significant step towards building an integrated, citizen-centric and interoperable digital healthcare ecosystem in the country. The milestone reflects the growing adoption of ABDM across Government health programmes, State health platforms, public digital systems and private health technology partners. At present, more than 450 public and private health technology solutions have been successfully integrated with the ABDM ecosystem, accelerating the digitisation and seamless exchange of health records across healthcare facilities.[7]

In 2018, NITI Aayog published India's National Strategy for Artificial Intelligence (AI), which aims to use AI for social development, economic change, and inclusive growth. The strategy promotes a responsible and moral approach to AI governance while designating healthcare, agriculture, education, smart mobility, and smart cities as priority industries (NITI Aayog, 2018). Building on this basis, the Indian government has started programme under the India AI Mission to improve AI innovation, research, computing infrastructure, datasets, startup ecosystems, and skilling.[8] The Mission promotes cooperation between government, academia, business, and international partners while emphasising the creation of reliable, inclusive, and human-centered AI. When taken as a whole, these projects establish AI as a major force behind India's digital revolution and its larger goal of a knowledge-based economy.

The goal of India's Responsible AI strategy is to guarantee that AI is created and used in a way that is moral, open, accountable, secure, and inclusive. The framework, which builds on NITI Aayog's AI for All vision, promotes AI-driven innovation for social and economic growth while emphasising security, privacy protection, justice, and the reduction of algorithmic bias (NITI Aayog, 2021).

Recent measures under the IndiaAI Mission have greatly improved responsible AI governance through regulations that emphasise accountability, transparency, dependability, and human oversight[9]. Additionally, India's evolving framework complies with internationally recognised standards that promote robustness, accountability, transparency, and human-centered values in AI systems, such as those promoted by the OECD.[10] By taking these actions, India intends to create a foundation for responsible AI adoption across industries by striking a balance between ethical governance, public trust, and technological innovation (Centre for Responsible AI, n.d.).

In March 2024, the Government of India launched IndiaAI Mission with an outlay of INR 10,372 crore for the development of the overall AI ecosystem in the country, comprising seven pillars viz. IndiaAI Compute Capacity, IndiaAI Innovation Centre, IndiaAI Datasets Platform, IndiaAI Application Development Initiative, IndiaAI FutureSkills, IndiaAI

Startup Financing, and Safe & Trusted AI.[11] In just about two years, the India AI Mission has set up a foundation for the development of an AI ecosystem in the country, with more than 38,000 GPUs for a common compute facility onboarded, which are being provided to Indian start-ups and academia at an affordable rate; more than 8000 undergraduate students, 5000 post graduate students, and 500 PhD students are being supported for talent development; and 27 India Data and AI labs have been established, and 543 more have been identified.[12] The Mission seeks to establish India as a global leader in AI while fostering inclusive digital transformation and economic growth through domestic AI capabilities, public–private cooperation and responsible AI development.

The ideals of ethical, transparent, responsible, and human-centric artificial intelligence are increasingly driving India's AI governance framework. In order to promote the responsible development and implementation of AI systems while addressing issues with safety, privacy, justice, and accountability, the government has established AI Governance Guidelines.[13] The MANAV Vision, articulated by Hon'ble Prime Minister of India Shri Narendra Modi during the India AI Impact Summit 2026[14], underlined that AI should enhance human capacities, protect fundamental rights, and advance equitable socioeconomic growth. The framework promotes a techno-legal governance approach combining stakeholder participation, ethical standards and regulatory monitoring. Together, the AI Governance Guidelines and MANAV Vision balance innovation and risk management, laying the groundwork for India's adoption of AI while advancing more general goals of digital transformation in public service delivery, industry, and governance.

16.3. Digital and AI-led Transformation in India

With the development of strong Digital Public Infrastructure (DPI) combined with enabling policy frameworks and innovation-led ecosystems, India has emerged as a global leader in digital and AI-led transformation. Digital India, IndiaAI Mission, Aadhaar, UPI, and sector-specific digital platforms have fast-tracked inclusive growth in finance, trade, banking, health, education, agriculture, and entrepreneurship. The sectoral evidence of India's digital transformation and its relevance to improving digital cooperation and knowledge sharing with the ASEAN countries is presented in this section.

Due to the rapid growth of digital payment systems and the integration of the Jan Dhan–Aadhaar–Mobile (JAM) trinity, digital financial inclusion has emerged as a key component of India's digital transformation. Jan Dhan bank accounts, cellphone connectivity, and Aadhaar-enabled identification have greatly increased access to formal financial services, especially for previously marginalised groups.[15] The Unified Payments Interface (UPI) has further accelerated financial inclusion by enabling low-cost, real-time digital transactions and supporting the transition towards a cash-light economy.

Launched on August 28, 2014, Pradhan Mantri Jan Dhan Yojana (PMJDY) has emerged as one of the world's largest financial inclusion initiatives. Over 59.15 crore bank accounts have been opened under the PMJDY, with total deposits reaching INR 3.17 lakh crore. Out of the total account holders, about 56 per cent are women, and about 78 per cent of accounts belong to rural and semi-urban areas.[16]

The JAM trinity has improved direct benefit transfers, reduced leakages, and expanded financial engagement among disadvantaged people. India's Direct Benefit Transfer (DBT) system has helped the country achieve cumulative savings of INR 3.48 lakh crore by plugging leakages in welfare delivery. [17]

India's DPI has redefined the financial inclusion landscape by delivering scalable, low-cost and user-centric solutions. These innovations have created a robust, interoperable ecosystem that simplifies service delivery and deepens engagement with underserved populations. Technologies such as

AePS, Account Aggregators and DBUs are enhancing last-mile connectivity and ensuring that financial solutions are increasingly accessible, relevant, and secure (Dua *et al.*, 2025).

Studies done at firm-level (esp. MSMEs) have also found that Digital Public Infrastructure (DPI) has emerged as a promising framework for enabling inclusive digitalisation. However, findings suggest that DPI-based systems can act as effective enablers of more inclusive digital participation (Vashisht and Singh, 2026).

By facilitating safe digital identity, inexpensive payments, and direct access to financial services, India's Digital Public Infrastructure (DPI), which is based on the JAM trinity (Jan Dhan–Aadhaar–Mobile) and the Unified Payments Interface (UPI), has greatly increased financial inclusion (World Bank, 2023). India has one of the fastest rates of financial inclusion in the world, according to the World Bank, and digital public infrastructure is essential to increasing account ownership, streamlining government transfers, and lowering transaction costs (World Bank, 2025).

Over a decade of operations, UPI has demonstrated extraordinary scale and momentum. Annual transaction volume expanded from approx. 2 crore transactions in FY 2016-17 to over 24,162 crore transactions in FY 2025-26, representing an almost 13,000fold surge in transaction volume. Parallelly, transaction value rose sharply from INR 0.07 lakh crore in FY 2016-17 to approximately INR 314 lakh crore in FY 2025-26, translating into a more than 4,000fold increase in transaction value.[18]

Further research indicates that India's DPI has produced significant economic gains by boosting productivity, encouraging creativity, and expanding access to formal financing for women[19], rural communities, and small businesses. The approach is becoming more widely acknowledged globally as a scalable foundation for equitable financial and digital growth.

The National Strategy for Financial Inclusion (NSFI) 2025–30 and the growth of UPI have greatly boosted India's digital financial inclusion ecosystem. In the second half of 2025, UPI made up 85.5 per cent of all digital transactions in India, demonstrating its crucial significance in the nation's financial system[20]. According to government figures, UPI processed more than 18 billion transactions every month in 2025, demonstrating its quick uptake in both urban and rural locations[21]. The NSFI 2025–30 aims to advance inclusive digital finance, increase financial literacy, and expand access to formal financial services[22]. According to studies, UPI is a global standard for real-time digital payments that promotes innovation, economic efficiency, and increased involvement in the formal economy (BCG, 2025). Recent assessments also show that digital public infrastructure has increased financial access for women, small businesses, and low-income households, driving inclusive economic growth.

The JAM trinity Jan Dhan accounts, Aadhaar digital identification, and mobile connectivity is the foundation of India's digital financial inclusion policy, which has increased access to formal financial services and made it possible to deliver welfare benefits effectively. Digital public infrastructure has improved direct benefit transfers, decreased leakages, and expanded financial engagement among disadvantaged people, according to government assessments.[23] However full benefits of digital finance for disadvantaged groups have been limited, due to differences in digital literacy, internet access, gender gaps, and regional inequities. Therefore, ensuring that digital financial inclusion translates into fair socio-economic growth requires closing India's digital gap through better connectivity, digital skills, and inclusive policy initiatives[24].

India's digital economy employed over 14.67 million people and contributed approximately 12 per cent to 14 per cent of GDP in 2025 (ICRIER, 2025). It is expected to contribute around 20 per cent of national income by 2029–2030, surpassing the relative shares of manufacturing and agriculture. This rise is attributed to digital platforms, digital-enabling

industries and the digitisation of conventional sectors such as education, retail and finance. India is now one of the top digital economies in the world (ICRIER, 2025). It is growing at a rate that is about twice as fast as the economy as a whole. This rise has been largely attributed to digital platforms, digital-enabling industries, and the digitisation of conventional industries like education, retail, and finance.

By increasing access to AI computer infrastructure, datasets, innovation ecosystems, and qualified talent, the IndiaAI Mission seeks to establish artificial intelligence as a major force behind India's economic revolution. The Mission aims to accelerate innovation and digital entrepreneurship by democratising access to AI resources, especially for startups, researchers, and businesses. Some projections suggest AI could boost India's economy by up to USD 500 billion by 2030 while increasing productivity and competitiveness across industries (IBM, 2026).

India's Open Network for Digital Commerce (ONDC), launched by the Department for Promotion of Industry and Internal Trade (DPIIT), is an open digital trade network designed to decentralise e-commerce and reduce seller acquisition and transaction costs[25]. ONDC expands market access for MSMEs and local businesses by facilitating interoperability between buyer and seller applications[26]. The network has expanded to more than 1.16 lakh+ live retail sellers operating across 630+ Indian cities and towns. Overall network metrics also reflect over 250,000 total sellers and 75,000+ active merchants participating across sectors. It has crossed 500 million cumulative transactions in 2026, marking a major milestone for the country's attempt to build an open and interoperable alternative to traditional e-commerce platforms.[27]

India's digital trade policy places a strong emphasis on development-oriented governance, digital sovereignty, and regulatory autonomy. India has objected to the permanent moratorium on customs taxes on electronic communications at the WTO, stressing the need to protect policy flexibility for developing nations and possible losses in tariff revenue (Lohani et al., 2026). Additionally, India has stayed out of the Joint Statement Initiative (JSI) on e-commerce, contending that global consensus should be used to establish digital trade regulations (Mukherjee et al., 2025). Concurrently, India has maintained flexibility in cross-border data governance while including digital commerce rules into specific trade agreements (Kugler, 2025).

India's e-commerce exports are becoming a significant part of digital trade; by 2030, the government hopes to increase exports from the current US$ 5 billion to US$ 200–300 billion[28]. Through digital platforms and streamlined export processes, the industry is anticipated to greatly increase MSME participation in international trade[29]. India has implemented specialised e-commerce export hubs, expedited customs procedures, and digital documentation systems to support this expansion, lowering transaction costs and improving small enterprises' access to international markets[30].

With the introduction of innovative regulations and the rapid growth of digital payments, India has become one of the biggest fintech ecosystems in the world. In May 2025 alone, the UPI handled over 18.68 billion transactions of INR 25.14 lakh crore, demonstrating its pivotal position in India's digital economy[31]. India is one of the top fintech marketplaces in the world and is home to over 10,000 fintech companies[32]. Fintech sales are expected to surpass US$ 400 billion by 2030, and the industry is predicted to make a substantial contribution to economic growth, digital credit, and financial inclusion (EY, 2025).

One important fintech innovation that enables safe, consent-based sharing of financial data between institutions is India's Account Aggregator (AA) structure. The ecosystem supported digital lending, financial inclusion, and credit access by facilitating more than 17 crore consent-based data-sharing interactions by 2025[33]. While maintaining ownership over their data, the framework enables people and companies to easily exchange financial information[34]. The AA model is expected to decrease

information asymmetries, minimise transaction costs, and increase access to formal financial services when integrated with India's fintech ecosystem and digital public infrastructure.

With its ability to support disease surveillance, diagnosis, and healthcare delivery, artificial intelligence is becoming a major force behind India's healthcare transition. By 2025, India's AI healthcare market is expected to grow to US$ 1.6 billion, and by 2030, AI-enabled solutions could bring up to US$ 25–30 billion in economic value[35]. The government has increased funding for AI-driven medical research and innovation and established AI Centers of Excellence in healthcare[36]. AI applications are also improving diagnostic accuracy, operational efficiency, and access to healthcare services across India.

Through digital identities and interoperable health information, India's Ayushman Bharat Digital Mission (ABDM) is bolstering the digital health ecosystem. Over 52 crore linked health records and over 90 crore Ayushman Bharat Health Account (ABHA) numbers had been created by May 2025[37]. The platform makes it possible for healthcare providers to easily exchange health information, which lowers transaction costs and enhances service delivery. According to studies, ABDM can promote data-driven healthcare innovation throughout India, increase access to digital health services, and improve healthcare efficiency (Mishra, 2024).

During the COVID-19 pandemic, India's CoWIN platform became a worldwide acknowledged digital public good that made it possible to provide over 2.2 billion doses of vaccines using a scalable digital architecture[38]. At the national level, the technology enabled beneficiary tracking, digital certification, and real-time immunisation management. Its accomplishments helped the Ayushman Bharat Digital Mission build a more comprehensive digital health infrastructure. CoWIN has been cited by international bodies as a paradigm for population-scale service delivery, interoperability, and digital health governance in developing nations.[39]

Through teacher preparation, individualised instruction, and the creation of digital content, India is incorporating artificial intelligence (AI) into education. Adoption of AI is anticipated to enhance worker preparedness in the digital economy, administrative effectiveness, and learning outcomes[40]. Industry estimates suggest AI could contribute significantly to India's economic growth by enhancing productivity and addressing skill gaps across the education sector. International bodies have also stressed the use of AI in education in a responsible and inclusive manner.[41]

A key component of India's digital education ecosystem, DIKSHA (Digital Infrastructure for Knowledge Sharing) gives educators and learners access to digital content and learning resources that are in line with the curriculum. With billions of learning sessions recorded and support for several Indian languages, the platform improves educational accessibility and lowers delivery costs[42]. DIKSHA was essential in maintaining education across the country during the pandemic. Additionally, it has gained international acclaim as a model digital public infrastructure for education due to its scalable open architecture[43].

India's premier online learning network, SWAYAM (Study Webs of Active Learning for Young Aspiring Minds), increases access to reasonably priced higher education and skill development. With over 4 million enrolments, the portal offers over 3,800 courses created by top universities[44]. By lowering financial and geographic barriers to education, SWAYAM promotes affordable digital learning.

Through data-driven services, farmer-centric platforms, and digital public infrastructure, India's Digital Agriculture Mission seeks to modernise the agricultural sector. In order to support programs like AgriStack, Krishi Decision Support Systems, and digital crop surveys, the government has set up INR 2,817 crore for the Digital Agriculture Mission in 2024–2026.[45] The objective is to reduce information asymmetries, increase production, and improve access to agricultural services for millions of farmers.

Millions of farmers will benefit from increased access to agricultural services, reduced information asymmetries, and increased production.

Through the Digital Agriculture Mission, which is focused on AgriStack, digital crop surveys, and farmer registers, India is extending Digital Public Infrastructure (DPI) into agriculture. A budget of INR 2,817 crore, including INR 1,940 crore for AgriStack, was authorised by the Union Cabinet for the Mission in 2024–2026.[46] As of August 2026, the AgriStack Farmer Registry has generated over 10.33 crore unique Farmer IDs across India.[47] Through digital crop surveys, GIS technologies, and AI-enabled decision-making tools, the effort promotes data-driven agriculture. AgriStack is anticipated to boost farmers' access to loans, insurance and market information while lowering transaction costs and increasing output.

Innovation driven by digital public infrastructure (DPI) is increasingly being driven by India's startup environment. India's startup environment is increasingly driven by DPI-enabled innovation. By September 2026, over 2.5 lakh firms had received official recognition under Startup India, making India one of the biggest startup ecosystems in the world.[48] Launched in January 2016, Startup India aims to build a robust innovation ecosystem by fostering entrepreneurship, supporting technology-driven enterprises and generating employment. Its 19-point Action Plan focuses on regulatory simplification, funding support, incentives, incubation and industry–academia collaboration. By assisting entrepreneurs in AI, deep tech, fintech, health-tech and DPI, Startup India has become a significant facilitator of India's digital and AI transition. It also promotes innovation through startup recognition, mentorship networks, intellectual property support, and government procurement reforms.

With more than 120 unicorns valued at more than US$ 350 billion, India has become the third-largest startup ecosystem in the world.[49] Artificial intelligence and digital technology innovation has been bolstered by government backing through Startup India, the IndiaAI Mission, and the MeitY Startup Hub. With an INR 10,371.92 crore authorised budget, the IndiaAI Mission seeks to increase AI infrastructure, startups, and research capacities. By enabling startups to create scalable solutions in the fintech, healthtech, agritech, and deep-tech sectors while promoting economic growth and digital transformation, these projects enhance India's Digital Public Infrastructure ecosystem.

One of the main pillars of India's digital innovation ecosystem is the Startup India initiative. As of mid. 2026, over 2.35 lakh DPIIT-recognized startups have been officially registered under the Startup India Initiative, creating more than 2.4 million direct jobs.[50] The ecosystem has boosted entrepreneurship in the fintech, healthtech, agritech, and deep-tech sectors with the help of Digital India, startup laws, and organisations that prioritise innovation. According to research, digital startups are boosting India's standing as one of the top startup hotspots in the world while making a substantial contribution to economic growth, technological innovation, and job creation. [51]

16.4. Digital and AI Policies, Strategies and Initiatives in ASEAN

ASEAN has been developing policies and institutions for the digital economy, with the goal of reducing trade costs, enhancing competitiveness, and strengthening the region's position as a digital trade hub (OECD, 2026). To achieve these goals, ASEAN has launched many initiatives to support regional integration through different aspects of digital integration. These efforts show ASEAN's aim to build an interoperable and integrated digital economy in the region.

These initiatives started in the late 1990s with the e-ASEAN Framework Agreement[52] in 2000. It aims to promote the development of information and communications technology (ICT), e-commerce, and the digital economy across the ASEAN region. It

is widely regarded as the starting point of ASEAN's digital integration journey.

The ASEAN Digital Integration Framework (DIF) (ASEAN Secretariat, 2020), adopted in 2018, is recognised as the foundation for ASEAN's digital integration efforts. This framework is a strategic vision with the aim of accelerating progress to build an integrated digital economy, strategically expanding upon the e-ASEAN framework. These were further developed in the ASEAN Digital Integration Framework Action Plan 2019-2025 (DIFAP) in 2019. It provides a detailed implementation roadmap for the DIF, expanding scope from ICT towards integrating ASEAN's digital economy. The DIFAP is noted for its integrated approach, bringing together previously separated areas of action into a comprehensive policy framework.

The key existing ASEAN initiatives enhancing various aspects of the digital economy are presented in Table 16.1. ASEAN has created numerous initiatives to achieve regional integration through various aspects of digital integration, including the comprehensive framework, e-commerce, data protection, cybersecurity, cross-border data flows, and artificial intelligence (AI).

The development of ASEAN's overall digital integration is enhanced by the comprehensive initiatives including the Bandar Seri Begawan Roadmap (BSBR), ASEAN Strategic Plan 2026-2030, ASEAN Digital Masterplan 2030 (ADM 2030), and Digital Economy Framework Agreement (DEFA).

16.4.1. Bandar Seri Begawan Roadmap (BSBR)

The Bandar Seri Begawan Roadmap (BSBR), endorsed in 2021, was designed as an economic recovery and resilience plan created to mitigate the impacts of the COVID-19 pandemic. It aims to provide a single coherent strategy for an economy in which the seamless and secure flow of goods, services, and data is enabled by appropriate rules, regulations, infrastructure, and human capital development. The BSBR is structured around three phases: (1) Recovery (2021–22), focusing on accelerating the delivery of initiatives under the Digital Integration Framework Action Plan (DIFAP); (2) Acceleration (2022–24), emphasing trade facilitation and digitalisation, cross-border data flow, cybersecurity, digital skills development, and interoperability of cross-border digital payments; and (3) Transformation (2025), which marked the launch of negotiations for an ASEAN Digital Economy Framework Agreement (DEFA).

Table 16.1: Key Existing ASEAN Initiatives for the Digital Economy

Aspect	ASEAN Initiatives
Comprehensive	• Bandar Seri Begawan Roadmap,[53] 2021 • ASEAN Digital Masterplan 2030 (ADM 2030),[54] 2026 • Digital Economy Framework Agreement (DEFA):[55] scheduled for signing in November 2026
E-Commerce	• ASEAN Agreement on Electronic Commerce (AAEC),[56] 2019; in force since December 2021
Data Protection	• ASEAN Framework on Personal Data Protection (AFPDP) [57] – 2016
Cross-border Data Flows	• ASEAN Data Management Framework (DMF)[58] and Model Contractual Clauses (MCCs), [59] 2021
Artificial Intelligence (AI)	• ASEAN Guide on AI Governance and Ethics,[60] 2024 • ASEAN Responsible AI Roadmap (2025-2030),[61] 2025

Source: Adapted from Tech for Good Institute (2023), incorporating data from Ing et al. (2025); Isono and Prilliadi (2023); and OECD (2026).

16.4.2. ASEAN Digital Masterplan 2030 (ADM 2030)

The ASEAN Digital Masterplan 2030 (ADM 2030), adopted in 2026, serves as ASEAN's flagship strategic framework for advancing regional digital integration and providing a shared strategic direction for digital cooperation over the period 2026-2030. Succeeding the ASEAN Digital Masterplan 2025, ADM 2030 responds to emerging technological and economic developments, including artificial intelligence (AI), the expansion of digital government, rising cybersecurity threats, the growth of cross-border digital trade and digital payments, evolving data governance frameworks, and the increasing importance of digital skills and talent development. ASEAN recognised that digital technologies are becoming deeply embedded in all dimensions of economic and social life, requiring a renewed regional framework to guide collective action through 2030.

ADM 2030 seeks to build a integrated, secure, trusted, innovative, and inclusive digital community that empowers every citizen and business to access opportunities, build innovation capabilities and thrive in the global digital economy. The masterplan is operationalised through eight desired outcomes, covering digital infrastructure, digital government, digital society, digital ecosystems, innovation and start-ups, digitally transformed industries, green and AI-driven digital transformation, and the development of digital talent and future skills.

Interoperability and capability uplift are emphasised as cross-cutting priorities (Ing et al., 2025). Interoperability, in particular, constitutes a core pillar of the masterplan and a key enabler of deeper regional digital integration. Recognising the diverse levels of digital readiness among ASEAN member states, the masterplan places strong emphasis on capability-building, collaborative approaches, and the development of shared enablers. ADM 2030 is closely aligned with the ASEAN Economic Community (AEC) Strategic Plan 2026-2030 and its associated Strategic Measures, thereby ensuring policy coherence with ASEAN's broader economic integration agenda and reinforcing digital transformation as a cross-cutting driver of growth, competitiveness, and resilience.

16.4.3. Digital Economy Framework Agreement (DEFA)

ASEAN officially concluded negotiations on the Digital Economy Framework Agreement (DEFA) on 29 May 2026 in Manila, the Philippines, with the agreement scheduled for signing in November 2026. DEFA will become the world's first binding regional agreement on the digital economy and represents the final deliverable under the 2021 Bandar Seri Begawan Roadmap (BSBR). The agreement is designed to provide a comprehensive framework to empower businesses and stakeholders across ASEAN by accelerating digital trade, enhancing interoperability, fostering a safe and trusted online environment, and expanding the participation of micro, small, and medium-sized enterprises (MSMEs) through enabling rules, infrastructure, and talent development. By establishing region-wide regulations for cross-border e-commerce, digital payments, and data flows, DEFA is expected to double the size of ASEAN's digital economy from an estimated US$ 1 trillion to US$ 2 trillion by 2030.

DEFA sets out comprehensive binding obligations across nine core areas: (1) trade facilitation, (2) e-commerce, (3) cross-border digital invoicing and payments, (4) digital identity and electronic authentication, (5) online safety and cybersecurity, (6) cross-border data flows and data protection, (7) business competition and consumer choice, (8) cooperation on emerging and future topics such as AI, and (9) digital talent development and mobility.

16.4.4. ASEAN Agreement on Electronic Commerce (AAEC)

For the electronic commerce aspect, ASEAN launched the ASEAN Agreement on Electronic Commerce (AAEC) in 2019, which entered into force on 2 December 2021. The AAEC is a legally binding regional agreement aimed at promoting and facilitating

cross-border e-commerce within ASEAN. It seeks to strengthen cooperation on digital trade issues, enhance trust and confidence in online transactions, promote a predictable, transparent, and secure digital business environment, and support the participation of MSMEs in digital trade. The agreement covers key areas such as cross-border e-commerce facilitation, electronic authentication and electronic signatures, paperless trading, consumer protection, personal data protection, cybersecurity, as well as electronic payments and logistics. The AAEC is significant as it creates a more integrated ASEAN digital market, reduces transaction costs, supports regional economic integration, and enables ASEAN businesses, especially MSMEs, to better access regional and global markets through digital platforms.

16.4.5. ASEAN Framework on Personal Data Protection (AFPDP)

Data governance has become increasingly important, and ASEAN has recognised this growing importance. One key regional initiative in this area is the ASEAN Framework on Personal Data Protection (AFPDP), adopted in 2016. The framework aims to promote consistency and interoperability in data processing practices by providing a unified approach to personal data protection across the ASEAN region. Its core principles include obtaining consent, providing notification, defining the purpose for data collection, ensuring data accuracy, implementing robust security safeguards, facilitating data access and correction, addressing data transfers to other countries or territories, determining data retention policies, and establishing accountability. The AFPDP serves as a reference for ASEAN member states in developing or revising their national laws and regulations on personal data protection.

16.4.6. ASEAN Data Management Framework (DMF) and Model Contractual Clauses (MCCs)

Both the ASEAN Data Management Framework (DMF) and the Model Contractual Clauses (MCCs) were endorsed in 2021. The ASEAN DMF is a comprehensive framework that supports the strategic objective of managing data throughout its life cycle and ecosystem. It promotes effective data governance across different data types within organisations, while ensuring appropriate protection for different categories of data throughout the data life cycle. By adopting the DMF, private businesses in ASEAN are better equipped to protect their data, build trust and confidence among customers and partners, and leverage data for innovation. The ASEAN MCCs are voluntary, standardised contractual templates designed to support the cross-border transfer of personal data within ASEAN by providing a contractual mechanism to ensure that personal data is transferred and protected in accordance with agreed data protection principles.

16.4.7. ASEAN Guide on AI Governance and Ethics

The ASEAN Guide on AI Governance and Ethics was published in 2024 with the objective of empowering governments and organisations to design, develop, and deploy artificial intelligence (AI) systems in a responsible manner, while strengthening user trust. The guide serves as a practical reference with an emphasis on supporting alignment across ASEAN and fostering interoperability of AI governance frameworks among different jurisdictions. It also provides recommendations for both national- and regional-level initiatives that governments in the region may consider in promoting the responsible design, development, and deployment of AI systems. The guide sets out seven guiding principles: (1) transparency and explainability, (2) fairness and equity, (3) security and safety, (4) robustness and reliability, (5) human-centricity, (6) privacy and data governance, and (7) accountability and integrity. Moreover, it identifies four governance frameworks to support the responsible and ethical use of AI, covering internal governance structure and measures, the determination of appropriate levels of human involvement in AI-augmented decision-

making, operational management, and stakeholder interaction and communication. In 2025, the guide was expanded through the publication of the *Expanded ASEAN Guide on AI Governance and Ethics – Generative AI*, which builds on the original framework to address issues specific to generative AI systems.

16.4.8. ASEAN Responsible AI Roadmap (2025-2030)

The ASEAN Responsible AI Roadmap (2025-2030) was adopted in 2025 with the objective of supporting ASEAN member states in developing and adopting a coordinated regional approach to responsible AI. The roadmap provides practical guidance for policymakers and regulators to promote the inclusive, responsible, and sustainable adoption of AI by 2030, while empowering a wide range of stakeholders to operationalise responsible AI in ways that reflect national contexts and capacities. It also seeks to align national AI initiatives with ASEAN's broader digitalisation agenda, particularly commitments under the Digital Economy Framework Agreement (DEFA). The roadmap identifies a set of key priority areas, including: the development and accessibility of digital infrastructure and connectivity, the promotion of the free and secure flow of data across borders, the reduction of barriers to AI adoption for businesses of all sizes, and the strengthening of digital literacy across the region.

16.5. Digital and AI-led Transformation in ASEAN

ASEAN has prioritised digital transformation as a key driver of inclusive growth, regional connectivity, and economic resilience. Through the development of regional digital frameworks, the strengthening of digital infrastructure, and the promotion of innovation-driven ecosystems, ASEAN is advancing its collective digitalisation agenda while accommodating diverse national contexts and levels of digital readiness. Initiatives under the ASEAN Digital Masterplan, the Digital Economy Framework Agreement (DEFA), and related digital cooperation mechanisms reflect ASEAN's commitment to building trusted, interoperable, and inclusive digital systems across the region. In this context, ASEAN's ongoing efforts in areas such as digital economy, digital trade, fintech, healthcare, and education are presented.

16.5.1. Digital Economy

ASEAN's digital economy has continued to grow strongly, with gross merchandise value (GMV) exceeding US$ 300 billion in 2025. Over the past decade, both GMV and revenue have grown at an average rate of around 15 per cent year-on-year (Google et al., 2025). This growth has been driven by a major digital transformation, starting with more than 200 million new users coming online since 2016. ASEAN consumers have widely adopted digital lifestyles, leading to a major shift in commerce: three out of five people now shop online, and over 60 per cent of all transactions are conducted digitally.

The six main sectors of ASEAN digital economy are e-commerce, food delivery, transport, online travel, online media, and financial services. Among them, e-commerce contributes the largest share of GMV, followed by online travel, transport and food delivery, and online media. By 2030, e-commerce GMV is expected to nearly double, increasing from US$ 185 billion in 2025 to US$ 359 billion. Video commerce continues to expand rapidly, while AI has become an essential part of the online shopping experience, influencing search, recommendations, and consumer engagement.

Despite macroeconomic pressures, demand for food delivery has remained resilient, reaching US$ 23 billion GMV in 2025. Platforms are increasingly focusing on affordability by offering lower-cost meals, new product categories, and more diverse menus. As a result, food delivery services are shifting from being a premium option to a more accessible service for a wider range of consumers.

ASEAN's transport GMV is projected to rise from US$ 11.5 billion in 2025 to US$ 22.5 billion in 2030. The sector is rapidly adjusting to digital transformation, particularly through the adoption of electric vehicles (EVs). Governments across the region are supporting EV adoption with incentives and regulations, while transport platforms are using digital tools to respond to demand for cleaner and efficient mobility. In addition, pilot projects for autonomous vehicles show ASEAN's effort to prepare for future transport systems by testing new technologies and business models. As travel demand continues to recover, online travel GMV is growing gradually from the GMV of US$ 51 billion in 2025 to reach US$ 81 billion in 2030.

Online media, which includes advertising, gaming, video, and music, generates the highest revenue share relative to GMV among the six major digital sectors in ASEAN. GMV in this sector is forecast to reach US$ 55 billion by 2030, up from US$ 34 billion in 2025, representing growth of around 60 per cent. Advertising remains the largest contributor, followed by gaming, video, and music. Digital technology and AI are key drivers for this sector. For example, as content formats continue to merge, short-form drama is emerging as a fast-growing segment, with both Chinese and local players investing heavily to compete with global platforms.

ASEAN's digital financial services sector is expanding beyond payments to include digital lending, wealth management, and insurance, with all segments expected to double by 2030. As QR codes and e-wallets lower payment fees, providers are shifting toward value-added services. Lending remains the largest revenue source but faces slower growth, while digital wealth is expanding rapidly through low-cost platforms. Insurance is still largely human-led, despite growing digital channels.

With around 500 million internet users, ASEAN is well positioned for AI-driven transformation. Interest in AI is higher than the global average, with about 700 AI startups in the region. Over the past year, 30 per cent of private investment has gone to AI, and the share of VC portfolios focused on AI is expected to rise sharply in the coming year.

16.5.2. Digital Trade

Digital trade in ASEAN is expanding faster than the global average, although participation differs widely among ASEAN member states. Between 2005 and 2022, ASEAN's digital trade exports grew by nearly 10 per cent per year, about 4 percentage points faster than global growth. By 2022, digital trade reached US$ 387 billion, accounting for almost 20 per cent of ASEAN's total exports and 6 per cent of global digital trade. Singapore dominates this trade, contributing nearly two-thirds, while the Philippines, Malaysia, Indonesia, and Thailand together account for around one-third. The CLMV countries represent about 5 per cent (OECD, 2026).

Digitally deliverable services, such as finance, insurance, and other business services, are the main drivers of growth, expanding at 11 per cent annually, much faster than goods and non-digital services. Most ASEAN digital trade is conducted with external partners, as intra-ASEAN trade makes up only 12 per cent, highlighting the region's strong reliance on global markets.

ASEAN is also advancing paperless trade by digitalising key trade documents and expanding the ASEAN Single Window (ASW), which has reduced costs and improved customs efficiency. The planned ASEAN Single Window (ASW) 2.0 aims to strengthen interoperability among ASEAN members and with key partners such as China, Japan, Korea, and the United States. Moreover, deeper integration under the Digital Economy Framework Agreement (DEFA) is a major step for ASEAN, with the potential to increase regional trade by 13–20 per cent, depending on the level of ambition.[62]

16.5.3. FinTech

Thailand is undergoing one of the fastest digital banking transformations in Southeast Asia. In 2023,

the country recorded over 107 million mobile banking accounts, far more than its population of around 70 million. Internet access is also widespread, reaching more than 85 per cent of the population.[63] One of the key drivers of this transformation is PromptPay, Thailand's national digital payment system.[64] With the widespread use of QR code payments, PromptPay enables real-time transfers in Thai Baht among individuals, businesses, and government agencies. Over time, the system has expanded to include services such as bill payments, request-to-pay, e-donations, and government-to-person transfers. It is also widely used by the government to distribute social welfare directly to citizens via national ID numbers.

Building on its domestic success, the Bank of Thailand (BOT) has extended PromptPay to the regional level under the ASEAN Payment Connectivity initiative. This includes real-time cross-border QR payments and fund transfers at lower costs. Thailand has become a regional leader, linking its system with major partners such as Singapore (via PayNow), China (Alipay, UnionPay, WeChat Pay), and several ASEAN countries, as well as Japan and Hong Kong.[65] Beyond payments, Thailand is continuing to deepen its fintech ecosystem. Three new digital bank licenses have been approved, with operations beginning in 2026.

At the regional level, initiatives such as *Nexus Global Payments*, led by ASEAN monetary authorities and the BIS Innovation Hub, aim to connect national payment systems through a single multilateral platform.[66] At the same time, digital financial services across ASEAN are rapidly expanding. Most ASEAN countries now operate national QR payment systems, and many already support cross-border QR interoperability (Google et al., 2025).

16.5.4. Healthcare

Digital health is changing healthcare across ASEAN. New technologies such as telemedicine, big data analytics, and artificial intelligence (AI) make healthcare cheaper and easier to access, especially in remote areas, extending the reach of high-quality healthcare. These tools also support Universal Health Coverage (UHC) and help countries respond better to public health challenges (ASCC, 2023).

Telemedicine and digital health apps are now common in most ASEAN countries. For example, Indonesia's Halodoc and Malaysia's teleconsultation services allow patients and rural clinics to connect with specialist doctors online. Digital health also supports older people. Thailand's DoCare Protect uses sensors to monitor elderly health at home, while Singapore's Dementia Friends app helps communities support people with dementia.

Digital systems and big data also play an important role. The ASEAN BioDiaspora Virtual Center collects and links health data from different countries. It helps governments monitor health risks and respond quickly to disease outbreaks.

Artificial intelligence (AI) is increasingly used in healthcare. In Singapore, AI chat systems help screen patients. In Indonesia, the CekMata start-up uses AI to detect cataracts early. In Thailand, AI tools support doctors in choosing treatment plans for cancer patients.

16.5.5. Education

ASEAN countries are gradually transforming their education systems through digital technologies that reflect national needs and capacities. Progress has been driven by government policies, targeted programmes, and improved digital infrastructure. Among the ASEAN members, Singapore stands out for its advanced use of digital education tools. Platforms such as the Student Learning Space (SLS) support online learning for students nationwide, while home-based learning systems were developed to ensure continuity during health emergencies. For Indonesia, the focus is on reducing gaps between schools through initiatives like Digitalization of Indonesian Education and MEdukasi, as well as the

Kartu Prakerja programme, which delivers skills training through digital platforms. In the case of Lao PDR, online learning through the Khang Panya Lao education platform has been developed.[67]

AI is also increasingly being integrated into education across the region. Malaysia and Vietnam are investing in AI-based EdTech research to enhance digital learning, while universities in Singapore lead research on smart campuses and automated student services. At the same time, Thailand and the Philippines are building teacher capacity through AI-related training, and countries such as Indonesia and Malaysia have begun including AI courses in higher education curricula (Goh and Hamid, 2026; Indonesia Cyber Education Institute and UNESCO, 2025).

The key initiatives undertaken by ASEAN countries to support AI-driven transformation in the education sector are as follows:

- Brunei Darussalam: Promotes AI in education through school toolkits, GenAI guidance, and university cooperation with ASEAN partners.
- Cambodia: Introduces GenAI through pilot projects with international partners, including ADB's TIESEA Project for teacher and student training.
- Indonesia: Uses AI for adaptive and distance learning, such as Universitas Terbuka's Teman Belajar, supported by AI guidelines, training, and the Dikti AI Center.
- Lao PDR: Focuses on capacity building and education quality, supported by Lao–China cooperation on smart technology research.
- Malaysia: Applies AI for personalised learning and university management, embeds AI in degree programmes, and has established the country's first Faculty of AI.
- Myanmar: Is at an early stage of AI adoption in higher education, with growing use of GenAI tools and AI-related courses.
- The Philippines: Integrates GenAI to support teaching, personalised learning, assessment, language services, and administrative tasks.
- Singapore: Leads AI in education through the National AI Strategy, with initiatives for AI talent, adaptive learning, and automated assessment via the Student Learning Space.
- Thailand: Promotes AI-powered language learning and tutoring, with universities using AI for teaching, writing support, and real-time feedback.
- Timor-Leste: Has limited GenAI use, but its education strategy supports e-learning and technology access for disadvantaged groups.
- Viet Nam: Strengthens digital education by integrating AI into school and university curricula and expanding teacher training.

ASEAN countries are increasing the use of AI in education to improve learning quality and widen access, though progress differs across the region. Singapore, Malaysia, Thailand, Indonesia, and the Philippines lead in applying AI for adaptive learning, tutoring, assessment, and student services. Viet Nam is also advancing through AI-based curricula and teacher training. Other ASEAN members remain focused on building capacity, expanding distance learning, and strengthening international cooperation.

16.6. Comparative Analysis of Approaches Taken by India and ASEAN

This section compares India's and ASEAN's digital and AI policies, across various parameters such as overall objective, focus, strategy, institutional framework, governance, international cooperation, and challenges. It depicts that there are shared priorities such as digital inclusion and skills development, as well as divergences in governance models, policy coordination, and implementation at national and regional levels (Table 16.2). The analysis offers insights into opportunities for closer India–ASEAN cooperation in digital and AI development.

Table 16.2: Comparative Analysis between India and ASEAN Digital and AI Policies

Unit	India	ASEAN
Overall objective	• To leverage AI for inclusive social and economic development. • The National AI Strategy emphasizes a unique approach called #AIforAll, which focuses on using AI to enhance human capabilities, address societal challenges, and ensure equitable access to technology.	• To drive economic growth and sustainable development by building an integrated digital economy
Focus	• Opportunity: the economic impact of AI for India • AI for Greater Good: social development and inclusive growth • AI Garage for 40 per cent of the world: solution provider of choice for the emerging and developing economies across the globe	• Interoperability • Recognizing different levels of digital development • Inclusive, innovative, resilient, and sustainable
Strategy	• Democratizing AI Resources • Leveraging AI for Economic Growth & Social Good • Develop Secure & Trusted AI • AI for Science and Access for Social Empowerment • Human Capital Development • Development of Resilient, Efficient & Innovative AI Systems	• Develop a multi-layered regulatory ecosystem • Alignment and harmonization between ASEAN member states and the region-wide framework
Institutions	• Indian government (Central and States) • Industry (Public and Private Sector) • Academia/Research • Start-ups	• ASEAN Secretariat bodies and governments of ASEAN countries
Digital infrastructure	• Focus on Digital Public Infrastructure (DPI)-led model	• Focus on universal access
Digital skills	• Focus on enhancing Digital literacy	• Focus on developing digital skills through education and capacity building
Data and AI governance	• DPDP Act 2023 • Data Empowerment and Protection Architecture (DEPA) (NITI Aayog) • FREE AI Framework (RBI)	• Tailored for ASEAN—DEFA • Fragmented rules and regulations
International cooperation	• Focus on enhanced cooperation with countries for joint R&D, access to advanced technologies, access to frontier models and AI infrastructure • India is the founding member of the Global Partnership on Artificial Intelligence (GPAI). Currently, it comprises 46 member countries and the European Union. • India hosted the AI Impact Summit in February 2026. 92 countries and international organisations endorsed the New Delhi Declaration.	• Cooperate with many external partners including China, Japan, Korea, US, EU, Australia, and India through formal ASEAN frameworks, working groups, capacity-building, and pilot projects.

Continued...

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Challenges	• Difficulty in accessing industry-specific data required to build customised platforms and solutions currently concentrated in the hands of a few major players. • Fragmented data ecosystem • Supply chain disruption • Geopolitical risks	• Different digital readiness • Uneven development of digital infrastructure • Shortage of digital skills. Interoperability: ASEAN countries' initiatives start at the national level with the region-wide framework, so the ability to operate across the region and also connect with external partners

Source: Authors' compilation.

16.7. India–ASEAN Digital Cooperation: Way Forward

The digital transformation of India and ASEAN creates a significant opportunity to deepen cooperation around a shared vision of an inclusive, secure, interoperable, and innovation-driven digital economy. The analysis shows considerable convergence between India's DPI-led approach and ASEAN's efforts to build an integrated digital economy. While India has developed scalable digital platforms in identity, payments, health, education, agriculture, financial inclusion and e-commerce, ASEAN has developed regional frameworks centred on interoperability, cross-border data flows, digital trade, cybersecurity, digital skills and responsible AI. The next phase of India–ASEAN cooperation should move beyond knowledge sharing towards institutionalised, outcome-oriented and mutually beneficial digital partnerships.

First, interoperability and DPI should become a central pillar of cooperation. India's experience with Aadhaar, UPI, DigiLocker, Account Aggregator, ABDM and other interoperable platforms provides opportunities for technical cooperation, capacity building and pilot projects with ASEAN member states. Rather than promoting a single technological model, India and ASEAN should develop interoperable and adaptable digital solutions that respond to different levels of digital readiness and national policy priorities. Such cooperation can particularly benefit financial inclusion, digital health, education, agriculture and public-service delivery.

Second, digital trade and cross-border digital connectivity should receive greater policy attention. The emerging DEFA, together with the ASEAN Agreement on Electronic Commerce, provides an important regional foundation. India could explore closer alignment and practical cooperation with ASEAN on electronic transactions, digital payments, e-invoicing, digital identity, paperless trade, consumer protection and MSME participation. Greater interoperability between India's digital commerce ecosystem, including ONDC, and ASEAN digital platforms could help small businesses and start-ups access wider regional markets.

Third, data governance and trusted cross-border data flows should form a core area of cooperation. Differences in national data protection regimes can create barriers to digital integration. India and ASEAN should promote dialogue on interoperable data governance frameworks, privacy protection, consent-based data sharing, cybersecurity and trusted mechanisms for cross-border data flows, balancing innovation and economic opportunities with individual rights, data security and national regulatory interests.

Fourth, responsible and human-centred AI should become a strategic pillar. India's Responsible AI principles, IndiaAI initiatives and evolving AI governance framework can complement ASEAN's Guide on AI Governance and Ethics and Responsible AI Roadmap. Joint research, regulatory dialogue, AI safety and evaluation mechanisms, responsible deployment standards and shared approaches to

algorithmic accountability can contribute to a trusted regional AI ecosystem. Particular emphasis should be placed on AI applications addressing development challenges in healthcare, agriculture, education, climate resilience and public administration.

Fifth, cooperation must focus on digital skills, innovation and institutional capacity. Uneven digital readiness, shortages of skilled personnel and differences in institutional capabilities remain important constraints. India and ASEAN could establish joint digital-skilling programmes, university and research partnerships, start-up exchanges, innovation challenges and fellowships in AI, cybersecurity, cloud computing and emerging technologies. Greater collaboration among governments, industry, academia and start-ups would strengthen regional innovation ecosystems.

Finally, India–ASEAN digital cooperation could be guided by inclusive and sustainable digital transformation. Connectivity and technology adoption must reach women, rural communities, MSMEs and other underserved groups. Cybersecurity, consumer protection and trust should be embedded into digital expansion from the outset. A structured India–ASEAN digital cooperation mechanism, supported by regular policy dialogue, sectoral working groups and demonstrable pilot projects, could provide an institutional platform for translating shared priorities into action.

The way forward is, therefore, not simply to replicate India's digital model in ASEAN, but to co-create interoperable, inclusive and context-sensitive digital solutions. India's experience with DPI, digital finance, digital health, education, agriculture, e-commerce and AI provides a strong foundation, while ASEAN's regional approach offers an important framework for interoperability and collective governance. Together, India and ASEAN can shape a distinctive Global South approach to digital transformation one that combines technological innovation with trust, inclusion, regulatory cooperation, and sustainable development.

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17 Digital Nomadism: Catalyst for India-Southeast Asia's Cooperation and Connectivity

Joefe B. Santarita

17.1. Introduction

Regionalism between India and the countries of Southeast Asia goes beyond physical infrastructure. Human participation is an integral part of the process and serves to ensure closer economic and cultural connections in the area, showing that the importance of exchange between people is no less than that of infrastructure itself. A perfect example of this is the recent increase of digital nomads in the region. By freeing themselves from rigid corporate office work and complicated visa schemes, these individuals have created a highly collaborative, cross-border ecosystem (Hannonen & Pitkanen, 2026).

Digital nomads, according to Muller, are people who do not need offices anymore since they get to decide where and how they conduct their businesses. They need nothing more than a computer and internet access since they can perform their activities from any part of the world. A digital nomad may be working from a co-working space in Delhi or Berlin for a month, then move to Chiang Mai to continue his work (Muller, 2016). They personify the modern convergence of integrated economies and connected oceans. They are normally very educated, very skilled, and technologically astute workers. They have something in common, which is, 'their passion for travel, desire for adventure, and interest in new cultures.' (MBO Partners 2023).

Based on Malaysia's categorization, digital nomads are classified into digital freelancers and independent contractors; as well as remote worker which may include full and part-time employees but does not require physical presence at the workplace such as an employee working for a certain company remotely from home or wherever he or she likes. These types are further categorized into technical and non-technical professions. The first one includes professions like 'software engineer, backend engineer, cloud, cybersecurity, blockchain, artificial intelligence, machine learning (data-related, etc.), digital marketing, digital creative content/development, user experience, user interface, and other related professions'. The second type includes positions like 'CEO/founder/managing director, COO, business development/growth manager, marketing manager, CFO, finance manager/accountant, sales manager, customer success manager, and HR manager'. In addition, 'legal counsel, public relation manager, consultant, customer service manager, communications and public relations, administrative manager, technical writer, tax specialist, tax accountant, production manager, supply chain manager, and other related professions' are also covered in the second category (MDEC 2022).

It should be noted that this flow of talented people is not simply a matter of individual preference. It

represents an economic phenomenon that needs to be taken into account. Through their movement from one region to another, whether in Bangalore, Ho Chi Minh, Bali, or Hyderabad, they bring with them cutting-edge technical skills, market behavior, and venture capitalist thinking to nurture the innovative environments that they enter. By 2026 and beyond, the effectiveness of regionalism and regionalization will greatly depend on the "people-to-people" interoperability, where the software engineer in Chennai collaborates seamlessly with the entrepreneur in Manila while sipping on coffee in Da Nang.

Moreover, this human aspect is redefining the concept of 'borders.' While governments may continue managing borders and immigration, the digital nomad exists within an environment where there is a functional integration of the region. He relies on cross-border fin-tech applications, regional membership services for co-working spaces, and digital health insurance that applies to the entirety of ASEAN, leading to an economic identity that transcends policies and legislation. The digital nomad is paving the way for a new era of regional identity, one where connectivity is not based on transferring products from point A to B, but on the movement of human talent through a whole hemisphere.

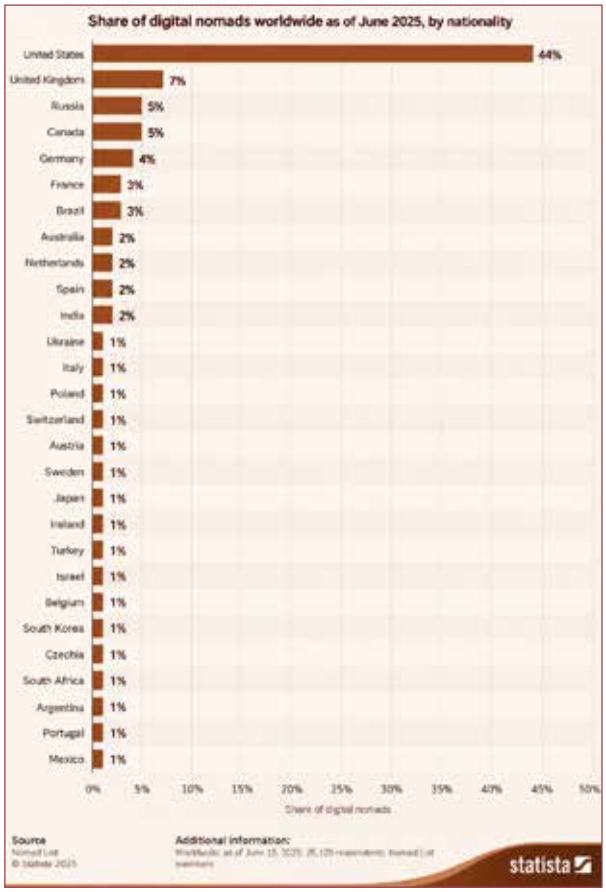
This chapter aims to investigate remote working communities' ability to serve as a "human layer," increasing economic and cultural ties between India and Southeast Asia through the expansion of traditional connectivity frameworks based on maritime and physical linkages. Moreover, the study analyzes "Brain Circulation," which includes informal information transfer and micro-FDI by means of IT specialists from India and ASEAN businessmen, while also paying attention to such issues as digital gentrification and taxation. This chapter also provides a strategic roadmap on how to maximize the presence of digital nomads in India and Southeast Asia. Given the limited academic research on digital nomadism, this paper incorporates online reports and practitioner blogs alongside available scholarly literature.

17.2. The Scale of the Movement: World's Data-Driven Growth

The idea of digital nomads has transformed from a unique and tech-savvy culture into a fully-fledged global economic engine that has redefined notions such as work, location, and lifestyle. Its history dates back to the end of the last century with the futuristic ideas of a book called "Digital Nomad" by Japanese futurist Tsugio Makimoto. The author foresaw that fast internet connections would allow employees to break away from the office routine in the future (Makimoto and Manners, 1997). During the first two decades of the new century, the predictions started coming true. Thanks to various freelance platforms, travel blogs, and primitive cloud computing technologies that gave some freedom to freelance writers, programmers, and other entrepreneurs who could earn money while working out of tropical cafes. But the golden age for digital nomads had yet to come, as these people still needed to live in poverty and endure unstable connections to enjoy their lifestyle, which could be afforded only by freelancers. It all changed in 2020 due to a pandemic outbreak. This formalization turned digital nomadism into a legitimate way for high-salary, full-time corporate employees to escape the traditional work environment (Ehn, Jorge and Marques-Pita, 2022). Acknowledging the flood of wealthy individuals without a fixed location willing to spend money, countries globally responded by offering digital nomad visas, setting up co-working facilities, and building dedicated accommodations for digital nomads.

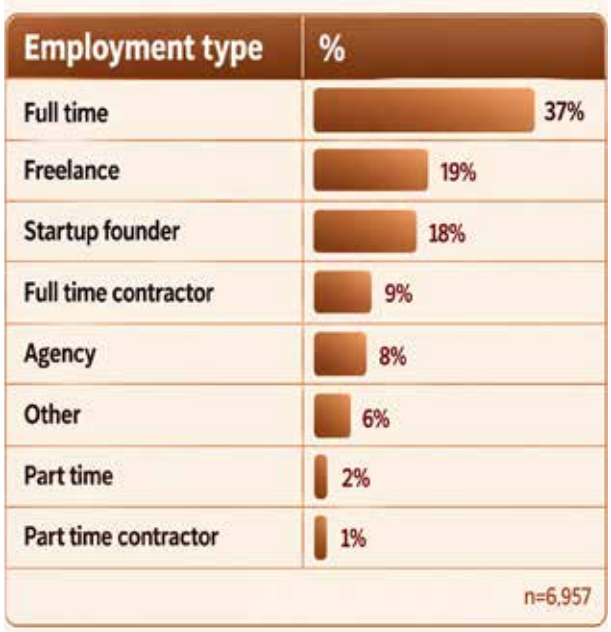
Five years after, the data of 2025 as shown in Figure 17.1 demonstrate the current global distribution of digital nomads, broken down into the country of origin of each individual. Clearly dominating this chart and taking a striking lead are those individuals originating from the United States, who make up about 44 per cent of the total population of digital nomads around the world. This overwhelming majority beats the next best competitor, the United Kingdom, with its mere seven per cent share of the

Figure 17.1: Share of Digital Nomads Worldwide by Nationality, 2025



Source: Statista

Figure 17.2: Nomads by Employment, 2025



Source: Nomads.com

pie. For the remainder, however, this global share becomes increasingly fragmented across an array of different countries. Russia and Canada come third and fourth at five per cent, while Germany trails right behind at four per cent, with France and Brazil rounding out the group at 3 per cent. Then comes a collection of several countries, including Australia, the Netherlands, Spain, and India, all holding a two per cent share of the population (Statista, 2025).

As illustrated in Figure 17.2, the largest portion of digital nomads adhere to conventional and steady employment arrangements, dispelling the myth that the large percentage of nomads function as freelancers. The greatest percentage of respondents, which totals to 37 per cent, belongs to the group of full-time employees. It is also noteworthy that full-time contractors accounted for nine per cent of total respondents and 19 per cent for startup founder respectively (Nomads.com, 2026).

In the independent sector, freelancers make up 19 per cent of the market while startup owners contribute an additional 18 percent. The implication of this is that there exists a thriving sub-culture of entrepreneurship and independence within the traveling community. There are also individuals working in agencies who constitute 8 percent of the market while "Others" make up 6 percent (Ibid).

Lastly, part-time jobs among digital nomads are extremely uncommon. Only two percent of the participants work in part-time jobs, while one percent work as part-time contractors (Ibid). It seems that earning sufficient money as a part of the nomad lifestyle requires having a good flow of money that can be achieved only through a full-time job or business venture. In general, this dataset shows a mature system of remote work, which relies on full-time participants.

As evident from Figure 17.3, the digital nomad demographic tends to be quite rich, considering that most people make mid- to high-level salaries. The biggest chunk comprises people who earn between

Figure 17.3: Nomads by Income, 2025



Income	%
< $25k / y	6%
$25k - $50k / y	15%
$50k - $100k / y	33%
$100k - $250k / y	35%
> $250k - $1M / y	8%
> $1M / y	2%
Average	$124,296 / y
Median	$85,000 / y
	n=5,510

Source: Nomads.com

US$100,000 and US$250,000 annually, making up 35 percent of the total demographic. Next on the list are those who earn between US$50,000 and US$100,000 yearly, representing 33 percent of the demographic. Overall, these two groups show that almost 68 per cent of all digital nomads earn an upper middle-class or upper-class salary (Ibid).

It should be pointed out that the category of high and ultra-high earners represents yet another significant social layer among these people. As the survey has shown, 8 percent of nomads have an annual income in the range of US$250,000-US$1M, whereas just two per cent earn more than US$1M per year. The presence of the highest earning people in statistical data leads to the fact that the average annual income reaches rather impressive figure of US$124,296. However, the median annual income is equal to US$85,000 (Ibid).

On the other hand, the lower income category could be considered a real minority in the nomadic group. There are only 15 per cent of individuals who receive an annual income between US$25,000 and US$50,000, while there are 6 per cent of people who earn less than US$25,000 per year. It shows that some financial stability is required for living a nomadic life of permanent travels, having technological devices and staying in hotels abroad (Ibid).

In addition to that, there is also an indication in the survey about the occupations taken up by these nomads, categorized by gender. Figure 17.4 highlights a detailed breakdown of the main career paths chosen by male digital nomads, using the information from a large sample size of 22,183 individuals. Some of the notable observations that can be drawn from the collected information is the number of male nomads that have been attracted to technology-based and entrepreneurial professions, where software development and web development lead the way at 33 per cent and 27 per cent, respectively. The high number of males engaged in tech-related occupations is further emphasized by the "vs. women" statistics, which show that there is significantly higher participation of males in such industries than females, with software development having +312 per cent, web development having +334 per cent, and mobile development having an outstanding +432 percent (Ibid).

Figure 17.4: Nomad Men Work in Different Positions



#	Work	%	vs. women
1	Software Dev	33%	+312%
2	Web Dev	27%	+334%
3	Startup Founder	27%	+167%
4	Marketing	15%	+16%
5	SaaS	13%	+246%
6	Creative	12%	-4%
7	UI/UX Design	11%	+64%
8	Product Manager	11%	+103%
9	Mobile Dev	10%	+432%
10	Crypto	10%	+332%
11	Data	10%	+134%
12	Finance	10%	+163%
13	Ecommerce	8%	+142%
14	Sales	7%	+107%
15	Education	6%	=
			n=22,383

Source: Nomads.com

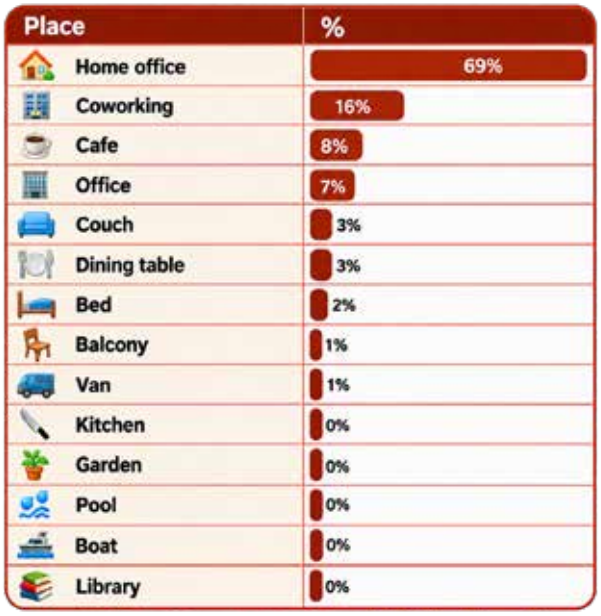
Apart from technology and software jobs, males are present in corporate positions, financial jobs, and marketing quite prominently. Specifically, marketing has a substantial 15 percent representation amongst men, a moderate 16 per cent boost in comparison to women. Furthermore, UI/UX design (11 percent), product management (11 percent), crypto, data, and finance (ten percent respectively) have strong positions. In each and every one of these technical or analytical spheres, there is a massive disparity when it comes to male vs. female representation, with the exception being that of crypto (+332 percent) and finance (+163 percent). However, in terms of more visually-driven design, communication, and human services in general, an opposite pattern is vividly observed. "Creative" sphere, for instance, which accounts for 12 percent of male nomads, is the only one that demonstrates a deficit (-4 percent) in terms of males' presence in comparison to females'. Finally, education stands at the very end of this chart, having exactly 6 per cent of representation, and featuring equal number of men (=) vs. women (Ibid).

Figure 17.5 presents information about the location of the workplace preferred by digital nomads, presenting an enormous difference between the popular perception of the digital nomad lifestyle and reality. While the romanticized image of the digital nomad working from the beach, poolside, or even in a moving van has been portrayed by the media, the data suggests that most digital nomads prefer a stable and comfortable workplace. The data shows that more than half of remote workers (59 per cent) opt to work from their homes' traditional office space as the place to work. Other popular locations for working include shared professional spaces like coworking offices (15 per cent), cafés (8 per cent), and conventional corporate offices (seven per cent). Domestic areas like the couch, dining room table, and bed are used much less often, each comprising three percent and two percent, respectively (Ibid).

It is interesting that the places traditionally linked to the nomadic lifestyle, including balconies, vans, kitchens, gardens, swimming pools, boats, and libraries, altogether account for only one percent. In studying a pool of 5,800 people, it becomes clear that despite the freedom offered by the digital nomadism, the reality behind this trend involves quite traditional and immovable working spaces.

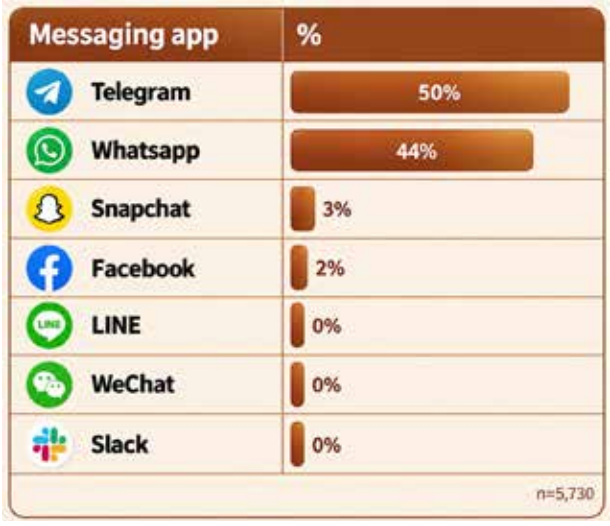
Figure 17.6 shows the communication channels preferred by 5,730 digital nomads, two major players dominate the remote working community. First, Telegram emerges as the top messaging app

Figure 17.5: Locations where Nomads Work



Source: Nomads.com

Figure 17.6: Messaging Apps Used by Nomads, 2025



Source: Nomads.com

utilized by exactly half of the targeted audience at 50 percent. Second, WhatsApp becomes one of the top competitors that attracts 44 percent of the users. In total, these two highly secure cloud-based apps claim 94 percent of the nomads' communication needs. On the other hand, other social media applications remain underutilized within this particular group; Snapchat has a meager share of three percent, and Facebook accounts for two percent. Also, regional or corporate-oriented apps such as LINE, WeChat, and Slack have no presence among users in this data sample; their shares amount to zero per cent (Ibid).

Table 17.1 shows the seven most visited Southeast Asian cities by nomads in 2026 based on a very large Nomad List database of 415,168 people. Thailand becomes the definitive gateway destination for Southeast Asia in terms of remote work with three entries to its name, with Bangkok being crowned as the ultimate champion. Bangkok takes up the first spot overall with a visitation rate of 2.22 per cent, whereas Chiang Mai is at tenth place (1.07 per cent) and the vacation paradise island of Phuket occupies thirty spot (0.53 per cent). Apart from Thailand, there are other destinations in Indonesia and mega city states which are quite popular among the nomads, as seen by the beach destination town of Canggu in Bali, which comes at thirteenth place with 0.91 percent visitation, giving tough competition to the infrastructure rich city of Singapore at fourteenth place (0.90 per cent) and Kuala Lumpur at seventeenth place (0.82 percent). The Vietnamese mega-city of Ho Chi Minh takes up 28th place (0.55 per cent) (Ibid).

Figure 17.7 offers a captivating image of the state of affairs of the digital nomad industry in Southeast Asia before the coronavirus pandemic, featuring the distinct characteristics of a highly feminized industry with a preference for working within informal spaces. With females making up 70 percent of the demographic, it is obvious that the region has always been a relatively safe place to travel and work alone as a woman. It appears from the data collected that digital nomads prefer to work from shared spaces such as hostels and coffee shops (ASEAN Post, 2019).

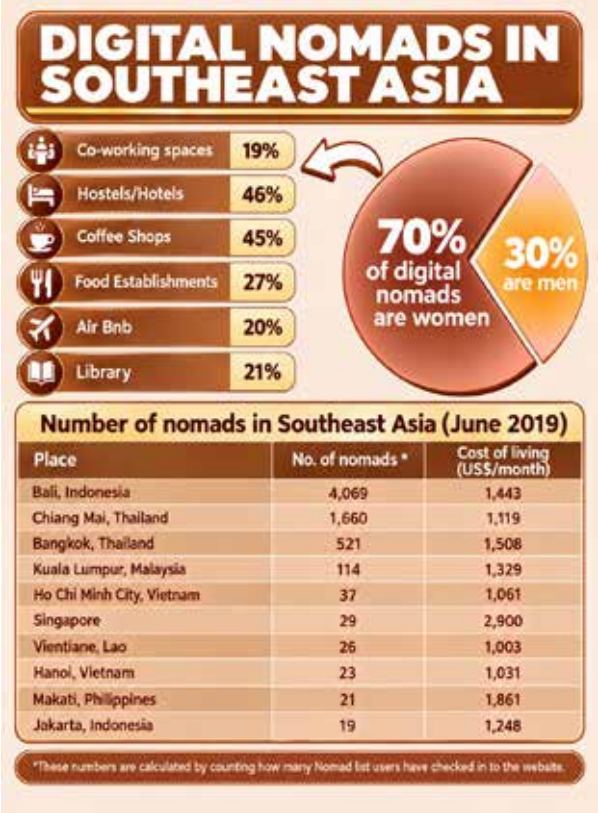
From a geographical perspective, the clustering of nomads is strongly weighted towards certain major nodes; Bali and Chiang Mai have emerged as the "titans" in this category, probably because of existing infrastructure facilities, lifestyles, and reasonable

Table 17.1: Most Visited Cities/ Destinations in Asia, 2026

Rank	City	Visited share (%)
1	Bangkok	2.22
10	Chiang Mai	1.07
13	Canggu	0.91
14	Singapore	0.9
17	Kuala Lumpur	0.82
28	Ho Chi Minh	0.55
30	Phuket	0.53

Source: Generated from Nomad List, 2026. n= 415,168

Figure 17.7: Digital Nomads in Southeast Asia, 2019



Source: ASEAN Post/Euroconsulting

affordability compared to other locations. At the same time, highly-priced cities such as Singapore attract a negligible number of digital nomads, indicating that, in most cases, affordable cost of living becomes the determining factor for choosing a location. Although the data above are not comprehensive in terms of all digital nomads, it is still clear what factors influenced some countries, especially Thailand and Indonesia, in creating their own visas for this group of people (Ibid). Although updated data on digital nomads is desirable to accurately assess their regional contribution, it remains unavailable at this time.

17.3. Catalyzing Regulatory Harmonization

The "visa revolution" that has taken place in the Global South has ignited a fierce battle among countries by adopting a new perspective towards remote work immigrants, where they are no longer seen as tourists but as a key economic resource. The best example of this is the highly tailored environment created to remove the hassles associated with living away from one's home country such as the case of India and Southeast Asian countries.

17.3.1. Southeast Asians Responses

Southeast Asia is known to be an attractive destination for remote workers because of low-cost lifestyles, a pleasant climate, and the delicious food offered in the region. For over a decade, remote workers used a haphazard system of short-term travel visas and border crossings to make ends meet. Yet, authorities in the region have decisively changed their approach and abandoned laissez-faire attitudes towards remote workers, opting to build strict framework-based policies. Malaysia, Thailand, and Indonesia have developed remote work-focused visa policies, which offer rigid protection under law for those who use them. Remotely working schemes give income straight to the local economy and at the same time guarantee protection for individuals from any immigration laws (Linton, 2026).

There are significant differences between countries in terms of legislation regarding these current schemes and very strict requirements must be followed concerning income levels and application process (Litania and Ajmone Marsan, 2023).

17.3.1.1. Thai Destination Visa (DTV)

Offers an exclusive five-year validity period along with multiple entry benefits. Freelancers may enjoy residency for up to 180 days during each entry. Application criteria can be accessed via the official Thai E-Visa Website and require that one has a fixed balance of 500,000 Thai Baht (approximately US$15,000) (Royal Thai Embassy, 2024).

17.3.1.2. Malaysia DE Rantau Pass

Regulated through the official portal of MDEC DE Rantau Portal. It provides a visa-free stay for up to 3-12 months with a possible extension of another 12 months. A minimum annual income of US$24,000 needs to be shown, and applicants get access to a network of structural centers that are "nomad-ready" (Malaysia Digital Economy Corporation, 2022).

17.3.1.3. Indonesian Remote Work Visa (E33G)

It can be obtained conveniently through the official Indonesian Immigration portal. The visa is specifically designed for highly paid individuals looking for a permanent home base in a place such as Bali. The visa requires a strict minimum foreign income of US$60,000 annually and also US$2,000 cash in the bank initially (Directorate General of Immigration Indonesia, 2024).

17.3.1.4. Philippine Digital Nomad Visa

Enshrined in Executive Order No. 86 and crafted to establish the Philippines as a hub for tourism in the region. The visa is jointly managed by the Philippine Bureau of Immigration and the Department of Foreign Affairs which comes with a renewable period of one year. It includes the unique requirement of reciprocity, wherein the applicant's native nation needs to provide similar benefits to Filipino nationals (Linton, 2026). As of this writing, however, the

delegated government agencies have not rolled out the final implementation rules for this visa category.

17.3.2. India's Strategic Response

Digital nomadism operates as a "stress test" for states, encouraging them to take action by creating the idea of financial interoperability. Financial interoperability changes the face of the world economy by transforming it from separate national markets into real-time networks. With the arrival of the digital nomad era, this change in comparison with the previous period may be referred to as a transition from being an outsider to becoming a borderless participant. This transition is enabled through connecting Fast Payment Systems (FPS), which does not imply correspondent banking at all (Aurazo, et al., 2026). The connection of such systems like Unified Payments Interface (UPI) in India, PayNow in Singapore, and DuitNow in Malaysia has created something similar to a "roaming service" for financial purposes (FF News, 2025). Thanks to this, tourists can pay for various services from having coffee to booking a coworking place by just scanning QR codes.

The economic impact is thus not just one of mere convenience but represents a total restructuring of what was referred to as the "nomadic tax". Historically, border trade involved a chain of middlemen all taking their share, which resulted in the total cost being significantly greater than the 5-7 percent "tax" on transactions (Beck, et al., 2022). This has since been streamlined with the establishment of the UPI-PayNow/UPI-DuitNow connection pairs, cutting costs by nearly half in many corridors, to be exact by 45 percent. In addition, thanks to the ISO 20022 standard messaging format, information travels alongside payments, resulting in real-time regulatory and anti-fraud checks performed within seconds rather than days (International Organization for Standardization, 2025). Not only does it make things easier for the nomads, but it provides an added advantage for local micro merchants who are able to accept foreign currency payments online using their smartphones. The benefits are summarized in Table 17.2.

But what is even more important is the interoperability which would facilitate the emergence of a new global financial system resembling the decentralized nature of the Internet. As more and more countries are seeking access to these multinational financial systems, there is the emergence of what has been called the "Global Real-Time Rail". The latter is a payment infrastructure that allows individuals to "send and receive data-rich payments in real time, 24/7/365 days a year" (Payments Canada, 2026). By 2026, financial identities that are portable and liquid will no longer be an issue (Bank for International Settlements, 2025). It becomes easier for the nomadic worker to go across jurisdictions without facing any financial challenge. The successful implementation of the "regional linkage hubs" shows the strategy adopted by the G20 in creating a payment system where cross-border transactions would be as easy as domestic transactions (Financial Stability Board, 2025).

Table 17.2: Key Financial Interoperability Linkages (2026)

Linkage	Participating Countries	Primary Benefit
UPI-PayNow	India & Singapore	Near-instant P2P remittances and merchant payments via mobile numbers.
UPI-DuitNow	India & Malaysia	Dramatic reduction in "middleman" fees for the migrant and nomadic workforce.
Project Nexus	Multi-country (ASEAN+)	A multilateral blueprint for connecting multiple national instant payment systems.

Source: FF News, 2025; Times News Network, 2026; and Bank of International Settlements, 2025

17.4. From Brain Drain to "Brain Circulation"

The south part of the globe has experienced continuous migration of its talented individuals over the years in a phenomenon known as Brain Drain. Engineers, physicians, researchers, and other professionals would migrate to the west and reside there permanently due to the lucrative salary packages and infrastructural facilities offered by the western countries (Remoto, 2026). This brain drain phenomenon created a structural gap in which the developing nations were effectively sponsoring the developed nations through the development of talent that would finally leave their countries. However, the emergence of telecommuting and digital nomads has revolutionized this narrative into one of 'Brain Circulation'. Saxenian (2000, 2002) defined this as 'the recursive, two-way flow of highly skilled professionals who study and work abroad but then return or commute regularly between their native countries and host tech hubs'. In the case of digital nomadism, the brain circulation is facilitated by the power of informal knowledge transfer and the rise of micro-FDI.

17.4.1. The Power of Informal Knowledge Transfer

The significance of this synergy can hardly be overstated due to how much it has succeeded in turning the whole concept of migration into something new using Knowledge Transfer. While previously information and knowledge were kept behind the walls of the headquarters in Silicon Valley or London, nowadays when an Indian AI programmer chooses to work in Ho Chi Minh City's coworking facilities for three months, he or she not only works at a desk, but also transfers a set of skills. Through "water cooler" talks, meetings, and hackathons, the global experts become mediators between developing countries and the latest inventions from across the globe, ensuring that local coders are aware of the best practices, coding languages, and project management systems of their foreign counterparts without having to get visas (World Economic Forum, 2025a).

17.4.2. The Rise of Micro-FDI

Other than the exchange of ideas, the movement has created a new form of funding called Micro-FDI. The digital nomad now acts as a bottom-up investor who pumps money into the economy just by being in the locality. This entails employing local people for certain positions, supporting local enterprises, and even nurturing local businesses that they come across while being in the place. As a result, they become the natural marketing agents for such enterprises owing to their international contacts (Ibid).

This situation is best illustrated in the 2024 study about digital nomadism in Chiang Mai, Thailand. The article has pointed out 'how cities can leverage the digital nomad trend to stimulate local entrepreneurship, boost the service sector, and foster a vibrant, multicultural community that benefits from fresh perspectives and global connections' (Cecez-Kecmanovic, Leong, and Cahalane, 2024). This is similarly aired recently in the World Economic Forum where ASEAN is challenged to ensure that 'micro, small, and medium-sized enterprises are able to participate in the regional digital economy, rather than being left behind by complexity and compliance costs' (World Economic Forum, 2026).

17.5. The "Friction of Success": Addressing Challenges

The phrase "friction of success" can be used to appropriately describe the challenges associated with the development of digital nomadism, which have now hit a point of critical mass, whereby success creates its own challenges since digital nomadism becomes an established part of the labor force in the global economy. With digital nomads becoming more than just temporary residents and moving into the category of locals that constitute the permanent work force, issues of integration begin to become more challenging. This is not only because of the hospitality required but also the societal and governmental framework needed to deal with the friction caused by the embedded existence of a highly mobile, well-paid labour force (World Economic Forum, 2025b).

Overcoming this tension is the key challenge for the next phase of the digital revolution. Since the movement requires a fine balance between various factors such as culture, affordability, and advanced technology, a disruption in any of these aspects could lead to the destabilization of the whole process. With these people becoming increasingly interconnected, the problems relating to affordable housing, social equality, and legal legitimacy are becoming more visible (Linton, 2026). It is important to overcome this tension not by discouraging the spread of remote work, but rather by developing an institutional framework in the countries hosting these individuals to make sure that their "success" does not come at the cost of the environment supporting them.

17.5.1. The Rising Tide of Digital Gentrification

This issue of "digital gentrification," however, is now a reality in former utopian locations such as Bali and Goa, where the arrival of well-compensated remote employees fundamentally transforms the local economy. In particular, because these digital nomads typically receive payments in strong currencies and make purchases in weaker local currency, there is a major economic distortion that causes an unnatural surge in the value of the marketplace. This creates a 'bubble' that separates foreign talents with locals (Wu, 2024). Even as these new arrivals do create some immediate investment in so-called "lifestyle" businesses like expensive coffee shops, fancy gyms, and upscale hotels, the net result is that everything suddenly becomes vastly more expensive to live on, pricing out many of the same locals whose labour makes these places possible in the first place.

The most telling example of this phenomenon is seen through the significant increase in rental costs, which amounts to 15-20 percent (KC and Triandafyllidou, 2026). This fact is indicative not only of the natural rise in market price but of an actual exodus of native populations and services. When the "native" population cannot afford to live in its neighborhood anymore, the chances of any cross-fertilization of minds between locals and digital nomads become virtually nonexistent. In this case, digital nomads end up living in an isolated environment, cut off from their original purpose of being introduced to local culture. If something is not done to secure adequate housing for all individuals, these regions may lose their distinctive character forever due to the financial success of digital nomads.

17.5.2. The Maze of Taxation Ambiguity

Such a kind of "maze" can be considered as another regulatory issue. The tax systems, which were developed in the 20th century, were not capable of adapting to the changed circumstances in the 21st century labour market. The main criterion that can show such kind of obsolescence is the growing amount of foreign earnings by a foreigner for a business company located in another country and known as "homeless income". It is also referred to as "stateless income" (Brauner, 2025). As there is no Double Taxation Avoidance Agreement between India and ASEAN, the problem lies in the fact that there is either the case of overtaxing the nomads who are working far away or no taxes collected at all, resulting in the lack of funds required by host countries to build infrastructure for nomads. The use of the uniform tax regime will make sure that the host country receives its money's worth when building digital infrastructure and other utilities for nomads. In turn, the latter will feel relaxed in terms of fulfilling their civic obligations instead of engaging in 'jurisdiction shopping'. This strategy of spending a few months in one country and then shifting to another place for another couple of months has been employed by the nomads for several years now to avoid triggering tax residency in any of the countries (Linton, 2026).

17.5.3. The Borderless Challenge of Data Sovereignty

This case highlights a very crucial point in regards to the weaknesses that lie within the very nature of the remote work process. There exist differences in the degree of protection provided by information technology laws in different nations. This situation is very much felt by digital nomads when 'storing data in

one country, processing it in another, and still subject to regulations from the third' (Rattan, 2026). In an era where more workers will be mobile, their digital trail will have found itself scattered among many different nations that have varying levels of standards when it comes to protecting data or might not have any protection laws at all. This is best exemplified by the 'dynamic risks of software engineer logging into a production database from a coffee shop in a high-risk jurisdiction, or a sales director negotiating contracts while on a 'hush trip' in a country where the enterprise has no legal entity' (TechClass, 2025). It therefore becomes imperative to establish a universal data system to create digital trust while moving between nations.

17.6. Strategic Roadmap: The Digital Trust Corridor

The emergence of the Digital Trust Corridor (DTC) can be regarded as an absolute game changer in relation to the previous "accidental" phenomenon of digital nomadism, replacing the previous practice of abusing immigration policies with a well-thought-out structure that will meet the needs of today's knowledge workers. Remote workers have been using different migration policies for several years, living on "gray area" visas with legal, tax, and immigration ambiguity (Harris, 2026a, also Linton, 2026). The emergence of the DTC will result in the emergence of a secure structure that will see the current generation of remote workers not only as tourists but as an economic power. In some online literature, it is known as a trusted data corridor. This corridor is "a governed pathway that lets trusted, accredited participants exchange verified, purpose-based data with each other, even across borders, under shared rules and auditable controls" (Leach, 2025). It is hoped that the said DTC will offer stable conditions such as coordinated interests of various states, reliable digital infrastructure, and well-defined legal frameworks within which the process of relocating from one country to another can take place with no friction.

17.6.1. The Unified Nomad Pass

The implementation of the Unified Nomad Pass (UNP) will surely serve as a groundbreaking revolution in terms of mobility within the region. The said pass is geared towards breaking down the existing dichotomies of the restrictive immigration systems in place which essentially compel individuals to choose between either being tourists or settlers. This concept is particularly conscious of the need for a 'missing middle' in the current visa policies, which do not cater to the demands of a remote professional who requires more flexible visa provisions. The UNP is designed to provide a seamless entry into the country for citizens of member states of ASEAN into India and vice versa.

Notably, the introduction of the UNP extends beyond mere access to the right of entry as it establishes a specific tax and residency status for the "remote worker." The establishment of the "remote worker" category through this process is vital in resolving any legal and financial issues faced by members of the digital nomad community. This category will provide a framework for ensuring effective taxation and social inclusion within the countries to which they travel. The more logical point to start is by revisiting Indonesia's E33G KITAS (Traveloka, 2026).

17.6.2. Portability of Social Benefits

The idea of Portability of Social Benefits deals with the most basic insecurity of the borderless worker – the absence of a consistent social safety net (Cruz, 2004). Conventionally, contributions towards health and pensions are restricted to certain geographical borders, so with each transition from one nation-state to another, a worker is forced to "restart" their contribution history, losing out on their seniority and any form of social security in the future. For this reason, the creation of an innovative "health and pension wallet" through the blockchain technology proves to be a groundbreaking innovation. This has been originally proposed by Estonia as 'Nomad Security' which include 'telehealth services and a portable digital health record, ensuring consistent

healthcare support no matter the nomad's location' (Accelerate Estonia, 2026). This is something that Southeast Asian and Indian governments must consider and maybe improve to maximally harness the potentials of digital nomadism in the area.

17.6.3. Tier-2 Satellite Hubs

The paradigmatic approach to adopting Tier-2 Satellite Hubs aims to spread the benefits of the digital economy to regions outside congested mega-cities and establish themselves within rising cities. In this way, through the promotion of "Nomad Villages" in cities like Da Nang, Chiang Mai, Iloilo, and Mysore, this blueprint acts preemptively against the rampant gentrification witnessed in tier-1 cities such as Manila and Delhi. A good example of a nomad village is the Sikkim model. India launched its first digital nomad village in July 2025. It is officially called the 'Nomad Sikkim' project which is designed primarily to attract professionals 'seeking a balance between remote work and a peaceful lifestyle' This project is a joint initiative of Pakyong district administration and Sarvahitey NGO. The Yakten Village is equipped with high-speed wi-fi networks and is designed to promote eco-friendly practices as well as foster a sustainable remote work environment (Akashvani, 2025). In 2026, the state of Sikkim opened its second village in Gumpadara, Soreng District and in the near future in Rey, Gantok District (Nomad Sikkim, 2026). By doing this and if replicated in other states, India creates a two-way street where the nomads will be able not only to continue their career path abroad but also to contribute to and learn from the thriving tech industry of India while supporting local livelihoods in the host village.

17.6.4. E-Nomad Initiative

To complement other countries' initiatives, it is recommended that India should launch the E-Nomad initiative to aggressively join the international race for skilled talent, thereby making itself an alternative destination to Southeast Asian countries which are already popular among digital nomads. It is through the identification of high growth technology clusters like Pune and Hyderabad that the Indian government has sought to leverage its current advantages in terms of manufacturing prowess and start-ups to attract foreign talent. This approach indicates that the Indian government has moved beyond offering conventional tourist visas and has now chosen an economic strategy, wherein the new e-visa regime will pave the way for global professionals to integrate into the Indian ecosystem while servicing their global clients.

17.7. Conclusion

Digital nomads do more than act as temporary residents; they serve as the contemporary builders of the decentralized Indo-Pacific. The nomads represent the live link connecting technology centers such as Bangalore to co-working spaces in Bali. In order to survive in the highly competitive world of the global market economy, it is imperative for India and Southeast Asia to break away from the old notion that the nomads are nothing more than extended guests. Instead, they should be recognized by the policy makers as a key element of the new regional identity and must be given accordingly soft and hard infrastructural support.

To facilitate the increasing number of nomads in the regions, national and even local governments must play an important role. These institutions should be prepared to address the 'frictions of success' and must be ready to adopt necessary innovations in immigration governance and infrastructure development to harness the potentials of digital nomadism. At the current rate, one simply cannot ignore the growing influence of the digital nomad on the successful establishment of cooperation between India and the ASEAN countries. Although decades of diplomatic meetings may have very well prepared the ground for economic cooperation, the fast and organic development that is taking place now is brought about by the activity of the digital workforce across digital boundaries.

In the case of India and Southeast Asia, the digital nomads act as informal envoys that are responsible in closing gaps in culture and serving as conduits

in paving the way for joint projects. As such, digital nomad embodies the very essence of the "Look East" becoming "Live East" and the shared vision where geography does not matter as much as connectivity. In order to make sure that the process develops in full swing, the Indo-Pacific region must itself change, advancing beyond visa initiatives as well as creating a climate in which remote work can thrive in any way possible. By accepting the digital nomad as an integral part of the modern Indo-Pacific region, India and ASEAN countries will guarantee their prominent role in the dynamic digital axis now and in the years to come.

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18 ASEAN and India: Strengthening Partnerships for Sustainable Development and Cooperation

Sabyasachi Saha and Tushti Tanwar

18.1. Introduction

Economic development and sustainable development are inseparable and mutually reinforcing pathways for humanity. Unprecedented changes in the social and material conditions of life and habitation—driven primarily by technological progress, industrialisation, and historic shifts in demography and longevity—have generated negative spillovers, including breaches of planetary boundaries, natural disasters, and embedded inequalities, which now pose existential threats. ASEAN and India have been globally recognised for rapid economic growth, emergence, poverty reduction, and distinctive sustainable development initiatives among developing regions. Adopted in 2015, the Sustainable Development Goals (SDGs) provided a global compact to accelerate sustainable development on all fronts, offering a common framework to guard against fragmented approaches and guide global cooperation beyond narrow domestic economic interests. However, since then, the world has experienced repeated shocks and growing uncertainties that continue to undermine this compact. ASEAN and India have demonstrated strong resilience in the face of recent shocks, underscoring the need for deeper collaboration on resilience building and sustainable development within the broader framework of ASEAN-India cooperation. This partnership has progressed significantly over the decades and can deliver tangible gains for both partners, even as multilateral cooperation remains weak. This chapter examines progress on sustainable development in ASEAN and India and identifies potential areas of cooperation.

Given that sustainable development remains a top priority for both India and ASEAN, and that a wide range of best practices has already produced positive transformations despite multiple cross-cutting challenges, a meaningful partnership would be consequential not only for the region but also for the wider global community. Such cooperation can help shape the roadmap for the coming decades and influence the architecture of sustainable development partnerships and development cooperation beyond 2030.

The United Nations 2030 Agenda for Sustainable Development provided a robust global compact for sustainable and inclusive development in 2015, built on the expectation that global cooperation would be effective and that national governments would pursue implementation in line with their

development aspirations. The agenda set out a plan of action for partnerships centred on people and the planet, while promoting peace and prosperity. Nearly a decade later, however, prospects for achieving the SDGs have diminished, with only 17 per cent of targets currently on track globally. It is important to note that the SDGs are not legally binding; their support mechanisms operate primarily through intergovernmental institutional arrangements and national localisation approaches (Biermann et al., 2017). Today, multilateralism has weakened amid inadequate institutions, governance challenges, and financial constraints. Sustaining collective action on sustainable development priorities has therefore become increasingly difficult in the current global context. Further, the broader constituency of the Global South continues to face structural bottlenecks, including economic and fiscal constraints, weak innovation ecosystems, dependence on imported technologies, concentration of global capital stock in the Global North, resource misallocation, and market failures that generate negative spillovers and hinder progress on the SDGs.

This period has witnessed several shocks, including the pandemic, which deepened economic instability across many countries in the Global South and contributed to debt distress. Although global cooperation on sustainable development remains urgent, it has become increasingly fragile. This calls for new leadership from countries that have demonstrated strong potential for economic resilience and have undertaken major initiatives to implement large-scale sustainable development programmes for the well-being of their citizens. Their experience is highly valuable for envisioning and implementing sustainable development projects globally at scale, particularly in relation to resource mobilisation, governance innovation, access to technology, capacity building, and partnerships. As the world struggles to accelerate progress on the SDGs, cooperation among aligned and willing countries can provide an important step forward and inspire broader collective action.

India is a significant partner in this context, having substantially reduced multidimensional poverty during the post-SDG period after achieving reductions in absolute poverty within the MDG timeframe. Over the past decade, India has witnessed development transformation at scale through the localisation of development, the delivery of large-scale welfare programmes addressing basic human needs, unprecedented financial inclusion and livelihood promotion, major steps towards renewable energy transitions at all levels, and the mainstreaming of environmental protection and disaster preparedness across the country. Similarly, ASEAN has been a frontrunner in economic development and sustainability practices. According to the Sustainable Development Report 2025, East and South Asia have, on average, shown the fastest progress on the SDGs since 2015, driven primarily by advances in socioeconomic targets (Sachs et al., 2025). This makes Southeast Asia an important region for examining the relationship between sustainable development and regional cooperation in the India-ASEAN partnership context. India has developed institutional and technological approaches in areas such as SDG localisation, digital public infrastructure, financial inclusion, renewable energy, and large-scale public-service delivery. These experiences offer valuable lessons for regional cooperation and make ASEAN-India cooperation especially relevant for addressing implementation challenges in the region.

The ASEAN-India partnership emerged from India's "Look East Policy" in the 1990s. India became a Sectoral Partner of ASEAN in 1992, a Dialogue Partner in 1996, and a Summit Partner in 2002. The partnership gained renewed momentum with the announcement of the "Act East Policy" at the 12th ASEAN-India Summit in 2014. Engagement subsequently shifted more robustly towards connectivity, commerce, and culture (Ministry of External Affairs, Government of India, 2017). ASEAN has since emerged as a major trade partner for India, while India has advanced the Act East Policy through high-level government engagement and sectoral cooperation mechanisms.

18.2. Sustainable Development: Perspectives from ASEAN and India

18.2.1. The SDGs: Background

At the turn of the century, the world came together to launch the eight Millennium Development Goals (MDGs). This marked the first major political acknowledgement that the development divide between high-income countries and the rest of the world was a persistent challenge requiring urgent collective action. However, the MDGs produced uneven results across developing countries. Following the Rio+20 process in 2012, the post-2015 development agenda took shape, leading to the 2030 Agenda and the adoption of the seventeen Sustainable Development Goals.

The SDGs set out 17 goals and 169 associated targets, which are integrated and indivisible, to transform systems and address the root causes of human development challenges beyond economic growth. The vision was to build a world in which human habitats are safe, resilient, and sustainable, with improved access to healthcare, education, and social protection, and freedom from poverty, hunger, disease, and want (United Nations General Assembly, 2015, para. 7). Agenda 2030, adopted by 193 United Nations member states in September 2015, provided a framework for holding countries accountable across the 17 SDGs.

This chapter draws on the Sustainable Development Report indices, ASEAN Secretariat progress reports, and national VNR submissions as its primary data sources, triangulated with sector-specific schemes and related documentation for India. With less than four years remaining until 2030, there is a pressing need to identify areas where gaps persist. Current figures present an alarming picture. Globally, SDG progress has stagnated, with wide variation across countries: SDG scores exceed 80 in top-performing countries but fall below 50 in the least developed countries. Major goals that remain off track include SDG 2 (Zero Hunger), SDG 11 (Sustainable Cities and Communities), SDG 14 (Life Below Water), SDG 15 (Life on Land), and SDG 16 (Peace, Justice, and Strong Institutions) (Sachs et al., 2024). Based on the 1999-2019 trend, the global Human Development Index was expected to reach its 2030 target. However, as the world falls off track, every region's projected 2023 values have dropped below the pre-2019 trend (United Nations Development Programme, 2024). Emerging Asian economies have shown resilience in sustaining growth momentum (OECD, 2023). In this context, developing nations in Asia, and regional groupings such as ASEAN, are especially significant in contemporary development discussions.

18.2.2. SDG Progress in ASEAN

18.2.2.1 Overall Regional Trajectory

ASEAN's sustainable development trajectory reflects both measurable progress and persistent disparities. ASEAN has been working towards becoming a fully integrated and globally competitive region (ASEAN Secretariat, 2024). The trajectory of sustainable development across the region is reflected in the ASEAN SDG Indicators Progress Report 2025, which shows that only 15 targets are on track to be achieved by 2030. Although the region has made significant progress, the pace remains uneven across goals. In addition, 32 targets across 15 goals, excluding Goal 7 (Affordable and Clean Energy) and Goal 12 (Responsible Consumption and Production), have recorded moderate progress. The remaining 21 targets under 14 goals, excluding Goal 5 (Gender Equality), Goal 14 (Life Below Water), and Goal 16 (Peace, Justice, and Strong Institutions), have shown minimal progress, stagnation, or regression (ASEAN Secretariat, 2025). This points to a varied pattern of development across socioeconomic indicators.

18.2.2.2 Country-Level Variation

Table 18.1 presents the SDG index scores of ASEAN member states for the period 2000-2025. A comparison of these scores from 2015 to 2025, following the adoption of the 2030 Agenda for Sustainable Development, helps categorise development

outcomes. High-performing economies, namely Singapore, Thailand, and Vietnam, started from relatively strong positions and recorded moderate but steady progress over the period. In 2025, Thailand remains the highest scorer in the region, with a score of 75.43. The slower pace of SDG improvement in high-performing economies suggests that countries closer to the development frontier face a different set of challenges, with future gains depending heavily on innovation-led growth and sustainability-focused policy development.

Mid-performing economies, such as Brunei Darussalam, Malaysia, Indonesia, and the Philippines, recorded SDG scores above 60 in 2015. The Philippines and Indonesia have remained relatively stable in their growth trajectories. Brunei Darussalam, meanwhile, has maintained comparatively strong performance since the early years and has recorded notable progress in its scorecard. To accelerate the current rate of development, implementation capacities must be strengthened while sector-specific challenges are addressed.

Myanmar, Lao PDR, and Cambodia began from comparatively lower development baselines. In terms of absolute change during 2015-2025, Cambodia recorded the strongest progress over the decade. These countries still have considerable scope to accelerate sustainable development.

Timor-Leste became the 11th member of ASEAN in 2025, and its SDG performance is reported in Table 18.1. Despite global shocks such as the COVID-19 pandemic, the region has maintained consistency and recorded marginal improvements since 2015. Most countries have converged towards broadly similar SDG index scores and demonstrated steady progress. Some countries that started from lower baselines, such as Cambodia and Myanmar, have registered greater absolute improvements than several other economies (Box 18.1). Taken together, these trends suggest that ASEAN countries require differentiated response mechanisms to address their specific challenges. They also indicate areas where ASEAN-India cooperation can create impact through targeted interventions.

Table 18.1: SDG Index Score of ASEAN Member States

Country	2000	2010	2015	2020	2025	2015-2025 (Absolute Change) (%)
Brunei Darussalam	61.48	63.51	65.82	66.71	68.95	3.13
Cambodia	46.65	53.35	57.77	62.58	65.31	7.54
Indonesia	59.95	63.19	65.1	69.31	70.81	5.71
Lao PDR	50.31	55.83	59.78	61.64	62.53	2.75
Malaysia	64.16	66.08	68.38	69.21	70.38	2
Myanmar	49.37	54.86	57.36	61.82	62.42	5.06
The Philippines	58.21	61.12	63.66	67.38	69.87	6.21
Singapore	67.78	70.19	71.22	72.33	73.82	2.6
Thailand	66.83	69.98	72.75	74.07	75.43	2.68
Timor-Leste	52.95	59.3	62.23	65.26	66.15	3.92
Vietnam	60.57	66.45	70.31	71.19	73.84	3.53

Source: Sachs et al. (2026)

Box 18.1: The CLMV Gap

ASEAN began with five founding members—Malaysia, the Philippines, Indonesia, Thailand, and Singapore—bringing together Southeast Asian countries under a common association. Brunei Darussalam joined later, followed by Viet Nam, Lao PDR, Myanmar, and Cambodia. This expansion created a development gap between the wealthier established members and the newer members, which has often been described as a "two-tier ASEAN" (Menon, 2013). These countries share a common colonial history, with Cambodia, Lao PDR, and Viet Nam under French colonial rule and Myanmar under British rule. After decolonisation, they undertook economic reforms and opened their economies during the 1980s and 1990s. Following these reforms, the CLMV countries experienced economic growth and rising foreign investment. Jin and Kang (2025) examined sustainable development trajectories in CLMV countries for 1990-2023 and found that reforms significantly improved SDG performance, particularly in poverty reduction, health, infrastructure, education, and partnerships (Jin and Kang, 2025). These countries also adopted a common regional approach through CLMV summits, which began in 2004 and focused on strengthening cooperation within the region and with external partners. Sustained efforts over the decade helped reduce disparities, particularly in infrastructure connectivity, agriculture, tourism, and human resources. Tourism remains one of the core economic activities in CLMV countries. Moska et al. (2024) examine its growing role in shaping Southeast Asia's tourism economy amid regional integration and expanding intra-ASEAN connectivity. Integration into regional tourism networks has increased tourist mobility, infrastructure development, and cross-border economic cooperation (Moska et al., 2024).

18.2.2.3 The Implementation and Data Gaps

The ASEAN SDG Indicators Progress Report also provides a detailed assessment of progress for 2016-2023. The report comprehensively covers all 17 goals and 68 corresponding targets. Each target is represented by one or more indicators, forming a total of 80 unique indicators (ASEAN Secretariat, 2025).[1] However, one of the region's major challenges in monitoring the SDGs remains limited data availability, as a result of which 101 global SDG indicators have not been covered. Myanmar has not submitted any VNR since the implementation of the SDGs in 2015. The challenge therefore lies not only in implementation capacity but also in monitoring and assessment.

18.2.2.4 Thematic SDG Priorities

At an aggregate level, ASEAN has demonstrated progress in poverty reduction, with the proportion of the population living below national poverty lines declining from 13.3 per cent to 10.8 per cent between 2016 and 2023. The region has shown mixed outcomes in industrialisation, with stagnant manufacturing performance but improvements in unemployment rates, which declined from 11.2 per cent to 8.5 per cent for both sexes aged 15-24 years. In terms of universal access to energy services, measured through access to electricity under indicator 7.1.1, ASEAN has made significant progress, rising from 88.5 per cent in 2016 to 95.7 per cent in 2023.[2]

Climate-related disasters pose a major threat to ASEAN's development gains (Box 18.2). The region's concentration along coastlines intensifies its exposure to cyclones, floods, and rising sea levels. This has contributed to regression on SDG 13, with an increase in deaths and people affected by disasters, as reflected in indicator 13.1.1 on deaths and missing persons per 100,000 people (Sachs et al., 2025). The region is projected to remain among the most vulnerable to climate change globally, primarily because of its geographic location (Overland et al., 2021). The Climate Risk Index Report 2026 identifies Myanmar as the second most affected country during 1995-2024, with one of the highest numbers of absolute fatalities from weather events such as cyclones, including Cyclone Nargis in 2008, floods, and other hazards. The Philippines and India are also listed among the top 10 most affected countries,

Box 18.2: Localisation Practices Adopted in the ASEAN Region

The Philippines: With its decentralised structure of governance (via the Department of Interior and Local Governance), the national developmental plans were localised. It started during the MDGs and supported innovations in the local processes. One of the prime examples is MDG FACES (Family Based Actions for Children and their Environs in the Slums), which expanded to 127 cities by 2015. The program focused on addressing the deprivations faced by select children in urban poor households. Moreover, the select children and their households shall be tracked until 2030 to analyse the implementation. This provides an imperative that sub-national SDG Frameworks could be adapted to local development priorities.

Cambodia and Lao PDR: As the ASEAN region remains prone to climate vulnerabilities, increased damage has been occurring every year. Moreover, there remain challenges with limited data availability. A disaster loss database has been initiated by UNDP, and all countries (except Malaysia and Singapore) have set up this database. In partnership with ADB, it integrated climate and disaster risk information into the public investment cycle in Cambodia, the Lao People's Democratic Republic, and Myanmar, particularly in the road sector. This represents a relevant dimension of localisation by integrating locally relevant risk information into public infrastructure investment decisions.

Viet Nam: As Vietnam ranks 78th in the "ease of doing business" index, start-up ecosystem builder and government agencies recognise the massive potential of the entrepreneurial spirit that exists in Vietnam. However, the country requires to build the spirit of innovation to scale-up the social impact start-ups and attract international investments. The setup of Saigon Innovation Hub (or SIHUB) promotes the youth to find innovative SDG solutions through skill development on social innovation and entrepreneurship; mentorship to early-stage impact startups. The SIHUB UNDP Youth Co: Lab focused on capacity building among relevant stakeholders to foster impact startups towards achieving the SDGs. This demonstrates how local innovation systems scale and mobilise the youth bringing in ground-level implementation.

Source: United Nations Development Programme, 2019

owing to heatwaves, droughts, floods, cyclones, and related events (Adil et al., 2025).

In terms of human development, ASEAN has made progress in reducing mortality ratios, particularly maternal mortality and neonatal and under-five mortality rates. Health financing and the health workforce increased substantially between 2016 and 2023. In education, ASEAN is approaching universal access, although challenges persist in quality and infrastructure, including a decline in access to computers in primary schools from 69 per cent to 65.3 per cent. One positive development is the decline in early marriage from 12.4 per cent to 9.7 per cent by 2023.[3] Overall, ASEAN has recorded gradual but slow improvements, with varied levels of progress among member states.

18.2.3. SDG Progress in India

In India, the Sustainable Development Goals have been interpreted as closely aligned with national development aspirations. According to the SDG India Index 2023-24, India has registered progress in five of the seventeen SDGs and stagnation in eight. The index measures progress across four categories: Achiever [100], Front Runner [65-99], Performer [50-64], and Aspirant [0-49]. India's approach to poverty measurement has moved beyond the SDG indicator on the proportion of the population living below the national poverty line (Global SDG Indicator 1.2.1 under Target 1.2) towards a multidimensional framework. NITI Aayog, in collaboration with United Nations Development Programme (UNDP) and Oxford Poverty and Human Development Initiative (OPHI), developed the National Multidimensional Poverty Index (NMPI), which provides data on

multidimensional poverty across more than 700 districts in India. The MPI estimates show that India's multidimensional poverty value nearly halved, with the proportion of the population in multidimensional poverty declining from 24.85 per cent to 14.96 per cent between 2015-16 and 2019-21 (NITI Aayog, 2023). Between 2020-21 and 2023-24, India also recorded progress in SDG 8 (Decent Work and Economic Growth), with the score increasing from 61 to 68, and SDG 13 (Climate Action), with the score increasing from 54 to 67, bringing both into the Front Runner category. Under the Pradhan Mantri Gram Sadak Yojana (PMGSY), India has achieved 100 per cent infrastructure connectivity through all-weather roads in 10 states. However, SDG 5 (Gender Equality) remains in the Aspirant category, with an overall score of 42. For one of its indicators, the female-to-male labour force participation ratio (15-59 years), where the target is 1, India recorded a score of 0.48 in 2023-24 (National Statistics Office, 2024).

One of the most institutionally significant features of India's SDG architecture is its localisation model, which rests on four pillars: institutionalisation, collaborative competition, capacity building, and a "whole-of-society" approach (United Nations Development Programme, 2024). India's decentralised governance structure, operating across central, state, and local levels, has enabled the country to address development needs across a vast and diverse population. This has been strengthened through the Aspirational Districts and Blocks Programme, which aims to support underdeveloped districts and localise the SDGs. Around 112 districts and 500 blocks were identified across the country as being at risk of falling behind. Although India continues to lag in some indicators, existing schemes and programmes are designed to address development challenges at the grassroots level.

India's welfare architecture illustrates how national schemes can be directly mapped onto SDG indicators, demonstrating measurable convergence between domestic development priorities and the 2030 Agenda. The Swachh Bharat Mission (SBM), India's landmark sanitation initiative, aligns closely with access to safely managed sanitation services and handwashing facilities, reflecting its contribution to public health. Similarly, the Pradhan Mantri Ujjwala Yojana (PMUY 2.0) has supported the shift towards clean cooking fuel and technology, thereby easing the transition away from traditional energy sources. The Jal Jeevan Mission (JJM) has improved access to safely managed drinking water services. Urban transformation has been supported through the Pradhan Mantri Awaas Yojana (PMAY), which addresses informal settlements and inadequate housing. Finally, financial inclusion is captured through the Pradhan Mantri Jan Dhan Yojana (PMJDY), which has been instrumental in bringing previously unbanked populations into the formal financial system.

India has been recognised for its Digital Public Infrastructure (DPI), including Aadhaar and UPI (Unified Payments Interface), which has enabled cashless transactions and Direct Benefit Transfers while helping overcome geographical distance and other physical barriers to reaching the country's population. This architecture was strengthened through the Jan-Aadhaar-Mobile trinity, which integrated financial accounts with identity and mobile connectivity, enabling direct subsidy delivery and timely assistance during the pandemic. DBT provides a strong example of a good-governance model that enhances financial autonomy among vulnerable communities.

India has played a leading role in advancing renewable energy cooperation through the International Solar Alliance (ISA). Its G20 presidency also advanced SDG implementation priorities through an ambitious seven-year action plan to accelerate progress on the SDGs. This effort sought to strengthen the collective voice of the Global South and make better use of global governance platforms (NITI Aayog, 2024). India's policy choices, which deliver SDGs through institutional architecture, have made sustainable development an integral element of systems thinking for development. Well-established monitoring frameworks, including the SDG India Index and the

Box 18.3: VNR Accountability and Commitment

A Voluntary National Review, or VNR, is a voluntary reporting mechanism that helps assess a country's progress in SDG implementation. It enables countries to present progress, challenges, and best practices developed during implementation and is presented annually at the High-Level Political Forum on Sustainable Development (HLPF). Since VNRs are the only official country-level reporting source for the 2030 Agenda, tracking their submission is essential. VNR submissions across ASEAN show an uneven pattern, with Indonesia and the Philippines reporting the highest number, at four each. Myanmar is the only member state that has not submitted a VNR during the period, creating a gap that limits visibility of the country's development situation. India has submitted three VNRs, most recently in 2025, demonstrating both capacity and willingness to institutionalise the SDGs.

Table 18.2: VNR Reporting in ASEAN

Country	Number of VNRs submitted	Year
Brunei Darussalam	2	2020, 2023
Cambodia	2	2019, 2023
Indonesia	4	2017, 2019, 2021, 2025
Laos PDR	3	2018, 2021, 2024
Malaysia	3	2017, 2021, 2025
Myanmar	--	--
Philippines	4	2016, 2019, 2022, 2025
Singapore	2	2018, 2023
Thailand	3	2017, 2021, 2025
Timor-Leste	2	2019, 2023
Vietnam	2	2018, 2023
India	3	2017, 2020, 2025

Source: United Nations High-Level Political Forum on Sustainable Development (2026)

Northeastern Region District SDG Index prepared by NITI Aayog, provide assessments of the performance of Indian states and Union Territories. During its second Voluntary National Review, India emphasised a "whole-of-society" approach, bringing private stakeholders and civil society organisations into a broader collective effort (Box 18.3).

18.3. Emerging Areas of Cooperation and Partnership

Uneven regional trajectories make external development partnerships increasingly relevant, particularly in areas where institutional and technological cooperation can accelerate SDG implementation. Mapping existing areas of

cooperation helps identify current alignments and gaps. It is therefore important to move forward by building stronger partnerships, especially as ASEAN-India cooperation represents an emerging Global South framework for SDG implementation. Cooperation on sustainable development between ASEAN and India was formalised well before the adoption of the United Nations Sustainable Development Goals in 2015. Over time, this cooperation has evolved in line with priorities such as innovation, capacity building, biodiversity conservation, and climate action.

18.3.1. Institutional and Financing Framework

The ASEAN-India partnership has therefore moved from an economic and political relationship towards one increasingly anchored in sustainability and innovation. A key feature of this evolution has been the establishment of dedicated financial mechanisms. The Plan of Action (POA) for the ASEAN-India Partnership created pathways to connect ASEAN-India funds and financial cooperation activities with green growth, clean energy, and sustainable development. The four major funds are the ASEAN-India Cooperation Fund (AIF, 1996), the ASEAN-India Green Fund (AIGF, 2007), the ASEAN-India S&T Development Fund (AISTDF, 2008), and the ASEAN-India Fund for Digital Future (AIFDF, 2024). These dedicated mechanisms provide institutional support for operational activities. The AIF, the original flagship initiative of the partnership, seeks to address development gaps through three pillars: political-security, economic, and socio-cultural cooperation. The ASEAN-India Green Fund was launched in 2007 to support areas such as climate change, renewable energy, biodiversity conservation, clean technologies, and energy efficiency (Ministry of External Affairs, Government of India, 2018). As the need for deeper cooperation in science and technology emerged, the ASEAN-India Science Technology and Development Fund (AISTDF) was established to facilitate collaborative pilot projects in key areas, including agricultural technologies, renewable and alternative energy, biodiversity, food-processing technologies, advanced materials, and space science and technology.

18.3.2. Digital Public Infrastructure and Financial Inclusion

With the rise in global uncertainties and vulnerabilities, including the COVID-19 pandemic, dependence on technology has increased, with digital platforms becoming indispensable for essential services such as education, healthcare, e-commerce, and digital payments. India began addressing the need for digital infrastructure through the launch of the Digital India initiative in 2015. Today, India's Digital Public Infrastructure model remains one of the most prominent examples of large-scale digitisation. Through UPI, the transaction process has helped narrow rural-urban divides and gender-based disparities in access to digital payment systems. The cost-effective design of such systems has enabled benefits to reach small-scale businesses, education systems, and women in rural areas. These systems could offer useful lessons and be operationalised through the AIFDF for select ASEAN countries, where cost-effectiveness is a critical factor in development programmes. The ASEAN-India Joint Statement on Digital Transformation acknowledges the success of this model and emphasises the sharing of knowledge, experiences, and best practices in the development, implementation, and governance of DPI. Moreover, innovative financing mechanisms can be explored to develop a cross-border unified UPI system that simplifies business, trade, and investment across the region. India's domestic institutional experience can be adapted for regional development in ASEAN and extended to climate and disaster resilience.

18.3.3. Climate and Disaster Resilience

Because the ASEAN region remains highly vulnerable to disasters, economic losses have become increasingly frequent. Disaster resilience therefore represents a significant area for development cooperation. Against this backdrop, the ASEAN Agreement on Disaster

Management and Emergency Response (AADMER) provides a framework for strengthening disaster preparedness and response. In addition, strategic interventions under the ASEAN Vision on Disaster Management 2025 are guided by three principles: institutionalisation and communications, finance and resource mobilisation, and partnerships and innovations.[4]

Similar efforts have been advanced through initiatives such as the Coalition for Disaster Resilient Infrastructure (CDRI), an India-led global initiative that has developed the world's first Global Infrastructure Risk Model and Resilience Index to assess infrastructure-related economic losses. Climate and disaster resilience, under SDG 13, remains a natural anchor for the ASEAN-India Green Fund. At present, the Fund's portfolio includes biodiversity projects related to the implementation of the Nagoya Protocol.

18.3.4. Towards 2030: Priorities for Deepening Cooperation

To translate foundational plans into measurable outcomes aligned with the 2030 Agenda, the areas discussed above point towards a meaningful partnership agenda. The four financial mechanisms—AIF, AIGF, AISTDF, and AIFDF—have been developed incrementally and remain a distinctive binding feature of ASEAN-India cooperation. They also represent a valuable example of regional cooperation and South-South partnership with few direct parallels. Standardising monitoring and accountability will be essential to ensure effective implementation of these funds. India's Digital Public Infrastructure model has already demonstrated regional relevance through the UPI-PayNow linkage with Singapore. The next priority should be to extend such cooperation to the CLMV economies, where the marginal impact of financial inclusion is likely to be highest. Importantly, these priorities do not require a new institutional architecture; they can be built on existing cooperation platforms and financial mechanisms. As the 2030 deadline approaches, the success of the ASEAN-India partnership will depend on its ability to convert existing architecture into implementation.

18.4. Conclusion

The ASEAN-India relationship has matured over three decades from a trade- and connectivity-led partnership into one increasingly oriented towards sustainable development cooperation. ASEAN's SDG Indicators Progress Report shows real and measurable gains, including poverty reduction, declining early marriage rates, and near-universal electricity access. India's own trajectory demonstrates development transformation at scale over the past decade, with multidimensional poverty nearly halved, and climate action and decent work registering considerable progress according to the SDG India Index. Seen together, these trends suggest that institutional commitments have been converted into measurable outcomes across ASEAN and, prominently, in India.

The development experience of the CLMV countries shows that targeted, capacity-oriented cooperation can generate substantial returns. India's Digital Public Infrastructure model, validated through UPI's reach into rural and underserved populations and its role in reducing gender gaps, offers important lessons for some CLMV countries. This has also been formalised in the ASEAN-India Joint Statement on Digital Transformation and can be converted into an operational agenda through the Digital Future Fund launched in 2024. Lastly, the region's climate exposure and vulnerability require the highest level of attention within regional cooperation frameworks. India's experience, from the International Solar Alliance to CDRI's Global Infrastructure Risk Model, offers direct value to the region, suggesting that disaster-resilience financing gaps can be realistically addressed through partnership-building efforts that are already taking shape.

As the 2030 deadline approaches, the ASEAN-India partnership is well positioned to introduce its next phase of cooperation, building on the foundation of

three decades of deep engagement and a decade of experience with SDG monitoring and localisation. This offers a model for the wider Global South suggesting what sustained, mutually reinforcing partnership can achieve on the path to 2030 and beyond.

Endnotes

1 Interpretations of ASEAN progress made from report Annex of the ASEAN SDG Indicators Progress Report, 2025

2 ibid

3 SDG 5: Indicator 5.3.1 Proportion of women aged 20-24 years who were married or in a union before age 18.

4 Association of Southeast Asian Nations (2024, October 10). ASEAN–India joint statement on advancing digital transformation. ASEAN.

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19 Environment, Climate Change and Energy Transition: Building a New ASEAN–India Partnership for Sustainable Development and Regional Resilience

Anbumozhi Venkatachalam

19.1. Introduction

The Indo-Pacific region stands at a critical juncture in global environmental governance. As rapid industrialization, demographic growth, and urbanization accelerate across South and Southeast Asia, the imperative to decouple economic expansion from environmental degradation has become paramount. ASEAN member states and India represent two of the world's most dynamic regional economies, yet both are exceptionally vulnerable to climate-induced disruptions.

Shaping new ASEAN–India environmental cooperation requires understanding it within broader theories of regional integration and international political economy. Traditional theories of regional economic or development cooperation emphasized trade liberalization and economic integration as primary drivers of cooperation. However, contemporary scholarship on "new regionalism" argues that regional institutions increasingly address multidimensional challenges—including climate change, environmental protection, public health, digital governance, and energy security—that transcend national boundaries (Börzel and Risse, 2016).

From this perspective, environmental governance for regional economic resilience constitutes a public good. Public goods are characterized by non-excludability and non-rivalry; their benefits extend across national borders and cannot be confined to individual countries. Climate stability, biodiversity conservation, transboundary pollution control, disaster risk reduction, and regional energy security all exhibit these characteristics. Individual countries often underinvest in such goods because benefits are widely shared while costs are borne domestically, creating collective action problems.

Several past studies (ADB 2014, ERIA 2020, RIS 2023) further suggest that regional organizations reduce transaction costs associated with collective action. Through common rules, information sharing, regulatory harmonization, and dispute resolution mechanisms, institutions facilitate cooperation that would otherwise be prohibitively costly. ASEAN itself has historically performed this coordinating role in areas such as trade, disaster management, and economic integration. However, environmental cooperation remains comparatively weak because institutional arrangements have not evolved at the same pace as economic integration (Anbumozhi et al., 2022).

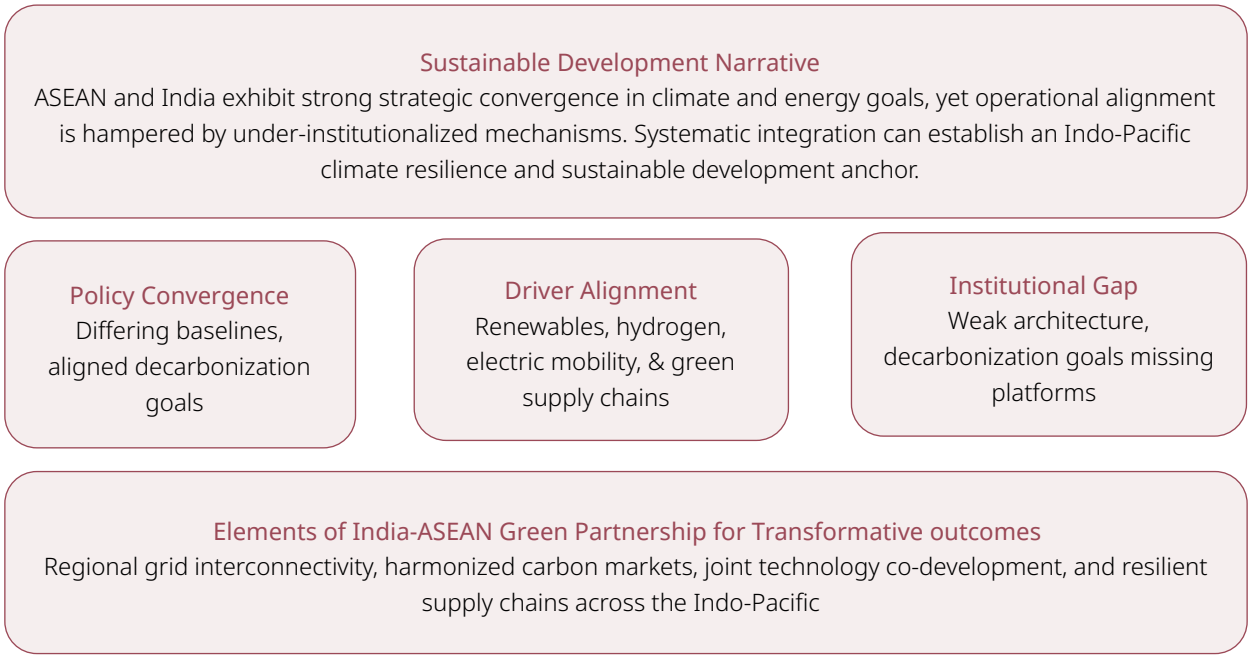
The concept of functional spillover, first developed in neo-functionalist theories of European integration, offers another useful analytical lens. It suggests that cooperation in one policy area creates pressure for cooperation in related sectors. In ASEAN–India relations, expanding trade, investment, and industrial integration will generate stronger demand for cooperation on energy infrastructure, environmental standards, carbon accounting, digital governance, and sustainable finance. For example, renewable energy supply chains cannot operate efficiently without harmonized technical standards, interoperable electricity markets, common investment rules, and coordinated innovation policies.

At the same time, several institutionalist scholars caution that Asia differs fundamentally from Europe in its approach to regional governance (Markendaya, 2023). ASEAN's consensus-based decision-making, often described as the "ASEAN Way", prioritizes national sovereignty, non-interference, and flexible cooperation over legally binding supranational institutions. While this approach has contributed to regional stability, it also limits the development of enforceable environmental governance mechanisms. Consequently, ASEAN–India cooperation must reconcile increasing functional interdependence with enduring political preferences for decentralized governance.

This chapter evaluates the fundamental hypothesis of regional cooperation and alignment that despite marked disparities in economic development, institutional maturity, and national energy portfolios, ASEAN and India demonstrate a growing structural convergence in their resource governance paradigms, net-zero pathways, and climate mitigation strategies. However, their functional engagement remains constrained by institutional fragmentation, absent dedicated climate financing vehicles, and under-developed market linkages, making it an imperative for strengthening India-ASEAN green partnership.

Figure 19.1 illustrates the core analytical hypothesis. ASEAN and India show strong strategic convergence in sustainable development goals, climate risk mitigation, and the acceleration of low-carbon energy transitions, but operational alignment remains constrained by under-institutionalized mechanisms.

Figure 19.1: Core Analytical Proposition for India-ASEAN Cooperation Framework for Sustainable Development



Source: Author's own

To rigorously test this hypothesis, this chapter investigates the following five core propositions.

a) **Policy Convergence:** India and ASEAN member nations (AMS) are progressively aligning with international climate targets such as Paris Agreement to be achieved by 2030, Sustainable Development Goals (SDGs) by 2030, and Net-Zero targets by the middle of the century, though their operational pathways reflect distinct socio-economic realities and structural energy dependencies.
b) **Transition Drivers:** Technological innovations in renewable energy deployment, grid electrification, green hydrogen synthesis, and battery material supply chains offer untapped synergies for across ASEAN -India cross-border investment and technological co-development.
c) **Institutional Gaps:** Current ASEAN–India bilateral and multilateral architecture lacks dedicated funding vehicles, structured high-level policy dialogues, and binding regulatory frameworks for co-management of agreed cooperation frameworks.
d) **Regional Market Potential:** Systematic integration of cross-border power grids, regional carbon markets, climate finance mechanisms, and resilient infrastructure could dramatically reduce the aggregate economic cost of energy transition and resource governance for both ASEAN and India.
e) **Geopolitical Context:** Deepened climate and energy alignment between ASEAN and India provides a stabilizing force for Indo-Pacific energy security, supply chain resilience, and low-carbon trade architectures.

The remainder of this chapter explores these propositions by first examining the environmental, climate, and energy transition challenges confronting the Indo-Pacific before assessing national strategies, regional policy frameworks, and future opportunities for ASEAN–India cooperation.

19.2. Global, Regional, and National Context of Environment, Climate, and Energy Transition Challenges

19.2.1. Global Context on the Imperatives of Sustainable Development

The global community has entered what many scholars describe as the Anthropocene, an era in which human activities have become the dominant force shaping Earth's ecological systems. Rapid industrialization, urbanization, population growth, and unsustainable consumption patterns have significantly altered atmospheric composition, land use, freshwater systems, and biodiversity. According to the Intergovernmental Panel on Climate Change (IPCC, 2022), global average temperatures have already increased by approximately 1.2°C above pre-industrial levels, resulting in increasingly frequent and severe climate-related disasters. Simultaneously, the Kunming–Montreal Global Biodiversity Framework recognizes that approximately one million species face extinction due to habitat destruction, pollution, invasive species, overexploitation, and climate change.

Environmental degradation extends beyond climate change. Water scarcity affects nearly half of the global population for at least part of the year, while land degradation threatens agricultural productivity and food security. Marine ecosystems experience increasing stress from overfishing, coastal development, ocean acidification, and plastic pollution. Air pollution remains one of the leading environmental causes of premature mortality worldwide, disproportionately affecting rapidly urbanizing regions of Asia.

Energy systems remain central to these challenges. Fossil fuels continue to account for nearly four-fifths of global primary energy consumption, making the energy sector responsible for approximately three-quarters of global greenhouse gas emissions. Achieving

the objectives of the Paris Agreement therefore requires an unprecedented transformation of energy production, transmission, and consumption systems. Renewable energy technologies, electrification, energy efficiency improvements, green hydrogen, battery storage, and digital energy management have consequently become essential components of sustainable development strategies worldwide.

The 2030 agenda on Sustainable Development Goals (SDGs) underscore the interdependence of environmental protection, economic development, and social inclusion. Goals relating to affordable and clean energy, climate action, responsible consumption and production, sustainable cities, life below water, and life on land collectively highlight the integrated nature of sustainability challenges. Increasingly, governments recognize that climate policy cannot be separated from industrial policy, innovation systems, trade competitiveness, and long-term economic resilience.

19.2.2. Environmental Degradation and Threats to Sustainable and Inclusive Development in ASEAN

The ASEAN region, home to over 600 million people, faces severe systemic ecological pressures that threaten long-term socioeconomic stability. As one of the world's fastest-growing industrial hubs, economic growth is being driven by an unsustainable resource use. Beneath the region's dynamic market performance lies a compounding crisis: ecological degradation, water scarcity, and mounting climate vulnerabilities that threaten to undo decades of socioeconomic progress.

a) **Biodiversity:** As a home to the world's second-richest ecosystem in biological diversity, Southeast Asia's rainforests and marine sanctuaries are among Earth's most critical natural assets. Yet, human encroachment and habitat destruction are triggering rapid extinction rates. Current estimates warn that up to 40 per cent of the region's genetic biodiversity risks permanent loss if current degradation rates continue. The disappearance of these species is not just an ecological tragedy; it erodes essential ecosystem services—such as natural pollination, pest control, and soil fertility—that local agriculture and rural livelihoods depend on.

b) **Deforestation and Hydro-Climatic Feedback Loops:** The destruction of Southeast Asia's natural cover goes together with climate modification. Continuous tropical deforestation at an alarming rate of 8,000 km² annually is altering weather patterns far beyond the forest canopy. Tree canopy loss breaks the local hydrologic cycle, directly contributing to a 7 per cent reduction in regional precipitation. This creates dangerous feedback loops: reduced rainfall triggers localized drought cycles, which in turn make remaining forests more vulnerable to fires and further decay. Forests do not merely react to climate—they actively shape regional rainfall. Losing tree cover directly starves surrounding agricultural zones of essential precipitation.

c) **The Brewing Freshwater Crisis:** Southeast Asia's economic trajectory relies heavily on water-intensive sectors, from semiconductor manufacturing to industrial agriculture. However, water management systems across the region are buckling under dual pressure, Groundwater reservoirs are being depleted faster than natural recharge rates can sustain.: Unchecked industrial effluent and untreated surface run-off are contaminating critical river basins. Forecast models project a 30 per cent shortfall in freshwater supplies required to sustain regional economic growth by 2050. Without dramatic infrastructure overhauls and stricter usage regulations, water scarcity will become a primary bottleneck to industry and urban development.

d) **The Waste Proliferation Crisis:** Southeast Asia faces a structural mismatch between population size and waste production. While the region accounts for 4 per cent of the global population, it generates 9 per cent of global waste. Current waste share 9 per cent of total global waste is expected to expand rapidly to total waste volume of 80 million tons/year, by 2050. The primary threat

is to marine and coastal ecosystems, where rapid urbanization without matching municipal waste infrastructure has made the region an epicenter for oceanic plastic pollution, threatening coastal tourism, fisheries, and marine biodiversity.

e) **Macroeconomic Vulnerability to Climate Disasters:** The convergence of habitat loss, water stress, and pollution severely diminishes the region's natural resilience to extreme weather events. Typhoon intensity, severe flooding, and prolonged droughts are no longer isolated incidents—they are systemic financial shocks. Economic modeling by ADB and ERIA indicates that unchecked climate impacts could contract ASEAN's annual GDP by up to 6 per cent by 2050.

Addressing these interconnected threats requires a shift from reactive disaster response to proactive regional policy. Key priorities for ASEAN economies include strict forest conservation and restoration, investing in modern waste management systems to decouple economic growth from waste volume; regulating groundwater extraction and restoring surface water bodies before supply deficits hit critical thresholds. Protecting Southeast Asia's ecology is no longer merely an environmental concern—it is an economic prerequisite for long-term stability and growth, wherein India ASEAN partnership could be a game changer.

ASEAN and India have progressively recognized this changing strategic landscape. India's Act East Policy and ASEAN's Outlook on the Indo-Pacific (AOIP) emphasize economic integration, connectivity, resilience, and sustainable development as mutually reinforcing objectives. Likewise, both have embraced the Paris Agreement, SDGs, and numerous multilateral environmental agreements as guiding frameworks for national development strategies. India has announced ambitious renewable energy expansion programmes and committed to achieving net-zero emissions by 2070, while several ASEAN member states have established carbon neutrality or net-zero targets extending to 2050 or 2065. These developments suggest increasing convergence in long-term policy aspirations despite considerable diversity in institutional arrangements and development priorities.

However, important structural challenges remain. Energy systems across ASEAN continue to depend heavily on fossil fuels, particularly coal and natural gas, while India's growing electricity demand presents major decarbonization challenges despite rapid renewable energy expansion. Institutional capacities differ substantially among ASEAN member states, resulting in uneven implementation of climate policies and environmental regulations. Financing gaps continue to constrain investments in renewable energy, climate adaptation, and resilient infrastructure.

19.2.3. Climate Risk and Vulnerability Mapping of ASEAN

As detailed in geographical risk assessments, the broader Indo-Pacific region experiences acute risk profiles comparable only to sub-Saharan Africa, with projected long-term GDP losses between 2 per cent and 8 per cent by 2100 (ADB, 2012). It has been estimated that India would experiences multi-hazard vulnerability including severe water insecurity, agricultural heat stress, extreme urban thermal loads, and extensive coastal flooding along its major economic corridors by 2100. On the other hand, characterized by high exposure to coastal inundation, archipelagic Southeast Asian countries like Indonesia, Philippines will face severe tropical cyclones, marine ecosystem degradation, and urban heat island effects, while continental ASEAN member states which includes Vietnam, Thailand, Myanmar, Lao PDR, Cambodia would be highly vulnerable to altered monsoon mechanics, basin-wide hydro-ecological shifts along the Mekong River, inland flooding, and agricultural yield instability. Table 19.1 illustrates the socio-economic risk of major climate hazards in India and ASEAN.

Table 19.1: Climate Risks and Socio-economic Impacts in India and ASEAN

Country / Sub-Region	Primary Climate Hazards	Dominant Socioeconomic Risk Factor
India	Water Insecurity, Urban Heat Stress, Coastal Flooding	Agricultural output shock and urban infrastructure stress
Indonesia and Philippines	Coastal Flooding, Urban Heat Stress, Food Insecurity	Vulnerability of low-lying coastal cities and island communities
Mekong Sub-Region	Water Insecurity, Food Insecurity, Coastal Flooding	Hydrological volatility affecting agriculture and power generation
Malaysia and Singapore	Coastal Flooding, Energy Insecurity, Urban Thermal Loads	Critical infrastructure protection and energy supply resilience

Source: Author's own

19.2.4. The Regional Energy Transition Paradox

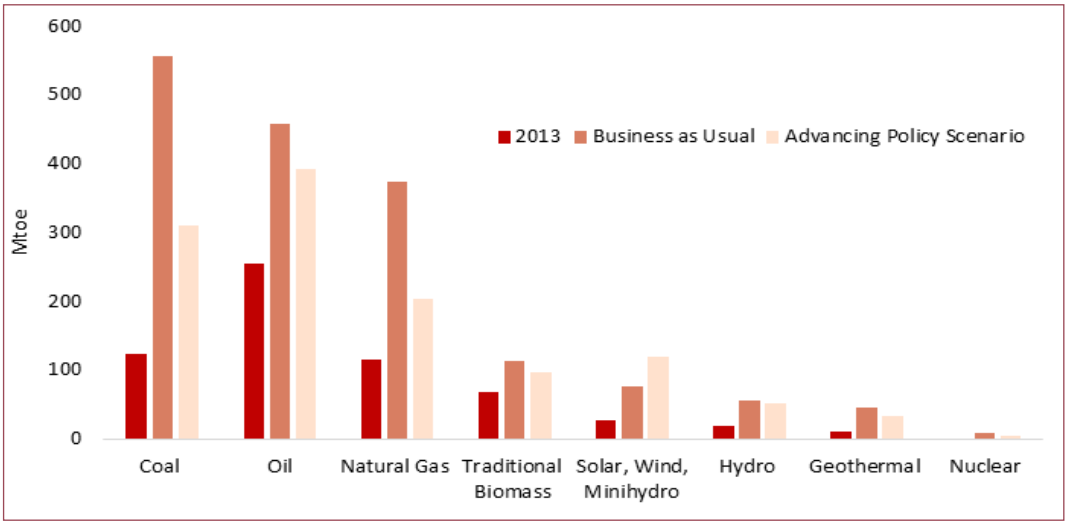
The energy sector accounts for 51 per cent of total greenhouse gas (GHG) emissions within ASEAN. The primary structural challenge facing the region is a growing reliance on fossil fuels. Fossil fuel demand (coal, petroleum, and natural gas) is projected to quadruple by 2050 under business-as-usual scenarios, while the current share of renewables in the primary energy supply mix remains low at approximately 14 per cent.

ASEAN countries face challenges in developing and distributing energy resources, from their remote locations to those urban centers of production and consumption where they are needed most. Moreover, the economic and energy geography of Southeast Asian countries is highly uneven. The challenge of energy resource development, distribution and energy poverty of this region is rivaled by the difficulties associated with improving energy security and reducing carbon emissions. As of 2025, this region has at least 134 million people, or 22 per cent of the population without access to modern electricity. It is home to thousands of low-lying islands comprising major portions of Indonesia and the Philippines that are extremely disadvantaged in-terms of energy access. Following on from the Paris Agreement, and the ratification of nationally Determined Contributions (NDCs), the countries in this region are paying more attention to advancing viable and scalable low-carbon energy transformation options.

In the business-as-usual scenario, the energy supply of these countries is projected to increase steadily from 619 million tons of oil equivalent in 2013 to 1,685 million tons of oil equivalent in 2040, growing at an annual rate of 4.7 per cent (Figure 19.2). This projected growth is higher than the trends observed between 1990 and 2013, which averaged 4.2 per cent per year. Carbon emissions during the period are estimated to grow at the rate of 4 per cent per year. The difference between the total energy use in the advancing policy scenario and the business-as-usual scenario shows approximately the potential of clean energy development and energy saving that could be achieved by these countries through the implementation of advanced policies on efficiency in electricity power production and consumption, transport, residential, and industry sectors. These policies are expected to contribute to a reduction of energy demand of 13 per cent by the end of 2030 and thus avoided carbon emissions of the same or larger magnitude.

It is estimated that the overall low-carbon energy supply infrastructure investments to meet the NDC targets will steadily rise, and cumulatively US$ 2,100 billion is needed by the year 2030 for Southeast Asian countries (Anbumozhi et al., 2017). About 46 per cent of this requirement will be in the power sector, followed

Figure 19.2: Comparison of Future Energy Supply Scenarios in ASEAN in 2030



Source: ERIA (2025)

by energy efficiency by about 17 per cent. There is demand for low-carbon investment finance for many types of projects with diverse needs (Table 19.2). Each investment has its own distinctive risk profile, in which different factors – market, technical, regulatory – have different degrees of prominence. From an infrastructure financing perspective, there is an overreaching concern on low carbon investments, that the cash flows during the project's lifetime may be insufficient to pay back the amounts invested in real terms and earn a reasonable return, because of regulatory, market and financial barriers. Regulatory barriers include misalignment of energy policies with climate and social development policies. Subsidies remain as a market barrier that has implications on the energy prices and cost advantages of low-carbon energy production and consumption. Abrupt fluctuations in exchange rates and rise in interest rates constitute financial risks related to new investments. Similarly, investors have different time horizons, and tolerance for risk. There is no easy

Table 19.2: Financing Vehicles for Pooling Private Investments in Low-Carbon Energy Infrastructure

Category	Special Purpose Vehicles	Green Bonds	Pooled Vehicles
Description	Leasing scheme using debt facilities	Fixed income debt securities	Green infrastructure funds, private equity funds, and other listed vehicles
Actors	Provided by corporate banks or institutional investors or utilities	Issued by governments, international financial institutions or corporate banks	Issued by asset managers, investment banks or special private funds
Advantage	Equipment can be leased to end users to reduce the impact of cash flow, while giving access to large scale debt finance	High degree of security when backed by governments	Exposure to companies or assets for small investors
Typical application	Energy efficiency improvement or micro grid	All mature clean technologies such as wind and solar	All mature technologies, predominantly large-scale soil and wind power

Source: Author's own

solution to tackle these risks. A learning process is needed between the policy makers and the finance industry to de-risk investments. Policy makers of the region need to understand the types of risks and the regulatory and incentive mechanisms necessary to attract investments. The financial community needs to appreciate the distinctive nature of low carbon investments from the sustainable development perspective and to develop suitable vehicles to finance low-carbon energy infrastructure projects in a way that aligns with varying sizes, operational models and investment objectives. Intermediaries, such as international financial institutions and private corporate banks can offer effective financial products as exemplified in Table 19.2.

19.3. India's Strategies in the Environment, Climate, and Energy Domains

India's environmental and climate policy has undergone a profound transformation during the past two decades. Traditionally, environmental protection was viewed largely as a regulatory issue concerned with pollution control, forest conservation, and natural resource management. Today, however, environmental sustainability has become an integral component of India's development strategy, industrial policy, energy security, and international diplomacy. The country seeks to reconcile rapid economic growth with environmental sustainability through a policy framework that integrates climate mitigation, adaptation, renewable energy expansion, digital innovation, and green industrialization.

As the world's most populous country and the third-largest emitter of greenhouse gases in absolute terms, India's actions are critical for achieving global climate objectives. Yet India's per capita emissions remain substantially below those of advanced economies, highlighting the country's continued emphasis on climate equity and the principle of common but differentiated responsibilities under the United Nations Framework Convention on Climate Change (UNFCCC). Consequently, India's climate strategy aims not only to reduce emissions but also to promote inclusive development, poverty reduction, energy access, and economic competitiveness.

India's approach is increasingly characterized by a transition from incremental environmental regulation toward a comprehensive green development paradigm. Flagship initiatives such as the National Action Plan on Climate Change (NAPCC), the National Green Hydrogen Mission, the International Solar Alliance (ISA), Mission LiFE (Lifestyle for Environment), and ambitious renewable energy deployment demonstrate the country's effort to combine domestic development objectives with global climate leadership.

19.3.1. Environmental Governance in India

Environmental governance in India rests upon an extensive institutional and legislative framework developed over several decades. Constitutional provisions, judicial activism, environmental legislation, and decentralized governance have collectively contributed to strengthening environmental management.

The Ministry of Environment, Forest and Climate Change (MoEFCC) serves as the principal agency responsible for environmental policy formulation, biodiversity conservation, pollution control, and climate policy coordination. Supporting institutions such as the Central Pollution Control Board (CPCB), National Biodiversity Authority, National Green Tribunal (NGT), and State Pollution Control Boards play important regulatory roles.

- India has enacted numerous laws addressing environmental protection, including:
- Environment Protection Act (1986)
- Air (Prevention and Control of Pollution) Act
- Water (Prevention and Control of Pollution) Act
- Biological Diversity Act
- Forest Conservation Act
- Wildlife Protection Act

Table 19.3: India's Lines of Credit to ASEAN Member States

(US$ million)

Country	Number of LoCs	Total amount (US$ million)	Major sectors / project areas
Cambodia	4	102.12	Stung Tasal project, transmission capacity, water resources development
Lao PDR	4	153.83	Irrigation schemes, transmission and distribution, hydropower, electrification, renewable energy
Myanmar	10	475.57	Optical fibre, telecommunications, railway rehabilitation, refinery renovation, vehicle plant, transmission lines, petrochemical complex, farm mechanisation and irrigation
Vietnam	6	491.50	Textile machinery, hydropower support, equipment and supplies, strategic projects
Total	24	1,223.02	Infrastructure, energy, connectivity, irrigation, telecommunications and strategic projects

Source: EXIM Bank / Ministry of External Affairs / Department of Economic Affairs, Government of India.

Together, these instruments provide the legal foundation for pollution control, biodiversity conservation, environmental impact assessment, and ecosystem management.

One notable feature of India's environmental governance has been the increasingly active role of the judiciary. The Supreme Court and the National Green Tribunal have expanded the interpretation of environmental rights under Article 21 of the Constitution, recognizing a clean and healthy environment as an essential component of the fundamental right to life. Judicial interventions have significantly influenced air quality management, river conservation, forest protection, and industrial pollution control.

Forest conservation remains another major priority. India has expanded afforestation programmes through the Compensatory Afforestation Fund Management and Planning Authority (CAMPA), Green India Mission, and various state-level initiatives. Although challenges remain regarding forest quality and biodiversity, these programmes contribute both to carbon sequestration and ecosystem restoration.

At the same time, India has increasingly embraced circular economy principles. National initiatives promoting resource efficiency, waste segregation, plastic waste management, extended producer responsibility (EPR), and recycling seek to reduce material consumption while improving industrial competitiveness. These policies align closely with emerging ASEAN initiatives on circular economy, creating opportunities for future regional cooperation. India's development cooperation with ASEAN also provides opportunies in new areas in climate agenda (Table 19.3).

19.3.2. India's Climate Change Strategy

India's climate policy has evolved considerably since the adoption of the National Action Plan on Climate Change (NAPCC) in 2008. The NAPCC established eight national missions addressing solar energy, energy efficiency, sustainable habitats, water conservation, sustainable agriculture, Himalayan ecosystems, Green India, and climate knowledge generation. These missions have gradually expanded into a broader climate policy architecture encompassing mitigation, adaptation, resilience, disaster risk reduction, and green industrial transformation.

At the international level, India's updated Nationally Determined Contributions (NDCs) under the Paris Agreement demonstrate increasing ambition. The country has committed to:

- Reducing emissions intensity of GDP;
- Increasing the share of non-fossil electricity generation;
- Expanding forest and tree cover;
- Strengthening adaptation and resilience.

India's announcement of achieving net-zero emissions by 2070, made during COP26, marked a significant milestone in global climate governance. Although later than many developed countries, the commitment reflects India's development priorities while signaling a long-term transition toward carbon neutrality.

A particularly innovative initiative is Mission LiFE (Lifestyle for Environment), which recognizes that behavioral changes are essential complements to technological innovation. Rather than relying exclusively upon regulatory measures, Mission LiFE encourages sustainable consumption patterns, resource efficiency, and citizen participation in environmental protection. This approach aligns with the broader recognition that climate mitigation requires societal transformation alongside technological progress.

Adaptation occupies an equally important place within India's climate strategy. Climate change has intensified droughts, floods, cyclones, glacial melting, and heatwaves, threatening agriculture, infrastructure, and vulnerable populations. Consequently, adaptation measures increasingly emphasize climate-resilient agriculture, early warning systems, disaster preparedness, water resource management, and resilient infrastructure.

Digital technologies are becoming central to these efforts. Remote sensing, artificial intelligence, geospatial analysis, and high-performance computing enhance climate forecasting, disaster management, and agricultural planning. These technological developments provide important foundations for future regional information-sharing platforms across the Indo-Pacific.

19.3.3. India's Energy Transition

India's energy transition represents one of the largest structural transformations currently underway in the global energy system. Rapid economic growth, urbanization, industrialization, and rising living standards continue to drive electricity demand upward. Meeting this demand while reducing greenhouse gas emissions presents one of the country's greatest policy challenges.

Historically, coal has dominated India's electricity generation. Coal remains important because of domestic availability, affordability, and energy security considerations. Nevertheless, the environmental costs associated with coal dependence have encouraged policymakers to accelerate renewable energy deployment.

The National Solar Mission has become a flagship initiative. Since its launch, India has emerged as one of the world's fastest-growing solar energy markets, supported by competitive auctions, declining photovoltaic costs, improved transmission infrastructure, and supportive government policies.

Wind power has similarly expanded, particularly in western and southern states, while hydropower continues to provide an important source of renewable electricity.

More recently, the Government launched the National Green Hydrogen Mission, recognizing hydrogen's strategic importance for decarbonizing difficult-to-abate sectors such as steel, fertilizers, chemicals, shipping, and heavy transport. India possesses considerable potential to become a major producer and exporter of green hydrogen owing to its abundant renewable energy resources and expanding manufacturing capabilities.

Battery storage and electric mobility constitute another important dimension of India's transition. The Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme, Production Linked Incentive (PLI) programmes for advanced chemistry cells, and investments in battery manufacturing seek to strengthen domestic industrial capacity while reducing transport emissions.

Grid modernization also plays a crucial role. As renewable electricity becomes increasingly variable, India is investing in smart grids, digital electricity management systems, energy storage technologies, and interstate transmission networks capable of integrating large volumes of renewable energy.

These developments position India not merely as a large renewable energy market but increasingly as a global manufacturing hub for solar modules, batteries, green hydrogen equipment, and clean technologies.

19.4. Common Sustainability Challenges to ASEAN and India

Several important regional frameworks guide ASEAN's sustainability paradigm. Major initiatives and efforts include:

- ASEAN Plan of Action for Energy Cooperation (APAEC)
- ASEAN Framework for Circular Economy
- ASEAN Strategy for Carbon Neutrality
- Agreement on Transboundary Haze Pollution
- ASEAN Agreement on Disaster Management and Emergency Response
- ASEAN Framework on Marine Debris
- ASEAN Sustainable Tourism Framework

Collectively, these initiatives demonstrate ASEAN's transition from environmental cooperation toward integrated sustainable development.

But significant challenges remain common to ASEAN member states, which are similar to the challenges faced by states of India.

Coal continues to account for a large proportion of electricity generation, making rapid decarbonization difficult without compromising energy security. Financing requirements for achieving net-zero pathways are enormous, requiring greater private sector participation and international climate finance. Land acquisition, transmission bottlenecks, regulatory uncertainty, and distribution company (DISCOM) financial constraints continue to affect renewable energy deployment. Furthermore, ensuring a just transition for coal-dependent communities remains a major socio-economic challenge. Consequently, both ASEAN and India's energy transition requires not only technological innovation but also institutional reform, market modernization, workforce development, and strengthened international partnerships.

Unlike India, ASEAN does not operate as a supranational authority. Instead, it functions through consensus-based regional cooperation among ten highly diverse member states that differ substantially in income levels, governance systems, energy resources, industrial structures, and institutional capacities. This diversity presents both strengths and challenges. While flexibility allows member states to pursue nationally appropriate pathways, implementation often proceeds unevenly across the region.

The ASEAN Community Vision 2045 and ASEAN Socio-Cultural Community Blueprint increasingly recognize sustainability as central to regional integration. Environmental protection, climate resilience, energy security, disaster management, biodiversity conservation, and circular economy principles have become integral components of ASEAN's long-term development agenda.

One of ASEAN's most promising initiatives is the ASEAN Power Grid (APG), designed to integrate national electricity systems through cross-border transmission infrastructure. Several studies indicate that regional electricity integration could reduce generation costs by optimising renewable energy

resources across countries. As highlighted, integrating renewable energy through regional transmission could save over US$ 25 billion over two decades, largely by replacing fossil-fuel generation with lower-cost renewable electricity. However, realizing these benefits requires significant investments in transmission infrastructure, regulatory harmonization, electricity market reforms, and regional governance.

Despite encouraging policy developments, ASEAN continues like India to face several structural barriers. First, investment gaps remain substantial. Achieving regional decarbonization will require trillions of dollars in energy, transport, industrial, and urban infrastructure. Second, regulatory fragmentation limits cross-border investment and regional electricity trade. Third, tariff and non-tariff barriers continue to affect low-carbon technologies, reducing opportunities for regional manufacturing integration. Fourth, institutional capacities vary considerably across member states, resulting in uneven policy implementation. Finally, digital readiness differs substantially across ASEAN. As illustrated by the Agriculture Digitalization Index presented in Table 19.4, countries such as Singapore, Australia, Japan, and Korea possess advanced digital ecosystems, while several developing ASEAN members continue to face constraints in connectivity, affordability, and institutional capacity. Since digital technologies underpin smart grids, climate monitoring, precision agriculture, and disaster risk management, narrowing these digital divides will be essential for building climate resilience (Table 19.5).

However, differences remain. India benefits from a more centralized policy architecture capable of implementing nationwide programmers, whereas ASEAN's consensus-based governance requires coordination among sovereign member states with diverse priorities. India's domestic market enables large-scale deployment of renewable energy

Table 19.4: Characterization of Digitalisation in India, ASEAN and East Asian Countries

Country	Agriculture Digitalisation Index	Availability				Affordability					Enabling Environment				
		2G coverage (%)	3G coverage (%)	4G coverage (%)	Digital Agriculture Availability Subindex	Mobile tariffs	Handset price	Mobile-specific tax	Inequality	Digital Affordability Subindex	Market Access Index	Access to electricity	Basic skills	Online Services Index	Nondigital Enabling Environment Subindex
Australia	86.6	51.4	96.9	88.8	**84.6**	82.5	100.0	87.5	69.3	**86.1**	65.0	100.0	97.2	94.7	**89.2**
Brunei Darussalam	81.2	96.6	95.3	90.7	**93.7**	59.7	71.0	97.5	54.6	**69.6**	94.0	100.0	63.2	63.5	**80.2**
Cambodia	71.6	99.7	97.8	77.6	**90.1**	48.6	36.8	76.2	76.8	**56.2**	96.3	91.6	40.9	45.3	**68.5**
China	59.6	62.9	12.1	14.5	**23.2**	78.7	63.7	86.9	44.0	**68.9**	91.5	100.0	64.7	90.6	**86.7**
India	62.3	87.2	35.1	17.6	**38.5**	71.8	61.8	66.3	65.5	**66.4**	99.6	95.2	48.0	85.3	**82.0**
Indonesia	56.4	62.6	48.5	11.7	**36.6**	64.0	37.9	85.9	62.3	**60.2**	64.1	98.5	59.3	68.2	**72.5**
Japan	83.6	3.4	93.0	90.6	**74.1**	72.9	87.1	87.5	96.8	**84.8**	99.0	100.0	77.6	90.6	**91.8**
Korea Rep.	83.1	11.6	98.9	99.9	**81.8**	71.0	68.1	81.4	62.0	**70.4**	99.9	100.0	88.8	100.0	**97.2**
Lao PDR	50.2	84.8	70.0	14.7	**50.8**	40.0	40.2	46.9	61.8	**45.8**	55.8	97.9	42.7	19.4	**54.0**
Malaysia	75.9	87.7	83.9	78.7	**82.6**	69.3	45.1	93.2	38.8	**60.7**	85.5	100.0	66.7	85.3	**84.4**
Myanmar	44.1	39.1	19.8	0.8	**16.1**	61.7	37.8	89.6	62.8	**60.3**	92.0	66.3	39.7	25.9	**56.0**
New Zealand	88.7	82.5	91.3	93.1	**90.3**	78.4	93.8	81.3	71.5	**82.2**	90.4	100.0	90.7	92.9	**93.5**
Philippines	59.9	88.0	57.0	14.1	**46.0**	43.8	46.1	85.0	42.3	**52.4**	94.9	94.9	62.2	72.9	**81.2**
Thailand	84.2	99.8	99.7	99.6	**99.7**	74.6	53.4	91.3	53.0	**67.3**	99.0	100.0	64.5	79.4	**85.7**
Vietnam	69.7	93.7	85.3	45.4	**71.0**	56.2	33.1	91.3	67.3	**58.5**	95.7	100.0	57.3	65.3	**79.6**

Source: Author's own based on ERIA

technologies, while ASEAN's comparative advantage lies in regional integration through initiatives such as the ASEAN Power Grid and cross-border energy cooperation.

These complementarities provide a strong foundation for deeper partnership. India's strengths in large-scale renewable deployment, digital public infrastructure, and green manufacturing can complement ASEAN's strategic geographic position, resource endowments, and regional institutional frameworks. Together, they have the potential to build resilient supply chains, integrated low-carbon markets, and collaborative innovation ecosystems that advance sustainable development across the Indo-Pacific.

19.5. Evolution of ASEAN–India Cooperation: Convergence, Divergence and Institutional Gaps

19.5.1. Evolution of ASEAN–India Cooperation

Despite differences in political systems, institutional arrangements, and stages of development, India and ASEAN exhibit remarkable convergence in their strategic responses to sustainability challenges. Both have embraced the Paris Agreement and the Sustainable Development Goals as guiding frameworks. Both recognize renewable energy as a driver of economic transformation rather than merely an environmental necessity. Both seek to enhance climate resilience through improved infrastructure, disaster risk reduction, and digital technologies. Furthermore, both view green industrialization, green hydrogen, battery manufacturing, and circular economy practices as sources of future competitiveness.

Because of it, the ASEAN–India relationship has evolved from a limited sectoral dialogue in the early 1990s into a Comprehensive Strategic Partnership that encompasses economic integration, political cooperation, connectivity, maritime security, digital transformation, and sustainable development. Initially driven by India's "Look East Policy" and subsequently strengthened under the "Act East Policy", ASEAN has become one of India's most important regional partners in the Indo-Pacific. Bilateral trade has expanded significantly, investment flows have increased, and institutional dialogues have deepened across multiple sectors. However, environmental cooperation, climate governance, and energy transition have emerged as major pillars only during the past decade.

Several milestones illustrated below map the modular way of ASEAN-India cooperation. The establishment of the ASEAN–India Summit mechanism in 2002 provided the institutional foundation for regular high-level political dialogue. While early discussions focused primarily on trade liberalization, regional connectivity, and economic cooperation, environmental sustainability gradually entered the bilateral agenda as climate change gained prominence in global policy debates.

The creation of the ASEAN–India Green Fund in 2010 represented the first dedicated institutional mechanism supporting environmental cooperation. Although relatively modest in scale, the Green Fund financed collaborative projects related to biodiversity conservation, environmental education, sustainable resource management, and capacity building. More importantly, it signaled the recognition that sustainable development would become an integral component of ASEAN–India relations.

Following the adoption of the Paris Agreement in 2015, climate and energy cooperation accelerated. Both India and ASEAN member states committed themselves to nationally determined contributions (NDCs), renewable energy expansion, and sustainable development goals (SDGs). Renewable energy technologies, particularly solar power, emerged as a major area of collaboration, supported by India's leadership in establishing the International Solar Alliance (ISA).

The Delhi Declaration of 2018 further broadened cooperation to include sustainable development, disaster risk reduction, blue economy initiatives, smart cities, and digital innovation. Sustainability was no longer treated as a standalone environmental issue but increasingly integrated into broader regional development and economic cooperation agendas.

The elevation of ASEAN–India relations to a Comprehensive Strategic Partnership in 2023 marked another significant milestone. The partnership recognized that climate change, environmental sustainability, and clean energy are essential elements of regional resilience and Indo-Pacific stability. It also opened opportunities for institutionalizing cooperation in renewable energy, climate finance, resilient infrastructure, and digital transformation.

19.5.2. Areas of Policy Convergence

Due to those framework conditions of cooperations, despite considerable diversity among ASEAN member states, important areas of policy convergence have identified in the areas of cooperation.

a) **Environmental Governance:** Both India and ASEAN increasingly recognize that environmental protection cannot be separated from economic development. Biodiversity conservation, forest restoration, sustainable land management, pollution control, circular economy strategies, and resource efficiency now occupy central positions within national development planning. The Kunming–Montreal Global Biodiversity Framework, Sustainable Development Goals, and various multilateral environmental agreements provide common normative frameworks guiding domestic policies.

b) **Climate Change:** Climate action has become a defining feature of development policy across the region. All ASEAN member states and India have submitted Nationally Determined Contributions under the Paris Agreement and increasingly integrate mitigation and adaptation within national planning frameworks. The following common priorities are evident (i) expansion of renewable energy (ii) building climate-resilient infrastructure (iii) strengthening adaptation planning (iii) disaster risk reduction (iv) sustainable urban development (v) climate-smart agriculture. Although implementation capacities differ considerably, policy objectives increasingly converge.

c) **Energy Transition:** Perhaps the strongest convergence exists in energy transition strategies. India and ASEAN increasingly recognize that renewable energy contributes simultaneously to energy security, industrial competitiveness, green employment generation, technological innovation and low carbon development. Solar energy, offshore wind, battery technologies, electric mobility, smart grids, and green hydrogen have become strategic priorities across the region.

d) **Digital Transformation:** Both India and ASEAN increasingly employ digital technologies to improve environmental management. Artificial intelligence, remote sensing, Internet of Things (IoT), satellite monitoring, digital public infrastructure, blockchain technologies, and geospatial information systems support: precision agriculture; climate modelling; early warning; environmental monitoring; Digitalization therefore represents an important enabling technology linking climate resilience and sustainable development.

19.5.3. Divergences, Market Barriers, and Structural Limitations

Notwithstanding increasing convergence, several structural constraints continue to impede deeper cooperation.

The first constraint concerns institutional asymmetry. India is a sovereign state capable of implementing nationally coordinated policies, whereas ASEAN is an intergovernmental organization comprising ten highly diverse member states. Consensus-based governance promotes inclusiveness but often slows decision-making and limits policy harmonization.

Second, economic development remains highly uneven. Singapore possesses advanced technological and financial capabilities comparable to developed economies, whereas Cambodia, Lao PDR, and Myanmar continue to face substantial capacity constraints. Consequently, identical climate policies generate very different implementation challenges across the region.

Third, financing remains the principal bottleneck. Although public commitments to net-zero transitions have expanded rapidly, investment requirements far exceed available public resources. According to recent estimates by the International Energy Agency and Asian Development Bank, Southeast Asia alone requires several trillion dollars of additional investment to achieve low-carbon development pathways by mid-century. Mobilizing such resources demands institutional innovations capable of attracting private finance while reducing investment risks.

Finally, regulatory fragmentation continues to inhibit regional market integration. Table 19.5 describes the bottlenecks in sup scaling green investments in ASEAN and East Asia summit countries. Differences in technical standards, renewable energy certification, carbon accounting methodologies, electricity market regulations, and investment rules increase transaction costs and discourage cross-border investment. Without greater regulatory convergence, opportunities for integrated renewable energy markets and regional green value chains will remain underexploited.

These structural constraints illustrate that future ASEAN–India cooperation cannot rely solely upon voluntary project-based initiatives. Instead, it requires stronger regional institutions capable of coordinating policy, mobilizing finance, harmonizing regulations, and facilitating technological collaboration.

19.6. Emerging Opportunities for Deepening India-ASEAN Cooperation

The accelerating transition towards low-carbon development is transforming the nature of India-ASEAN cooperation. Whereas previous phases of

Table 19.5: Barriers to Upscaling Green Investment in ASEAN, India and East Asian Countries

Category	Obstacles	ASEAN	ASEAN+3	ASEAN+6-Mongolia and HK
Policy	Changing policies	56%	45%	50%
	Complex procedures	28%	27%	29%
Institutional	High initial investment cost	50%	45%	50%
	Longer recovery period	50%	45%	46%
	High collateral requirement	44%	45%	46%
	Insufficient credit and maturity	28%	27%	25%
	Lack of capacity to value assets	17%	14%	13%
Market	Currency risk	33%	32%	29%
	Insufficient profits	33%	32%	29%
	Unpredictable cash flows	28%	23%	25%
	Non-favorable interest rates	28%	23%	25%
	Rising interest rates	28%	23%	21%
	Technology advancement risks	22%	18%	17%
	Unstable consumer market	11%	9%	13%

Source: Author's own based on ERIA

ASEAN–India engagement were largely driven by trade liberalization, investment promotion, and diplomatic engagement, the next phase is to be shaped by technological innovation, industrial transformation, and the provision of regional public goods. Climate change has fundamentally altered the calculus of regional cooperation by creating shared risks that transcend national boundaries while simultaneously generating new opportunities for economic modernization. Consequently, the challenge facing ASEAN and India is no longer whether cooperation should expand, but how new institutional arrangements can effectively support the transition towards sustainable and resilient development.

This section argues that six mutually reinforcing drivers will determine the future trajectory of ASEAN–India climate and energy cooperation: (i) regional renewable energy value chains; (ii) the emerging green hydrogen economy; (iii) cross-border electricity markets; (iv) climate finance; (v) carbon market integration; and (vi) digital public goods for climate resilience. Collectively, these drivers represent the building blocks of a new regional architecture capable of supporting decarbonization while strengthening economic competitiveness and geopolitical resilience.

19.6.1. Regional Renewable Energy Value Chains

The global energy transition is increasingly characterized by competition over manufacturing capacity, technological innovation, and control of strategic supply chains. Renewable energy technologies—including solar photovoltaic modules, wind turbines, batteries, electrolyzers, and power electronics—have become strategic industrial sectors rather than merely components of environmental policy. As countries pursue industrial decarbonization, comparative advantage will increasingly depend upon the ability to participate in integrated regional value chains rather than solely on domestic resource endowments.

India and ASEAN possess highly complementary comparative advantages that could underpin a regional green industrial ecosystem. India has emerged as one of the world's largest renewable energy markets and has adopted an explicit industrial strategy through Production-Linked Incentive (PLI) schemes aimed at expanding domestic manufacturing of solar modules, advanced battery cells, and clean energy equipment. ASEAN economies, in contrast, occupy strategic positions within global manufacturing networks and possess important reserves of critical minerals such as nickel, cobalt, rare earth elements, and bauxite that are essential for battery technologies and renewable energy equipment.

Indonesia's nickel resources, Malaysia's electronics manufacturing capabilities, Vietnam's rapidly expanding renewable energy sector, Singapore's financial and logistics services, and Thailand's automotive industry provide complementary assets that can be linked with India's growing manufacturing base. Rather than competing for the same segments of global value chains, ASEAN and India could specialize in different stages of production, thereby increasing regional competitiveness while reducing dependence on geographically concentrated suppliers.

The experience of the COVID-19 pandemic demonstrated the vulnerability of globally fragmented supply chains. Similarly, geopolitical tensions have reinforced the importance of diversification and resilience. Developing ASEAN–India renewable energy value chains, therefore, serve not only climate objectives but also broader strategic goals relating to industrial security, technological sovereignty, and economic resilience.

Achieving such integration, however, requires coordinated industrial policies, harmonized technical standards, investment facilitation, and reductions in tariff and non-tariff barriers affecting environmental goods and services. The empirical evidence presented in the preceding chapters indicates that tariffs on low-carbon technologies remain uneven across the region, increasing production costs and limiting

economies of scale. Regional trade liberalization focused specifically on environmental goods would therefore generate substantial welfare gains while accelerating technology diffusion.

19.6.2. Green Hydrogen and of Industrial Decarbonization

Among emerging clean technologies, green hydrogen has attracted unprecedented policy attention because of its potential to decarbonize sectors that are difficult to electrify, including steel, cement, fertilizers, chemicals, maritime transport, and aviation. Unlike solar and wind energy, whose deployment primarily substitutes electricity generation, hydrogen has the potential to transform industrial production processes and international trade patterns.

During the G20 India presidency, India has positioned itself as a future global hub for green hydrogen production through the National Green Hydrogen Mission. Abundant solar and wind resources, a rapidly expanding renewable electricity sector, and relatively low production costs provide India with significant comparative advantages. Several ASEAN member states—including Indonesia, Malaysia, Brunei Darussalam, Vietnam, and Singapore—have similarly incorporated hydrogen into their long-term energy transition strategies.

However, the economics of hydrogen production illustrates why regional cooperation is indispensable. Hydrogen markets require coordinated investments across the entire value chain: renewable electricity generation, electrolyzer manufacturing, storage facilities, transport infrastructure, port modernization, certification systems, and long-term purchase agreements. Individual countries are unlikely to achieve sufficient economies of scale independently.

From an institutional perspective, hydrogen also represents a regional public good because market development depends upon common regulatory standards and mutual recognition of certification systems. Without harmonized standards governing carbon intensity, safety protocols, and lifecycle emissions, international hydrogen trade will remain fragmented.

An ASEAN–India Hydrogen Partnership could, therefore, perform several functions. First, it could coordinate research and development through collaborative innovation platforms involving universities, research institutes, and the private sector. Second, it could establish common certification and sustainability standards that facilitate cross-border trade. Third, it could mobilize investment through blended finance mechanisms involving multilateral development banks and sovereign wealth funds. Finally, it could develop regional transport corridors linking production centres with industrial consumers.

Hydrogen cooperation would thus extend beyond energy policy to become an important instrument of industrial modernization and regional economic integration.

19.6.3. Cross-Border Electricity Markets as Regional Public Goods

Electricity market integration represents perhaps the most tangible opportunity for enhancing regional energy security while reducing the cost of decarbonization. Unlike fossil fuel systems, renewable electricity is geographically uneven. Hydropower resources are concentrated in the Mekong Basin, solar resources are abundant across tropical Asia, and offshore wind potential varies considerably among coastal economies. Regional interconnection allows these complementary resources to be utilized more efficiently.

The ASEAN Power Grid (APG), originally conceived as a network of interconnected national electricity systems, represents one of the region's most ambitious infrastructure initiatives. Economic modelling, undertaken by the ERIA and the ADB, demonstrates that integrated electricity markets could significantly

reduce generation costs by optimizing renewable energy resources across borders. As highlighted in the presentation underpinning this chapter, regional integration could generate savings exceeding US$ 25 billion over two decades, largely by replacing fossil-fuel generation with hydropower and other renewable resources (ERIA, 2020).

India's own experience with interstate electricity markets and cross-border power trade with Bhutan, Nepal, and Bangladesh provides valuable institutional lessons. Market coupling, standardized transmission regulations, transparent pricing mechanisms, and independent system operation have contributed to improving electricity reliability while facilitating renewable energy integration.

Extending these experiences to Southeast Asia requires addressing several institutional challenges. Cross-border electricity trade depends upon compatible regulatory frameworks, harmonized grid codes, transparent tariff methodologies, and mechanisms for dispute resolution. It also requires trust among participating governments because electricity infrastructure creates long-term strategic interdependence.

From a regional governance perspective, electricity interconnection should be understood not only as infrastructure development but also as an institution-building process that deepens economic integration and strengthens collective resilience.

19.6.4. Climate Finance and the Mobilization of Private Capital

One of the most significant constraints on low-carbon development is not technological feasibility but financial mobilization. Estimates by the International Energy Agency, Asian Development Bank, and World Bank suggest that achieving net-zero pathways across emerging Asia will require investments measured in trillions of dollars over the coming decades. Public finance alone cannot meet this requirement.

Consequently, the central challenge is to leverage limited public resources to mobilize substantially larger volumes of private investment. This objective requires moving beyond traditional development assistance towards innovative financial architectures capable of reducing investment risks while improving project bankability.

Blended finance has emerged as a particularly promising instrument because it combines concessional public resources with commercial private investment. Public institutions absorb a portion of investment risk, thereby encouraging private investors to finance projects that would otherwise be considered commercially unattractive. Green bonds, sustainability-linked loans, transition finance instruments, and guarantee facilities similarly expand financing opportunities for renewable energy and climate adaptation projects.

ASEAN and India could jointly establish a Regional Green Investment Facility supported by multilateral development banks, sovereign wealth funds, export credit agencies, and private institutional investors. Such a facility would prioritize projects generating regional public goods, including cross-border transmission infrastructure, climate-resilient transport corridors, hydrogen hubs, and digital climate platforms.

Equally important is strengthening project preparation capacity. Many climate projects fail to attract financing not because they lack economic merit but because feasibility studies, environmental assessments, and financial structuring remain inadequate. Regional technical assistance facilities can therefore play a critical role in improving investment readiness.

19.6.5. Carbon Markets and Regional Climate Governance

The emergence of carbon markets represents another important institutional innovation in global climate governance. Article 6 of the Paris Agreement establishes mechanisms through which countries may

cooperate in achieving mitigation objectives through internationally transferred mitigation outcomes (ITMOs). Properly designed carbon markets reduce the overall cost of emissions reduction by allowing mitigation to occur where it is most economically efficient.

Several ASEAN member states have begun developing domestic carbon pricing mechanisms, voluntary carbon markets, and emissions trading systems. India has similarly initiated reforms leading towards a national carbon market.

However, fragmented carbon markets generate high transaction costs and limited liquidity. Greater regional coordination could therefore improve market efficiency while strengthening environmental integrity. Harmonization should focus upon measurement, reporting, and verification (MRV) systems, carbon accounting methodologies, digital registries, and mutual recognition of high-quality carbon credits.

Regional carbon markets would also complement broader industrial policy objectives by encouraging investment in renewable energy, energy efficiency, reforestation, and nature-based solutions. Nevertheless, governance remains critical. Weak monitoring systems or inconsistent standards risk undermining environmental credibility and investor confidence. Institutional cooperation should therefore prioritize transparency, accountability, and scientific integrity.

19.6.6. Digital Public Goods and Climate-Resilient Development

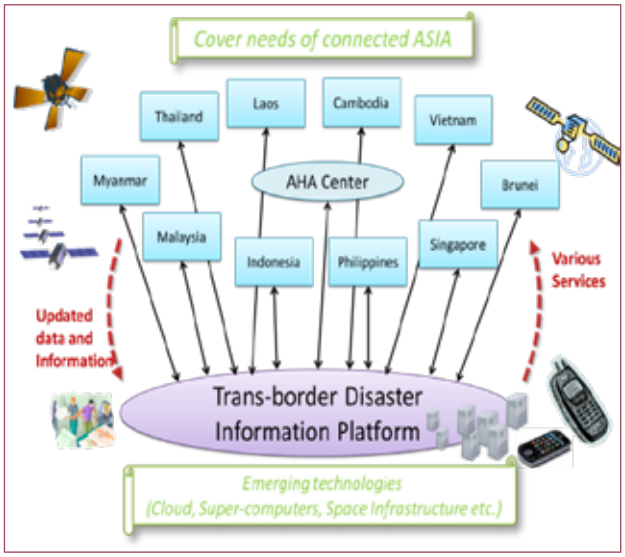
Perhaps the most transformative driver of future cooperation is digitalization. Digital technologies increasingly underpin every dimension of environmental governance—from satellite-based forest monitoring and climate modelling to smart electricity grids, precision agriculture, disaster forecasting, and carbon accounting. Rather than viewing digital transformation as a separate policy domain, ASEAN and India should recognize it as an enabling platform for regional climate resilience.

India's experience with digital public infrastructure demonstrates the potential for scalable, interoperable platforms that reduce transaction costs while expanding access to public services. Applying similar principles to environmental governance could significantly enhance regional cooperation.

The proposed India–ASEAN Trans-border Information Platform (TIP), illustrated in Figure 19.3, offers a strong example of how ASEAN's needs can be matched with India's technological capabilities. Conceptually, TIP would function as a regional digital public good, integrating earth observation satellites, geospatial databases, high-performance computing, artificial intelligence, and real-time communication systems. Such a platform could support climate modelling, disaster early warning, flood forecasting, wildfire monitoring, marine ecosystem management, and agricultural advisory services across national boundaries.

Unlike conventional infrastructure, digital public goods exhibit increasing returns to scale because the value of shared information grows as participation expands. Regional investment in digital climate infrastructure therefore generates benefits that

Figure 19.3: India-ASEAN Information Platform for Resilient Asia



Source: Author's own

exceed the sum of national initiatives, illustrating once again the importance of institutionalized regional cooperation. Several policy priorities emerge from the foregoing analysis.

First, ASEAN and India should institutionalize annual ministerial dialogues dedicated specifically to environment, climate change, and energy transition. These dialogues should complement existing economic and strategic cooperation mechanisms and facilitate regular policy coordination.

Second, greater emphasis should be placed on mobilizing private capital through innovative financing instruments. Governments should improve regulatory certainty, strengthen public–private partnerships, and enhance project preparation capacities to attract institutional investors.

Third, renewable energy cooperation should move beyond technology transfer toward integrated regional manufacturing and innovation ecosystems. Collaborative investments in solar photovoltaics, offshore wind, battery technologies, green hydrogen, and critical minerals would strengthen both energy security and industrial competitiveness.

Fourth, digital transformation should become a cornerstone of regional climate resilience. Establishing the proposed Indo-Pacific Trans-border Information Platform would facilitate data sharing, disaster preparedness, climate modelling, and early warning systems.

Fifth, ASEAN and India should accelerate efforts to harmonize technical standards, carbon accounting methodologies, and sustainability reporting frameworks. Regulatory convergence would reduce transaction costs, improve market efficiency, and facilitate cross-border investment.

Finally, environmental cooperation should be mainstreamed into broader ASEAN–India strategic relations. Climate action, biodiversity conservation, circular economy initiatives, and sustainable infrastructure should no longer be treated as peripheral concerns but rather as central components of Indo-Pacific regional architecture.

19.7. Towards an ASEAN–India Green Partnership Framework

The preceding analysis suggests that future ASEAN–India cooperation should evolve from functional collaboration towards an integrated model of regional governance on sustainability. Such a transformation requires institutional innovation that takes into market push and pull mechanisms rather than simply expanding the scope of existing policy dialogues and cooperative mechanisms.

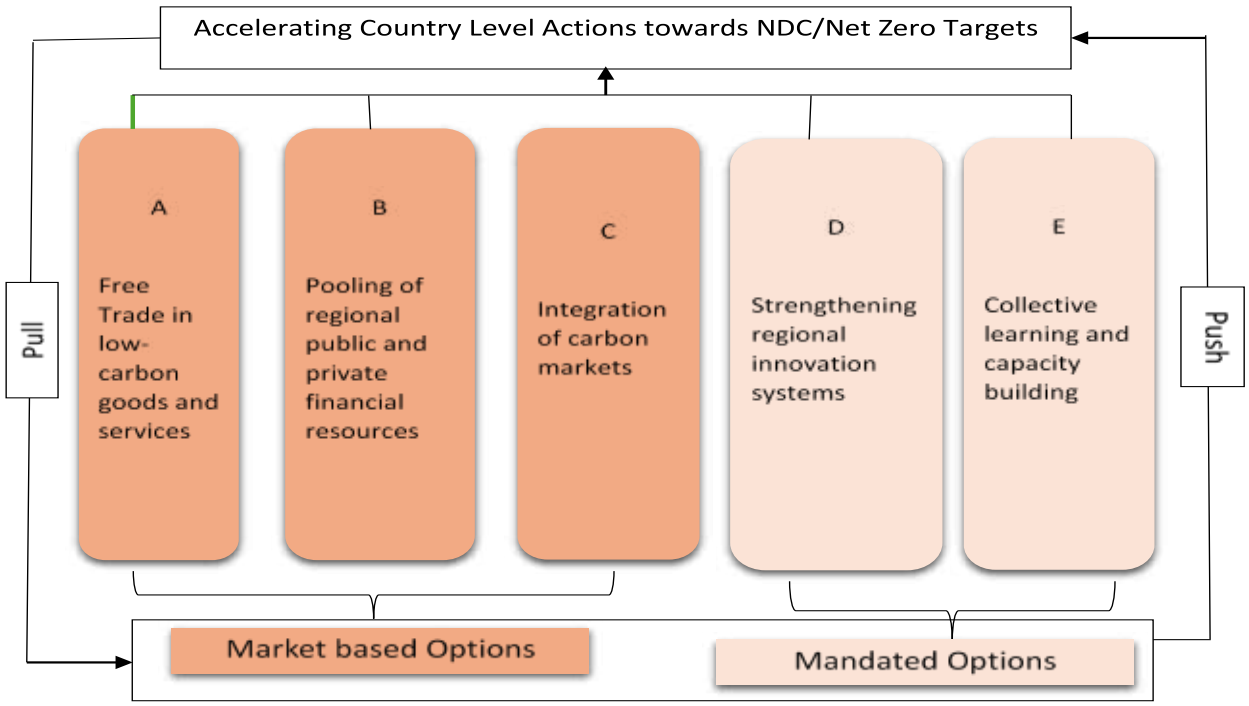
This chapter proposes an ASEAN–India Green Partnership Framework built upon five mutually reinforcing pillars as show in Figure 19.4.

The first pillar is policy coherence and regulatory convergence, encompassing free trade facilitation measures which include harmonized standards for renewable energy, hydrogen certification, carbon accounting, sustainable finance, and environmental goods. Regulatory convergence lowers transaction costs, encourages investment, and facilitates regional market integration.

The second pillar is regional green finance, involving blended finance mechanisms, green investment funds, sovereign guarantees, and partnerships with multilateral development institutions. Mobilizing private capital is indispensable for scaling climate investments.

The third pillar is integration of carbon markets, including interconnected carbon credits derived from emerging green hydrogen trade corridors, forest preservation, and liberalized trade in environmental goods and services. Market integration enables economies of scale while improving energy security, climate resilience and industrial competitiveness.

Figure 19.4: An ASEAN- India Cooperation Framework for Low Carbon Development



Source: Author's own

The fourth pillar is innovation and technology ecosystems, linking universities, research institutes, industries, and start-ups through collaborative research in renewable energy, hydrogen, battery technologies, digital agriculture, artificial intelligence, and circular economy solutions.

The fifth pillar is knowledge cooperation and institutional capacity building. Strengthening human capital, technical expertise, policy learning, and digital governance capabilities is essential for ensuring that all 11 ASEAN member states and 29 Indian states and the Union territories participate effectively in regional sustainability initiatives.

These pillars are mutually reinforcing. Strong institutions facilitate finance; finance accelerates innovation; innovation strengthens markets; integrated markets create incentives for further institutional cooperation. Together they generate a virtuous cycle of sustainable development that extends beyond environmental protection to encompass industrial modernization, economic resilience, and geopolitical stability.

19.8. Conclusion

The political economy of climate change, resource consumption and meeting sustainability targets is fundamentally reshaping the narratives for sustainable development. In ASEAN and India Environmental sustainability has evolved from a peripheral policy concern into a strategic determinant of economic competitiveness, energy security, technological innovation, and regional resilience. India and ASEAN are therefore presented with a historic opportunity to redefine their partnership around the shared objective of low-carbon, climate-resilient, responsible development.

This chapter has argued that despite differences in institutional structures and development trajectories, India and ASEAN exhibit increasing convergence in environmental governance, climate policy, and energy transition strategies. Shared climate vulnerability, common energy security concerns, industrial transformation, and digital innovation provide powerful incentives for deeper cooperation. At the same time, fragmented institutions, financing gaps, regulatory heterogeneity, and uneven

implementation capacities continue to constrain progress.

The next phase of ASEAN–India relations should therefore move beyond project-based cooperation toward establishing an institutionalized cooperative regional governance from environmentally sustainable inclusive growth. Such governance is not intended to replicate supranational models of economic integration but rather to strengthen coordination through flexible, consensus-based institutions that generate regional public goods. Renewable energy value chains, hydrogen partnerships, interconnected electricity markets, blended climate finance, carbon market integration, and digital public goods provide practical pathways through which this transformation can occur.

Ultimately, the significance of ASEAN–India cooperation extends beyond bilateral relations. As two of the world's fastest-growing regions, their collective choices will shape the future of the Indo-Pacific and influence global efforts to achieve the Paris Agreement and the Sustainable Development Goals in time. Speed of actions and coordinating mechanisms are important. By embracing a comprehensive Green Partnership Framework, ASEAN member states and India can position themselves not only as beneficiaries of the global green transition but also as architects of a more resilient, inclusive, and sustainable regional order.

[Author passed away shortly after finalising this chapter. His intellectual leadership and contributions remain foundational to this work.]

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RIS
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विकासशील देशों की अनुसंधान एवं सूचना प्रणाली

RIS specialises in issues related to international economic development, trade, investment and technology. It is envisioned as a forum for fostering effective policy dialogue and capacity-building among developing countries on global and regional economic issues. The focus of the work programme of RIS is to promote South-South Cooperation and collaborate with developing countries in multilateral negotiations in various forums. Through its following centres/forums, RIS promotes policy dialogue and coherence on regional and international economic issues.

The word "DAKSHIN" (दक्षिण) is of Sanskrit origin, meaning "South." The Hon'ble Prime Minister of India, Shri Narendra Modi, inaugurated DAKSHIN – Global South Centre of Excellence in November 2023. The initiative was inspired by the deliberations of Global South leaders during the Voice of the Global South Summits. DAKSHIN stands for Development and Knowledge Sharing Initiative. Hosted at the RIS, DAKSHIN has established linkages with leading think tanks and universities across the Global South and is building a dynamic network of scholars working on Global South issues.

AIC at RIS has been working to strengthen India's strategic partnership with ASEAN in its realisation of the ASEAN Community. AIC at RIS undertakes research, policy advocacy and regular networking activities with relevant organisations and think-tanks in India and ASEAN countries, with the aim of providing policy inputs, up-to-date information, data resources and sustained interaction, for strengthening ASEAN-India partnership.

CMEC has been established at RIS under the aegis of the Ministry of Ports, Shipping and Waterways (MoPS&W), Government of India. CMEC is a collaboration between RIS and Indian Ports Association (IPA). It has been mandated to act as an advisory/technological arm of MoPSW to provide the analytical support on policies and their implementation.

FITM is a joint initiative by the Ministry of Ayush and RIS. It has been established with the objective of undertaking policy research on economy, intellectual property rights (IPRs) trade, sustainability and international cooperation in traditional medicines. FITM provides analytical support to the Ministry of Ayush on policy and strategy responses on emerging national and global developments.

BEF aims to serve as a dedicated platform for fostering dialogue on promoting the concept in the Indian Ocean and other regions. The forum focuses on conducting studies on the potential, prospects and challenges of blue economy; providing regular inputs to practitioners in the government and the private sectors; and promoting advocacy for its smooth adoption in national economic policies.

FIDC, has been engaged in exploring nuances of India's development cooperation programme, keeping in view the wider perspective of South-South Cooperation in the backdrop of international development cooperation scenario. It is a tripartite initiative of the Development Partnership Administration (DPA) of the Ministry of External Affairs, Government of India, academia and civil society organisations.

FISD aims to harness the full potential and synergy between science and technology, diplomacy, foreign policy and development cooperation in order to meet India's development and security needs. It is also engaged in strengthening India's engagement with the international system and on key global issues involving science and technology.

As part of its work programme, RIS has been deeply involved in strengthening economic integration in the South Asia region. In this context, the role of the South Asia Centre for Policy Studies (SACEPS) is very important. SACEPS is a network organisation engaged in addressing regional issues of common concerns in South Asia.

Knowledge generated endogenously among the Southern partners can help in consolidation of stronger common issues at different global policy fora. The purpose of NeST is to provide a global platform for Southern Think-Tanks for collaboratively generating, systematising, consolidating and sharing knowledge on South South Cooperation approaches for international development.

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The *ASEAN–India Development and Cooperation Report 2026* provides an interdisciplinary assessment of this evolving partnership. It examines progress, challenges, and emerging opportunities across key areas, including trade and investment, connectivity, digital governance, innovation, maritime collaboration, energy transition, and climate resilience.

Published amid significant geopolitical and economic shifts in the Indo-Pacific, the Report highlights the importance of resilient and inclusive cooperation in addressing supply chain disruptions, digital transformation, climate challenges, and evolving security dynamics. By drawing on diverse perspectives and analytical approaches, it offers insights into the opportunities and policy priorities shaping the future of ASEAN–India relations.

This Report serves as a valuable resource for scholars, policymakers, practitioners, and students seeking a deeper understanding of the evolving ASEAN–India partnership and its role in promoting sustainable development and regional prosperity.

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