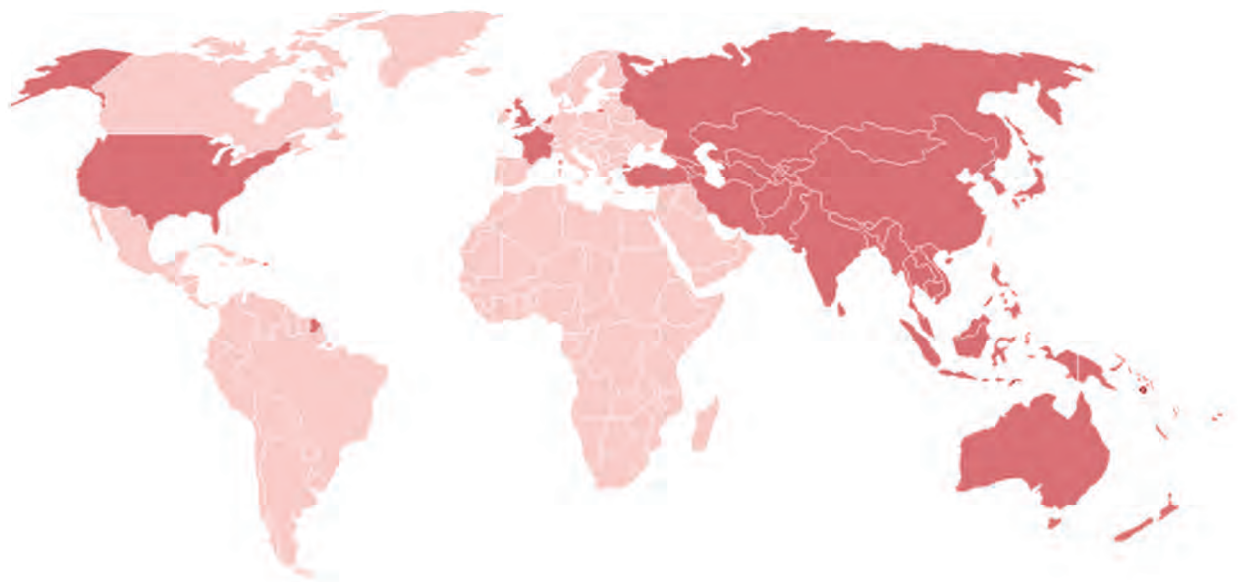




GROWING TOGETHER

ECONOMIC INTEGRATION FOR
AN INCLUSIVE AND SUSTAINABLE ASIA-PACIFIC CENTURY

ESCAP is the regional development arm of the United Nations and serves as the main economic and social development centre for the United Nations in Asia and the Pacific. Its mandate is to foster cooperation between its 53 members and 9 associate members. ESCAP provides the strategic link between global and country-level programmes and issues. It supports Governments of countries in the region in consolidating regional positions and advocates regional approaches to meeting the region's unique socioeconomic challenges in a globalizing world. The ESCAP office is located in Bangkok, Thailand. Please visit the ESCAP website at www.unescap.org for further information.



The darker area of the map represents the members and associate member of ESCAP

This publication may be reproduced in whole or in part for educational or non-profit purposes without special permission from the copyright holder, provided that the source is acknowledged. The ESCAP Publications Office would appreciate receiving a copy of any publication that uses this publication as a source.

No use may be made of this publication for resale or any other commercial purpose whatsoever without prior permission. Applications for such permission, with a statement of the purpose and extent of reproduction, should be addressed to the Secretary of the Publications Board, United Nations, New York.

GROWING TOGETHER

ECONOMIC INTEGRATION FOR
AN INCLUSIVE AND SUSTAINABLE ASIA-PACIFIC CENTURY





Photo by Warren Field



FOREWORD

For the global economy, these are difficult times. The world is emerging from a crisis whose aftershocks continue to resonate – trapping some of the richest economies in recession and shaking the foundations of one of the world's major currencies.

Here at ESCAP, there are historical echoes. What is now the Economic and Social Commission for Asia and the Pacific was founded more than 60 years ago – also in the aftermath of a global crisis. The countries of Asia and the Pacific established their new Commission partly to assist them in rebuilding their economies as they came out of the yoke of colonialism and the Second World War. The newly established ECAFE, as ESCAP was called then, held a ministerial conference on regional economic cooperation in 1963 that resolved to set up the Asian Development Bank with the aim of assisting the countries in the region in rebuilding their economies. Fifty years later, the Asia-Pacific region is again at a crossroads, on this occasion seeking ways and means to sustain its dynamism in a dramatically changed global context in the aftermath of a global financial and economic crisis.

An important change is the fact that, burdened by huge debts and global imbalances, the advanced economies of the West are no longer able to play the role of engines of growth for the Asia-Pacific region that they played in the past. Hence, the Asia-Pacific region has to look for new engines of growth. The secretariat of ESCAP has argued over the past few years that regional developmental challenges, such as poverty and wide disparities in social and physical infrastructure, can be turned into opportunities for sustaining growth in the future. Our “bottom billion”, if lifted out of poverty and allowed to join the mainstream of the region's consumers, could help sustain growth in Asia and the Pacific – and the world at large – for decades to come. Capabilities and resources vary across countries, giving rise to complementarities and opportunities for mutually beneficial exchanges which could be unlocked by enhancing regional economic integration, the topic chosen by the Commission for its sixty-eighth session, in 2012.

Growing Together articulates a number of proposals that can help the region exploit its huge untapped potential for regional economic integration. I hope that they will provide useful inputs for deliberations by ESCAP members at the sixty-eighth session of the Commission and beyond. With an integrated regional market complemented by seamless connectivity, mechanisms for redeploying the region's savings to close its development gaps, and coordinated regional responses to address shared vulnerabilities, including those arising from growing resource scarcities and shrinking carbon space, the Asia-Pacific region will be in a stronger position not only to sustain its dynamism but also to embrace a more inclusive and sustainable pattern of development. A dynamic Asia-Pacific region capable of wiping out the scourge of poverty, hunger and disease will also provide an effective locomotive for the world economy and an anchor of stability. The resulting shared prosperity and increased interdependences will foster peace, turning the twenty-first century into an inclusive and sustainable Asia-Pacific century.

I believe that this is an important agenda for the region to move ahead with. I know that many visionary leaders and statesmen from the region have already articulated similar views over the past few years. The time may have come to move towards action. As the secretariat of an intergovernmental body representing the Asia-Pacific region, ESCAP stands ready to assist the region in building a prosperous, inclusive, harmonious, resilient and sustainable Asia-Pacific century.

I hope that *Growing Together* will prove valuable not only to the members of the Commission but also to readers around the world interested in this dynamic region and its likely future direction.



Noeleen Heyzer
Under-Secretary-General of the United Nations and
Executive Secretary, United Nations Economic and
Social Commission for Asia and the Pacific



ACKNOWLEDGEMENTS

Under the overall direction and guidance of Noeleen Heyzer, Under-Secretary General of the United Nations and Executive Secretary of ESCAP, the preparation of this study was led by an inter-divisional taskforce of the ESCAP Secretariat, chaired by Nagesh Kumar, Chief Economist and Director of the Subregional Office for South and South-West Asia. Other members of the taskforce were Aynul Hasan, Officer-in-Charge, a.i. of the Macroeconomic Policy and Development Division; Hongpeng Liu, Chief of the Energy Security and Water Resources Section, Environment and Development Division; Yuichi Ono, Chief of Disaster Risk Reduction Section, Information and Communications Technology and Disaster Risk Reduction Division; Mia Mikic, Economic Affairs Officer, Trade and Investment Division; Iosefa Maiava, Head of the ESCAP Pacific Office; Nikolay Pomoshchnikov, Director of the Subregional Office for North and Central Asia; A.S.M. Quium, Economic Affairs Officer, Transport Division; Kilaparti Ramakrishna, Director of the Subregional Office for East and North-East Asia; K. V. Ramani, Senior Regional Advisor, Office of the Executive Secretary; Vanessa Steinmayer, Social Affairs Officer, Social Development Division; and Jan Smit, Chief of the Statistical Development and Analysis Section, Statistics Division.

The core team of drafters was coordinated by Nagesh Kumar and Alberto Isgut and included the following ESCAP staff members: Masato Abe, Witada Anukoonwattaka, Sudip Ranjan Basu, Tiziana Bonapace, Abhijeet Deshpande, Yann Duval, Preminda Fernando, Clovis Freire, Maren Jimenez, Mia Mikic, Margit Molnar, Aneta Nikolova, Yuichi Ono, A.S.M. Quium, Krishnamurthy Ramanathan, Heini Salonen, Vanessa Steinmayer, Donovan Storey, Yusuke Tateno, Sergey Tulinov, Katinka Weinberger, Upali Wickramasinghe, and Jenny Yamamoto. The following ESCAP staff members provided inputs and made comments and suggestions: Shuvojit Banerjee, Pierre Chartier, Sytske Claassen, Jeong Dae Lee, Kohji Iwakami, Nobuko Kajiura, Srisakul Kanjanabus, Jorge Martinez-Navarrete, Lys Mehoul-Loko, Kenan Mogultay, Oliver Paddison, Pisit Puapan, Hitomi Rankine, Raj Jain Sandeep, Patcharin Sequeira, Harumi Shibata, Vatcharin Sirimaneetham, and Charlotte Young. The team in charge of the production process of the volume included the following ESCAP staff members: Sopitsuda Chantawong, Metinee Hunkosol, Achara Jantarasaengaram, Chawarin Klongdee, Pannipa Ongwisedpaiboon, Anong Pattanathanes, Kiatkanid Pongpanich, Woranut Sompitayanurak, Amornrut Supornsinchai and Sutinee Yeamkitpibul.

The following experts prepared technical background papers for the study: Suthiphand Chirathivat, Associate Professor, Faculty of Economics, Chulalongkorn University, Thailand; John Gilbert, Professor, Department of Economics & Finance, Utah State University, USA; Saman Kelegama, Executive Director, Institute of Policy Studies of Sri Lanka, Sri Lanka; Galina Kostyunina, Professor of International Economic Relations, Moscow State Institute of International Relations, Russian Federation; Satoru Kumagai, Director, Economic Integration Studies Group, Institute of Developing Economies, Japan; Lim Mah-Hui, Senior Fellow, Socio-economic & Environmental Research Institute, Malaysia; Biman Prasad, Professor of Economics and Dean of the Faculty of Business and Economics, University of the South Pacific, Fiji; Shujiro Urata, Professor, Waseda University, Japan.

The report benefited from comments and suggestions from participants to the Expert Group Meeting held in Bangkok on 9 March 2012: Ramgopal Agarwala, Distinguished Fellow, Research and Information System for Developing Countries, India; Rashid Amjad, Vice Chancellor, Pakistan Institute of Development Economics, Pakistan; Suthiphand Chirathivat, Associate Professor, Chayodom Sabhasri, Associate Professor and Piti Srisaengnam, Faculty of Economics, Chulalongkorn University, Thailand; Saman Kelegama, Executive Director, Institute of Policy Studies of Sri Lanka, Sri Lanka; K. Kesavapany, Director, Institute of Southeast Asian Studies, Singapore; Vladimir Krasnogorskiy, Head of International and Regional Programmes, Department of the International Institute of Energy Policy and Diplomacy, MGIMO University, Russian Federation; Latifah Merican-Cheong, Advisor, Chairman's Office, Securities Commission Malaysia, Malaysia; Biman Prasad, Professor of Economics and Dean of the Faculty of Business and Economics, University of the South Pacific, Fiji; Mohammed Rahmatullah, Senior Visiting Fellow of Centre for Policy Dialogue, Bangladesh and Former Director of Transport Division of ESCAP; Hermanto Siregar, Professor, Faculty of Economics and Management, Bogor Agricultural University, Indonesia; Craig Warren Smith, Senior Fellow, Centre for Ethics of Science and Technology, Chulalongkorn University, Thailand; Jin Kyo Suh, Senior Research Fellow, Korea Institute for International Economic Policy, Republic of Korea; Naoyuki Yoshino, Professor, Department of Economics, Keio University, Japan; Wang Yuzhu, Associate Professor, Institute of Asia-Pacific Studies, Chinese Academy of Social Sciences, China; Kazunobu Hayakawa, Researcher, Bangkok Research Center, Japan External Trade Organization, Thailand.

Substantive editing of the manuscript was performed by Peter Stalker. Alan Cooper, Editorial Unit of ESCAP edited the manuscript. The graphic design was created by Marie-Ange Sylvain-Holmgren, layout by Salapol Ansusinha, and printing were provided by Advanced Printing Service.

CONTENTS

	<i>Page</i>
Foreword	iii
Acknowledgements	v
Contents	vii
Abbreviations	xiii
Explanatory notes	xvii
Executive Summary	xix
Chapter One. The case for regional economic integration in Asia and the Pacific	2
Re-emerging Asia and the Pacific	2
A challenging new context for the region	4
Regional integration for an inclusive and sustainable Asia-Pacific century	7
Conditions for fruitful integration	9
Lessons from global experience	10
Emerging regional economic integration in Asia and the Pacific	12
Strengths, weaknesses, opportunities and threats of broader regionalism	15
Key elements of regional economic integration	16
Chapter Two. Towards a broader integrated market	20
Trading opportunities	20
Barriers to trade	26
Expanding trade in commercial services	29
Movement of people	33
Foreign direct investment	37
A fragmented region	40
In search for a broader framework for regional integration	49
Reaching out across the region	57
Chapter Three. Building seamless connectivity	62
Transport	63
Connectivity for energy security	72
Information and communications technology and digital connectivity	80
Moving towards an integrated regional infrastructure	85

CONTENTS *(continued)*

	<i>Page</i>
Chapter Four. Enhancing regional financial cooperation	92
Financial cooperation	93
Financing infrastructure development	95
Initiatives for regional financial cooperation in Asia and the Pacific	99
Towards a development-friendly regional financial architecture for Asia and the Pacific	104
Chapter Five. Economic Cooperation for addressing shared vulnerabilities and risks	112
Food security	112
Dealing with disasters	117
Pressures on natural resources and sustainability	123
Addressing sustainability risks through technological cooperation	128
Addressing social risks	129
Chapter Six. Towards an inclusive and sustainable Asia-Pacific century	136
Institutional architecture	137
Secretariat	138
The way forward	138
Annex: Technical notes	140
References	146

	<i>Page</i>
I.1. Asia-Pacific leaders' statements on broader regionalism	14
II.1. Key RTAs in each of the five subregions of Asia and the Pacific	40
II.2. Trans-Pacific Partnership	44
II.3. ASEAN Single Window project implementation	48
II.4. Achieving paperless trade in Asia and the Pacific	49
II.5. The Greater Mekong Subregion (GMS) Agreement on Facilitation of Cross-Border Transport of Goods and People	50
II.6. Central Asia Regional Economic Cooperation (CAREC) Transport and Trade Facilitation Strategy	51
III.1. Regional Strategic Framework for Facilitation of International Road Transport	71
III.2. SAARC Energy Ring	75
III.3. Asian and Pacific Energy Forum	80
III.4. Asian Energy Highway	81
III.5. Intraregional connectivity in Europe	86
III.6. Sharing railway and telecommunications infrastructure in India	87
V.1. Climate change and disasters	119
V.2. Regional cooperation on early warning systems for disaster risk reduction	122
V.3. Innovation and technology transfer	126

FIGURES

	<i>Page</i>
I.1. Real rates of growth of GDP, Asia-Pacific economies and advanced economies	3
I.2. Country groups on and off track for the MDGs	5
I.3. The Asia-Pacific share of the developing world's deprived people	6
I.4. Infrastructure index, selected economies	8
I.5. Performance indicators of Cambodia, Lao People's Democratic Republic and Viet Nam, in comparison with ASEAN, 1992-2010	12
II.1. Destination of Asia-Pacific exports, 2002-2016	21
II.2. The ten most promising export markets for Asia-Pacific countries	23
II.3. Export opportunities, by country	25
II.4. Policy-related factors in trade costs	27
II.5. Agricultural and manufacturing non-tariff comprehensive trade costs between selected economies and Japan	29
II.6. Exports of commercial services and merchandise, Asia-Pacific, 2000-2010	30
II.7. Changes in the share of commercial services exports, Asia and the Pacific and the world, 2000-2010	31
II.8. Number of international students in selected Asia-Pacific economies, 2009	33
II.9. Top recipients of FDI inflows in Asia and the Pacific in 2010 and FDI outflows from these countries	38
II.10. Network of trade agreement between countries in Asia and the Pacific	46
II.11. Scenarios A and B for trade liberalization in AFTA, SAFTA, ECOTA and PACER-Plus	52
II.12. Long-run welfare gains for four subregional agreements, including trade facilitation	53
II.13. CEPEA as a potential nucleus of a broader integrated market	54
II.14. Potential benefits of expanding ASEAN Free Trade Area to ASEAN+6 (CEPEA)	55
II.15. Starting afresh through the broadest and most comprehensive possible agreement	55
II.16. Welfare gains from region-wide liberalization	56
III.1. UNCTAD liner shipping connectivity index, 2006 and 2011	64
III.2. Asian Highway network	67
III.3. Trans-Asian Railway network	69
III.4. Energy trade in the Asia-Pacific region	74
III.5. The proposed Trans-ASEAN gas pipeline grid	77
III.6. Proposed ASEAN Power grid	78
III.7. Relationships between connectivity, usage prices and income, selected economies, 2009	83
III.8. Submarine telecommunications cables landing in Asia and the Pacific	84
IV.1. Credit spreads and bond premia for five-year term loans or issues, for different ratings of borrowers or issuers, January 2012	98

FIGURES *(continued)*

	<i>Page</i>
IV.2. Public-private partnerships as a percentage of fixed capital formation, selected countries	100
IV.3. A possible scheme of revenue bonds	101
IV.4. Returns on selected infrastructure assets and major treasury bonds over 2002-2007	106
V.1. Fiji, annual fluctuations in GDP relative to the incidence of disasters, 1980-2008	120
V.2. Primary energy use in Asia and the Pacific and the rest of the world, 1971-2008	123
V.3. Availability of water resources per capita, by region and subregion, 2008	124
V.4. Domestic material consumption in Asia and the Pacific and the rest of the world, 1970-2005	125
V.5. Shares of main material categories in Asia and the Pacific, 1970 and 2005	125
V.6. Social exclusion in 1990 and foreign direct investment over 2003-2010	131

TABLES

	<i>Page</i>
I.1. Transitions from middle-income to advanced-country levels	11
II.1. Distribution of merchandise exports, by region, 2000 and 2010	21
II.2. Distribution of Asia-Pacific merchandise exports, by subregion, 2000 and 2010	22
II.3. Export opportunities indicator, for the average country in Asia-Pacific subregions and selected regions of the world	24
II.4. Non-tariff intraregional and extraregional trade costs in Asia and the Pacific, 2007-2009	28
II.5. Intraregional trade in commercial services, selected exporters and importers, 2008	31
II.6. Tourism arrivals, selected Asia-Pacific countries, 2010	32
II.7. Bilateral remittances received by the Asia-Pacific subregions, 2010	35
II.8. Average FDI flows to and from Asia-Pacific countries and their global shares, 1996-2000 and 2006-2010	37
II.9. CEPEA in relation to the EU and NAFTA in 2011	54
II.10. Summary of welfare gains in the simulations	56
III.1. Liner shipping connectivity index and container traffic for selected countries	65
III.2. Missing links in the Trans-Asian Railway network, end 2011	68
III.3. Status of accession of ESCAP regional members to the seven international conventions related to land transport facilitation listed in Commission resolution 48/11, as of 14 February 2012	70
III.4. Simulation model of benefits from three Asian Highway routes	73
IV.1. Interdependence in portfolio capital investment in Asia and the Pacific	94
IV.2. Comparison of selected regional and national development banks	97
IV.3. Access to funds under the Chiang Mai Initiative Multilateralization and short-term liabilities, 2010	102
IV.4. Investing in infrastructure through funds and listed assets	107
V.1. Deaths and economic damages and losses due to recent mega-disasters in Asia and the Pacific	118

ABBREVIATIONS

ABF	Asian Bond Fund
ABMI	Asian Bond Market Initiative
ACD	Asian Cooperation Dialogue
ACRAA	Association of Credit Rating Agencies in Asia
ACU	Asian Clearing Union
ADB	Asian Development Bank
ADB I	Asian Development Bank Institute
AERR	ASEAN Emergency Rice Reserve
AFAS	ASEAN Framework Agreement on Trade in Services
AFTA	ASEAN Free Trade Area
AH	Asian Highway
AIA	ASEAN Investment Area
AICO	ASEAN Industrial Cooperation
AIF	ASEAN Infrastructure Fund
AIFS	ASEAN Integrated Food Security Framework
AMRO	ASEAN+3 Macroeconomic Research Office
APAARI	Asia-Pacific Association of Agricultural Research Institutions
APCTT	Asian and Pacific Centre for Transfer of Technology
APEA	Asia-Pacific Economic Area
APEC	Asia-Pacific Economic Cooperation
APES	Asia-Pacific Economic Summit
APTA	Asia-Pacific Trade Agreement
APTEC	Asia-Pacific Trade and Economic Cooperation Agreement
APTECH	Asia-Pacific Technology Development Council
APTERR	ASEAN+3 Emergency Rice Reserve
ASEAN	Association of Southeast Asian Nations
ASEM	Asia-Europe Meeting
ASW	ASEAN Single Window
ATIGA	ASEAN Trade in Goods Agreement
BIBF	Bangkok International Banking Facilities
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BIS	Bank for International Settlements
BNDES	Brazilian Development Bank
BRICS	Brazil, Russian Federation, India, China, and South Africa
BTA	bilateral trade agreement
CAC	Central Asia – Center
CAF	Development Bank of Latin America
CAREC	Central Asia Regional Economic Cooperation
CARICOM	Caribbean Community
CBTA	Cross-border Transport Agreement
CDM	Clean Development Mechanism

ABBREVIATIONS *(continued)*

CEPA	Closer Economic Partnership Agreements
CEPEA	Comprehensive Economic Partnership for East Asia
CEPT	Common Effective Preferential Tariff
CGE	Computable general equilibrium
CGIF	Credit Guarantee and Investment Facility
CIS	Commonwealth of Independent States
CISFTA	CIS Free Trade Agreement
CMIM	Chiang Mai Initiative Multilateralization
COMESA	Common Market for Eastern and Southern Africa
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EAERR	ASEAN East Asia Emergency Rice Reserve
EAFTA	East Asia Free Trade Agreement
EAS	East Asia Summit
EBRD	European Bank for Reconstruction and Development
ECAFE	Economic Commission for Asia and the Far East
ECFA	Economic Cooperation Framework Agreement
ECO	Economic Cooperation Organization
ECOTA	Economic Cooperation Organization Trade Agreement
EIA	Energy Information Administration
EIB	European Investment Bank
EIU	Economist Intelligence Unit
EMEAP	Executives Meeting of East Asia Pacific Central Banks
ENEA	East and North-East Asia
EPS	Employment Permit System
ESCAP	United Nations, Economic and Social Commission for Asia and the Pacific
ESMAP	Energy Sector Management Assistance Program
EST	environmentally sustainable technologies
EU	European Union
EurAsEC	Eurasian Economic Community
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
FTA	free trade agreement
G-20	Group of Twenty
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GCC	Gulf Cooperation Council
GDP	gross domestic product
GHz	gigahertz
GMS	Greater Mekong Subregion
GMS-FRETA	Greater Mekong Subregion Freight Transport Association
HIV	human immunodeficiency virus
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization

ABBREVIATIONS *(continued)*

ICT	information and communications technology
IDE	Institute of Developing Economies
IDI	ICT Development Index
IEA	International Energy Agency
IFA	Intergovernmental Framework Agreement
IFC	International Financial Corporation
IFSL	International Financial Services London
IMF	International Monetary Fund
INSTC	International North-South Transport Corridor
IPB	ICT Price Basket
IPCC	Intergovernmental Panel on Climate Change
IRRI	International Rice Research Institute
IT	information technology
ITU	International Telecommunication Union
KIEP	Korea International Economic Policy Institute
kW	kilowatt
LCS	Land Border Customs Station
LCT	Low Carbon Technology
LDC	least developed country
LLDC	landlocked developing country
LNG	liquefied natural gas
Mbit/s	mega bits per second
MDG	Millennium Development Goals
MERCOSUR	Common Market of the South
MFN	most favoured nation
MNE	multinational enterprise
Mtoe	million tons of oil equivalent
NAFTA	North American Free Trade Agreement
NPCSL	National Cleaner Production Centre of Sri Lanka
NDF	non-deliverable forward
NESDB	National Economic and Social Development Board of Thailand
NIE	newly industrializing economy
NSW	National Single Window
NTM	non-tariff measure
OCD	Office of Civil Defense
OCR	ordinary capital resources
OECD	Organisation for Economic Co-operation and Development
PACER	Pacific Agreement on Closer Economic Relations
PICTA	Pacific Island Countries Trade Agreement
PICTs	Pacific island countries and territories
PIF	Pacific Islands Forum
PPP	purchasing power parity
PPPs	public-private partnerships

ABBREVIATIONS *(continued)*

RCM	Regional Coordination Mechanism
REITs	real estate investment trust funds
RGDP	regional gross domestic product
RIMES	Regional Integrated Multi-Hazard Early Warning System for Africa and Asia
RMB	Chinese yuan
ROO	rules of origin
RTA	regional trade agreement
SAARC	South Asian Association for Regional Cooperation
SAARCFINANCE	Network of Governors and Finance Secretaries of the SAARC region
SADC	Southern African Development Community
SAFTA	South Asian Free Trade Area
SARSO	South Asian Regional Standards Organisation
SATIS	South Asia Agreement on Trade in Services
SDF	SAARC Development Fund
SDR	special drawing right
SDT	special and differential treatment
SEACEN	Southeast Asian Central Banks
SEANZA	Southeast Asia, New Zealand, Australia
SIDS	small island developing States
SKRL	Singapore-Kunming Rail Link
SMEs	small- and medium-sized enterprises
SPA-FS	Strategic Plan of Action on Food Security
SPC	Secretariat of the Pacific Community
SREX	Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation
TAGP	Trans-ASEAN Gas Pipeline Project
TBT	technical barriers to trade
TNC	transnational corporation
TPP	Trans-Pacific Partnership
TTFS	transport and trade facilitation strategy
UNCSD	United Nations Conference on Sustainable Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Reduction
UNNexT	United Nations Network of Experts for Paperless Trade for Asia and the Pacific
UNWTO	United Nations World Tourism Organization
WB	World Bank
WMO	World Meteorological Organization
WTO	World Trade Organization



EXPLANATORY NOTES

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Mention of firm names and commercial products does not imply the endorsement of the United Nations.

The term “ESCAP region” in this publication refers to the group of countries and territories/areas comprising Afghanistan; American Samoa; Armenia; Australia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; China; Cook Islands; Democratic People’s Republic of Korea; Fiji; French Polynesia; Georgia; Guam; Hong Kong, China; India; Indonesia; Iran (Islamic Republic of); Japan; Kazakhstan; Kiribati; Kyrgyzstan; Lao People’s Democratic Republic; Macao, China; Malaysia; Maldives; Marshall Islands; Micronesia (Federated States of); Mongolia; Myanmar; Nauru; Nepal; New Caledonia; New Zealand; Niue; Northern Mariana Islands; Pakistan; Palau; Papua New Guinea; Philippines; Republic of Korea; Russian Federation; Samoa; Singapore; Solomon Islands; Sri Lanka; Tajikistan; Thailand; Timor-Leste; Tonga; Turkey; Turkmenistan; Tuvalu; Uzbekistan; Vanuatu; and Viet Nam.

The term “developing ESCAP region” in this publication excludes Australia, Japan, New Zealand and North and Central Asian economies from the above-mentioned grouping. Non-regional members of ESCAP are France, Netherlands, United Kingdom of Great Britain and Northern Ireland and United States of America.

The term “East and North-East Asia” in this publication refers collectively to China; Hong Kong, China; Democratic People’s Republic of Korea; Japan; Macao, China; Mongolia and Republic of Korea.

The term “North and Central Asia” in this publication refers collectively to Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan.

The term “Central Asian countries” in this publication refers collectively to Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

The term “Pacific” in this publication refers collectively to American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

The term “South and South-West Asia” in this publication refers collectively to Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka and Turkey.

The term “South-East Asia” in this publication refers collectively to Brunei Darussalam, Cambodia, Indonesia, Lao People’s Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam.

The term “Countries with Special Needs” in this publication refers collectively to least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing States (SIDSs) in the Asia-Pacific region. It includes (i) 13 LDCs: Afghanistan,* Bangladesh, Bhutan,* Cambodia, Kiribati,** Lao People’s Democratic Republic,* Myanmar, Nepal,* Samoa,** Solomon Islands,** Timor-Leste,** Tuvalu** and Vanuatu** (*also LLDC, **also SIDS); (ii) 12 LLDCs: Afghanistan,* Armenia, Azerbaijan, Bhutan,* Kazakhstan, Kyrgyzstan, Lao People’s Democratic Republic,* Mongolia, Nepal,* Tajikistan, Turkmenistan and Uzbekistan (*also LDC); and (iii) 16 SIDSs: Cook Islands, Fiji, Kiribati,* Maldives, Marshall Islands, Micronesia (Federated States of), Nauru, Niue, Palau, Papua New Guinea, Samoa,* Solomon Islands,* Timor-Leste,* Tonga, Tuvalu* and Vanuatu* (*also LDC).

Values are in United States dollars unless specified otherwise.

The term “billion” signifies a thousand million. The term “trillion” signifies a million million.

Reference to “tons” indicates metric tons.

In the tables, two dots (..) indicate that data are not available or are not separately reported, a dash (–) indicates that the amount is nil or negligible, and a blank indicates that the item is not applicable.

In dates, a hyphen (–) is used to signify the full period involved, including the beginning and end years, and a stroke (/) indicates a crop year, fiscal year or plan year.

Bibliographical and other references have not been verified. The United Nations bears no responsibility for the availability or functioning of URLs.

Growing together – Economic integration for an inclusive and sustainable Asia-Pacific century

The Asia-Pacific region's rapid growth since the 1950s has been supported by a favourable external economic environment and opportunities arising from globalization. But in a dramatically altered post-global financial crisis scenario, the region's dynamism, which is crucial for the elimination of poverty and hunger and the realization of the Asia-Pacific century, will critically depend on its ability to harness the potential of regional economic integration.

In the light of the many complementarities arising from its diversity, the region, a late starter in regionalism, has many underexploited opportunities for mutually beneficial regional integration. Regional economic integration can also assist in making regional development more balanced, with the lagging economies receiving a boost through a stronger connectivity and integration with economic growth poles, such as China and India. Apart from fostering peace, such cooperation could also help the region address shared vulnerabilities and risks and exercise its influence in global economic governance in a way that is commensurate with its rising economic weight.

Though the economic rise of Asia and the Pacific may seem to be a modern phenomenon, it is in fact a re-emergence. The Asia-Pacific region accounted for 56 per cent of global gross domestic product (GDP) up to 1820, but its share declined to 16 per cent by 1950. Subsequently, it started to regain its position in the world economy, first through Japan's rapid growth, later through the rise of East and South-East Asia's newly industrializing economies, and more recently by the rise of its two most populous countries, China and India. As a result of this dynamism, long-term projections suggest that the region's share in the global economy could exceed 50 per cent by 2050, as it was until 200 years ago.

Such an optimistic outlook, however, must be viewed with caution. In a dramatically altered global context, Western markets face an uncertain outlook and are unlikely to remain the region's main engines of growth in the wake of the 2008-2009 financial crisis. Sustaining growth in the region will thus require Asia-Pacific economies to rely more on domestic and regional sources of demand.

One of the most promising reservoirs of domestic demand is the region's "bottom billion" people currently living in poverty. But if they are to join the mainstream of Asia-Pacific consumers, their purchasing power must be boosted. This will require faster progress towards achieving the Millennium Development Goals through broad-based investments in education, health services, social protection and basic infrastructure, which will facilitate access to employment and business

opportunities for all social groups besides generating new aggregate demand to sustain growth and inclusive development.

The Asia-Pacific region has a number of advantages that should help it accelerate economic integration. One is a shared history and culture. Economies in the region are also characterized by complementarities arising from their very different levels of development, endowments of natural resources, capital, and workforces. But the most important factor for the success of regional economic integration is the presence of large and growing markets. The emergence of vast middle classes with growing incomes and purchasing power in the most dynamic Asia-Pacific economies is leading to the creation of the world's largest markets for a growing range of products and services, from mobile telephones to motor cars to jet airplanes. Such increasing demand is leading to rapid growth in intraregional trade in Asia and the Pacific, making regional economic integration not only increasingly viable but also highly desirable.

Emerging patterns of regional economic integration

Regionalism became a dominant trend in the world economy after the formation of the Single European Market in 1992 and the implementation of the North American Free Trade Agreement in 1994. These regional trade agreements (RTAs) were followed by many others. Currently, some 300 RTAs, including bilateral free trade agreements (FTAs), are in force worldwide, and a significant part of world trade is conducted on a preferential basis rather than on a most-favoured-nation basis.

Despite two early initiatives – the Asia-Pacific Trade Agreement (APTA), signed in 1975, and the Asian Clearing Union, set up in 1974 – both under the auspices of ESCAP, the Asia-Pacific region is a late starter in regional economic integration. However, the rise of regionalism as a dominant trend in the world economy in the 1990s and the Asian crisis of 1997, which highlighted the regional economic interdependence, led to a profound rethinking about the importance of regional economic cooperation. Since then, the Chiang Mai Initiative for monetary cooperation and a number of other initiatives towards regional economic integration have been taken.

Examples of initiatives to foster regional economic integration in Asia and the Pacific include the ASEAN Free Trade Agreement (AFTA), which advanced its year of implementation to 2002 from 2008, and the establishment of the ASEAN Economic Community planned for 2015. Similarly, the South Asian Association for Regional Cooperation (SAARC) adopted in 2004 the Agreement on South Asian Free Trade (SAFTA), which is to be implemented over 10 years from 2006. Other initiatives include the Economic Cooperation Organization Trade Agreement (ECOTA) of 2003 and the Pacific Island Countries Trade Agreement (PICTA) of 2001. These subregional groupings are complemented by numerous bilateral FTAs.

Another indication of the growing recognition of broader regional economic integration in Asia and the Pacific is the fact that many leaders and statesmen of the region have articulated their visions of a broader Asia-Pacific community.

Key elements of a regional economic integration scheme

Regional economic integration will require a long-term vision of building an economic community of Asia-Pacific supported by the necessary frameworks and institutions. This would involve four key elements:

- ***An integrated Asia-Pacific market*** – This would involve coalescing numerous bilateral and subregional agreements into broader arrangements open to all Asia-Pacific countries.
- ***Seamless physical connectivity*** – Through better transport, energy and information and communications technology (ICT) links and the adoption of best practices in trade.

- *Financial cooperation* – To ensure the optimal use of the region's resources for mutual benefit.
- *Addressing shared vulnerabilities and risks* – Mutual cooperation will enable countries to respond more effectively to concerns about energy and food security, disasters, pressures on natural resources, social exclusion and rising inequality.

Towards a broader integrated market

Asia and the Pacific is the world's most dynamic trading region. Between 2000 and 2010, global trade increased by an annual average of 9 per cent, while trade within the region expanded by 12 per cent. Intraregional exports have far outpace those to Europe, North America and the rest of the world, and between 2010 and 2016, they are expected to rise from \$3.1 trillion to as much as \$6.8 trillion. If current trends continue, Asia and the Pacific would become the world's largest market in 2012.

Assessing export opportunities

Growing markets provide opportunities for both current and new exporters across the world. In order to assess the prospects and desirability of further trade liberalization within the Asia-Pacific region, a new "export opportunities indicator" developed by ESCAP identifies the most promising export markets in the world for each country. The results show that China is among the top 10 export markets in the world for all the countries in Asia and the Pacific. Other top 10 export markets for countries in the region include India (for 44 countries), the Republic of Korea (for 39 countries), the Russian Federation (for 32 countries) and Turkey (for 28 countries). It should be noted that the opportunities within Asia and the Pacific are greater than those in Europe and North America combined. This indicator also shows that, with the exception of East and North-East Asia, Asia-Pacific countries have greater export potential in other subregions than in their own subregion. This observation contrasts with the approach to regional economic integration adopted so far, which remains essentially subregional and fails to recognize the often greater potential of trade expansion across the subregions. Furthermore, intraregional trade has not been able to exploit the benefits of geographical proximity as the costs of intraregional trade are often much higher than those of exporting to the traditional markets in the West.

Trade in services

Exports of commercial services are becoming increasingly important for Asia and the Pacific. Between 2000 and 2010, the region increased its contribution to world services exports from 22 to 29 per cent. In addition, available data suggest that the region is becoming a major market for itself. This is to be expected, partly, as the result of the increasing purchasing power of the region's emerging middle class, which can increasingly afford, for instance, the expense of travelling to other countries for tourism or study. In fact, recent data show that about two thirds of the arrivals to the top 10 tourism markets in the region originate from other countries within the region and that the large majority of international students studying in the region's universities also come from the region.

Movement of people

Another aspect of growing trade in services is migration. Migration flows between countries in the region could be very effective in tackling structural demand-supply imbalances between countries of the region, contributing to economic growth and a reduction in region-wide disparities in the distribution of labour income. International migration also provides a source of income for members of the migrant's household left behind, as well as a source of foreign exchange for the sending countries. In fact, the share of remittances originating in the region itself is significant, averaging about 34 per cent of the total remittances received by countries in the region in 2010.

Many of the labour flows within the region are irregular, reflecting the absence of adequate legal frameworks to enable migration through formal channels. The absence of such formal channels leads to increases in the costs of migration, for instance, through more onerous recruitment processes. In order to regularize migration flows and maximize the benefits of labour migration, a number of countries have concluded bilateral agreements covering recruitment, conditions of employment and measures to protect the migrants.

Foreign direct investment

Foreign direct investment (FDI) flows to the Asia-Pacific region have grown tremendously, with the region now accounting for a quarter of global inflows, but FDI outflows from the region have expanded even more impressively with the emergence of economies such as China, India, Malaysia and Singapore joining conventional sources of FDI, such as Australia, Japan and the Republic of Korea.

A fragmented region

The extent of non-tariff and behind-the-border barriers to trade suggests that there is still considerable scope for further trade liberalization in the region, but in the light of the limited progress in multilateral trade negotiations since the conclusion of the Uruguay Round in 1995, most countries in the region have turned to bilateral or subregional free trade agreements. Asia-Pacific economies are parties to more than 140 agreements and are contemplating many more. This activism signals a preference for deeper integration among countries in the region. However, the overall effect is a tangle of overlapping agreements which has been likened to a noodle bowl. Its complexity adds to the cost of trade and does not provide a seamless or integrated regional market.

Bilateral and subregional agreements help boost trade, but because of their different scope, coverage and rules, they do not create a seamless, region-wide market and do not allow synergies to be exploited. What is needed is not to deepen integration within subregions but to foster trade links across subregions.

Towards broader regionalism

This study suggests three routes for achieving a broader integrated market of Asia-Pacific region.

An Asia-Pacific Economic Area (APEA): The first option is to create APEA as a framework to join existing subregional groupings to exchange trade preferences between members, in the manner of the European Economic Space Agreement that combines the Single Market of the European Union with members of the European Free Trade Association. The major subregional groupings that could be covered in APEA are: (i) ECOTA, (ii) AFTA, (iii) SAFTA, and (iv) the proposed Pacific Agreement on Closer Economic Relations-Plus, which encompasses PICTA plus Australia and New Zealand. Overall, these four trade agreements include 43 of the 51 Asia-Pacific economies.

A modelling exercise conducted by ESCAP suggests that member countries would gain substantially if the four groupings were joined in APEA. However, this approach may be complicated by the fact that the four subregional groupings are at different stages of their evolution. Furthermore, a major limitation of this approach is that some of the region's largest markets, such as China, Japan and the Republic of Korea, would remain excluded. In any event, there is a tremendous potential of mutual learning across the subregional groupings of the region and sharing their best practices. Hence, a consultative committee of subregional groupings could be constituted to facilitate that mutual learning.

Building on the ASEAN+ approach: The ASEAN dialogue process has contributed towards a discussion of broader regional arrangements. Two key proposals are the ASEAN framework include an East Asia Free Trade Area (EAFTA) among ASEAN+3 countries, and the Comprehensive Economic Partnership for East Asia (CEPEA) originating in the East Asia Summit which additionally includes Australia, India and New Zealand (ASEAN+6). CEPEA, the more inclusive of the two approaches, could be treated as the nucleus of an incipient Asia-Pacific RTA to which other countries could accede to.

The advantage of this approach is that a feasibility study and some subsequent exploration in ASEAN+ working groups have been completed. All six dialogue partners have concluded ASEAN+1 free trade agreements that can be easily multilateralized with common rules of origin. Combining the region's growth poles, China and India, with the advanced economies of Japan and Australia and the Republic of Korea and those of ASEAN could produce a regional grouping comparable in stature with the European Union and North America Free Trade Agreement but outclassing them in terms of dynamism by a wide margin. Simulation results found substantial welfare gains for CEPEA.

A new Asia-Pacific Trade Agreement (APTA II): As a new agreement unencumbered by prior commitments, it would be easier for APTA II to include all the desirable features, including a comprehensive scope based on negative lists, trade facilitation, investment, economic cooperation. Most importantly, it would include special and differential treatment and support for poorer countries, so that they could take advantage of the opportunities to become available to them – making it an RTA with a human face and a model of regional economic integration for other regions to emulate.

Simulation studies indicate that such an agreement would have the potential to generate the largest welfare gains for the region – up to \$140 billion or over 1 per cent of the region's GDP, with broad and comprehensive coverage.

Building seamless connectivity

Economic integration depends critically on the development of seamless connectivity between countries. This would require investments in transport, energy and ICT infrastructure.

Transport

Asia's most important maritime liner routes, by volume, still run to Europe and North America. Although almost all the region's coastal countries are now linked by direct shipping services or by transshipment and transit operations through hub ports, shipping connectivity is still poor between many neighbouring countries. Moreover, the Pacific island developing economies have the added disadvantage of being located a long distance from the rapidly growing economies in Asia.

Over the past decade, the region has significantly improved air transport. More low-cost carriers have entered the market, flight frequencies have increased, and countries have invested in new and existing airports. Most Asia-Pacific countries are now linked, either directly or through hubs, and have been making air service agreements and liberalizing their air transport markets. Land based transport infrastructure is needed, however, to link airports to production and population centres.

Land transport is important for regional economic integration and for balanced regional development. ESCAP simulation exercises show that improving land transport connectivity has potential to increase economic growth, especially in relatively poorer areas and thus reducing

development gaps. Land routes are particularly critical for the development of the land locked countries. In recent decades governments across the region have made considerable efforts to extend national road and railway systems. Even so, given the likely expansion of intra-Asian overland trade, regional road networks are still rather inadequate. The Asian Highway network now extends through 32 member states and comprises 142,000 km of highways. Although there are no “missing links” in terms of absence of roads, poor road quality can act as a deterrent for international transport. For railways, the region as a whole has yet to realize its potential because of many missing links, which constitute about 9 per cent of the Trans-Asian Railway network.

Countries can make greater use of the Asian Highway and Trans-Asian Railway routes by improving transport facilitation measures and by investing in intermodal facilities such as dry ports. Furthermore network externalities can be expanded by connecting initiatives across the subregions.

Transport is still hampered by many non-physical barriers that lead to excessive delays, high costs and uncertainties. ESCAP has been urging member countries to accede to seven international conventions related to land transport facilitation and has prepared a Regional Strategic Framework for the Facilitation of International Road Transport.

There is further scope for strengthening cooperation between ESCAP and the Asian Development Bank in the identification and financing of priority transport infrastructure projects, including the completion of missing links in the Trans-Asian Railway network and upgrading of roads in the Asian Highway network.

Energy connectivity for energy security

During the next 20 years, Asia-Pacific energy demand is projected to grow annually by 2.4 per cent. Given the uneven distribution of energy resources among countries, the region clearly has enormous potential for increasing energy trade. Nevertheless, intraregional energy trade faces a number of obstacles. The most important one is the lack of infrastructure, which often prevents countries from accessing even domestic resources. Other impediments include the lack of a regional agreement setting out consistent rules of trade.

A large number of energy infrastructure projects are planned or under way in the region. Examples include pipelines to export hydrocarbons from the Russian Federation’s East Siberian and Sakhalin reserves, ASEAN gas pipelines and power grids, SAARC’s energy ring, and the Turkmenistan-Afghanistan-Pakistan-India pipeline project.

A region-wide energy cooperation framework could encourage joint investments by buyers and sellers in subregional power, gas and oil grids. In this respect, the modalities developed for the previously mentioned intergovernmental agreements on the Asian Highway and on the Trans-Asia Railway networks could provide useful models for the development of an integrated regional power grid or “Asian Energy Highway”. Cooperation could also be greatly beneficial for research on energy technologies, or for joint exploration ventures by regional energy companies. In addition, regional cooperation could boost the development, commercialization and dissemination of energy-efficient technologies. The ministerial-level Asia-Pacific Energy Forum, which is scheduled to be held in Vladivostok, Russian Federation, in May 2013, could provide the basis for a regional framework for energy connectivity and trade.

Information and communications technology and digital connectivity

The Asia-Pacific region has been a major beneficiary of the information technology revolution, but the digital divide prevails in terms of unequal access and affordability of services across countries.

Information technology services tend to be more expensive in the poorest countries. On average, less than 20 per cent of people in Asia and the Pacific have access to the Internet. Traffic volumes on the Internet in the region are expected to continue to increase exponentially both within and between subregions. The region, therefore, needs to invest in additional terrestrial fibre-optic cable routes and in the capacity of new Internet hub cities. As these new Internet hubs do not need to be clustered around the congested megacities of Asia, their establishment could provide opportunities for more inclusive and geographically balanced development. Overall, the region still lacks infrastructure commensurate with its growing global influence, or its expected surge in Internet traffic. This would require more systematic intergovernmental cooperation to provide an organizing framework for expanding ICT connectivity, including through cooperation in satellite technology.

Enhancing regional financial cooperation

Asia-Pacific regional cooperation in finance has mostly been confined to mechanisms to provide short-term liquidity, but much potential remains unexploited. The Asia-Pacific region boasts vast reserves. However, these reserves are largely invested outside Asia and the Pacific in low-yielding securities in advanced economies. This can be attributed to the region's poorly developed regional financial architecture. In addition, a substantial amount of the region's private savings are held in other parts of the world. In 2008, they were valued at \$7.4 trillion, accounting for 23 per cent of invested assets worldwide. Only 16 per cent of the Asia-Pacific portfolio securities investment ends up in the region owing to the small size of the securities markets. All countries would benefit from the pooling of regional funds to provide liquidity, boost trade financing and increase investments for infrastructure.

The establishment of Asian Development Bank (ADB) in the 1960s and the Asian Clearing Union in the 1970s are examples of initiatives taken in the region to promote financial cooperation. A number of new ones have been added recently. However, most of them are in early stages of evolution and need to be scaled up to become more effective. For example, the Chiang Mai Initiative Multilateralization could play a key role in assisting member countries with short-term liquidity support. But thus far it has hardly been utilized because of its link with the International Monetary Fund conditionality beyond a 20 per cent threshold. Plans are in the works, to double the size of the initiative's funding from 120 billion and expand its operations to include a surveillance and monitoring office. However, the initiative's coverage needs to be expanded beyond the ASEAN+3 countries to other systemically important countries of the region and others and set up a quick disbursement facility to effectively serve as a regional lender of last resort.

The Asian Bond Fund and the Asian Bond Markets Initiative are also important initiatives to develop regional bond markets and mobilize financing for lesser developed countries. However, the scale of these initiatives needs to be expanded, and their coverage needs to be extended beyond ASEAN+3 countries. Therefore, it will take some time before Asian bond markets offer substantial sources of financing for infrastructure development.

In the area of infrastructure financing, an important recent initiative is the ASEAN Infrastructure Fund being set up in Malaysia with an initial equity base of \$485 million and support of ADB. The fund aims to catalyse more than \$13 billion in investments by 2020 through co-financing. In 2010, the SAARC Development Fund was set up in Bhutan with paid-up capital of \$200 million to finance infrastructure projects, including feasibility studies, but it also has social and economic windows. Investing in infrastructure across the Asia-Pacific region promises not only high rates of financial return, but also opportunities to diversify risk. Existing forms of investment, such as lending by ADB, could be complemented with a new large-scale lending facility for infrastructure. This facility could help coordinate other sources of lending such as by multilateral and bilateral

development agencies and private financial institutions. Its backing for infrastructure projects could also signal opportunities to private investors. As a regional body, the facility could also be in a position to keep track of intraregional spillovers and finance economically significant cross-border projects. Another possible function of the facility could be to provide advisory services and technical assistance. Its capital base could be funded by contributions made by central banks and funds raised through issuing bonds. The ESCAP secretariat is already engaged in elaborating elements of a regional financial architecture for supporting infrastructure investment, including the cross-border listing of equity and bonds by companies from across the region.

Economic cooperation for addressing shared vulnerabilities and risks

Not only can greater regional integration help countries capitalize on their strengths, but it can also help them address shared vulnerabilities, notably food insecurity, disasters, pressures on natural resources, social exclusion and rising inequalities.

Food security

In the past half-century, Asia and the Pacific has made tremendous progress in food security. Nevertheless, the region still faces persistent poverty and hunger. The main obstacle is not an overall lack of food. The problem is that many people are not consuming enough of that food. They are prevented from doing so by many factors, including poverty, natural disasters, conflict and war, poor access to resources, lack of employment opportunities, lack of education and underinvestment in agriculture as well as instability in the world food and financial systems.

Given that neighbouring countries share many resources critical to the production and distribution of food, food security also has strong regional dimensions. The High-Level Task Force on the Global Food Security Crisis indicated the following potential areas of regional cooperation: regional food reserves, information systems, cooperation in agricultural research, managing transboundary resources, and building regional agricultural markets. Asia and the Pacific is very diverse in food production, providing the region with considerable scope for collaboration. Thus, the challenge is to harness the region's assets into a cohesive strategy.

Dealing with disasters

The world seems to be increasingly affected by natural hazards. As populations grow, more people live in disaster-prone areas. As a result, the number of those affected by disasters tends to rise, though this may also reflect improved reporting.

Some disasters have a regional impact simply because natural phenomena extend across wide geographical areas. But the impacts of disasters can also be extended by growing economic interdependence. The 2011 floods in Thailand, for example, damaged factories belonging to one of the world's largest manufacturers of hard disks, severely affecting global computer supplies.

Most countries in the region have, to some extent, established national policies, legislation, or plans to prepare for and cope with disasters. Asia and the Pacific would also benefit from more comprehensive regional agreements and cooperation. Better management of transboundary river basins, for example, can prevent floods in neighbouring countries. The response to tsunamis also calls for regional cooperation to develop effective early-warning systems.

Regional and transboundary cooperation in developing adaptation strategies can bring mutual benefits to all countries, for example, by reducing uncertainty through exchanges of data and information. Cooperation can also widen the knowledge and information base, increasing the options for prevention, preparedness and recovery, and thereby arriving at better and more cost-effective solutions.

Pressures on natural resources and sustainability

Rapid economic growth in Asia and the Pacific has put greater pressure on natural resources. With limited per capita endowments, the region is particularly vulnerable to disruptions associated with volatile energy and resource prices, land use changes and climate change. Notably, these disruptions are becoming increasingly interconnected.

Some of the most significant pressures arise from rising demand for energy, which is projected to increase by about 34 per cent over the next decade. In addition, there are threats to biodiversity, sulphur dioxide emissions, the rapid accumulation of solid waste, and the increasing prices of many natural resources. As of 2005, the latest year for which these data are available, Asia and the Pacific was the world's largest user of resources, consuming 35 billion tons per annum of key materials such as biomass, fossil fuels, metal ores and industrial and construction materials – amounting to 58 per cent of the global use of resources.

Recognizing that these challenges to sustainability pose threats to economic growth and poverty reduction, the region's leaders have been developing regional responses. One of the important approaches involves the promotion of Green Growth. This will require technological innovation to improve eco- and resource efficiency.

In this context, a key priority is the development, commercialization and transfer of material- and carbon-efficient technologies and promoting lifestyle changes to reduce the material- and carbon-intensity of consumption.

The areas in which regional cooperation could help promote environmentally sustainable technologies include: creating a critical mass of skills, enabling the growth of low-carbon technologies; encouraging collaboration in research; developing regimes for intellectual property; establishing innovation hubs; and designing incentives to encourage technological switchover.

Addressing sustainability risks

The Asia-Pacific regional preparatory meeting for the United Nations Conference on Sustainable Development (UNCSD) – Rio+20 held in October 2011 underlined the need for regional cooperation to “facilitate technological innovation and transfer and promote access to green technologies at affordable costs”. A recent review of country submissions to the UNCSD secretariat confirms that technology transfer and capacity building are among the top priority issues.

Technological innovations are not only needed to improve eco- and resource efficiency. They are also critical to ensuring food security through the development of sustainable agriculture practices and to enhance the effectiveness of monitoring and early warning systems to reduce disaster risks. To maximize the effectiveness of the region's response to these interlinked challenges, the creation of a region-wide body named “Asia-Pacific Technology Development Council” (APTECH), could be considered. APTECH would serve as a regional apex body of national innovation institutions to foster cooperation and coordination in innovation to address common issues and shared problems with sectoral bureaus. It would promote cooperation in pre-competitive research and development with a fund for implementing joint innovation proposals. The intellectual property would be owned by APTECH and shared freely with members for onward sharing with national and regional enterprises for further competitive research.

Addressing social risks

Despite the region's economic dynamism, the number of people living in extreme poverty, suffering from hunger and lacking sufficient access to sanitation, education, health and financial services is still enormous. In addition, income inequality has increased, with the population-

weighted mean Gini coefficient for the entire region increasing from 32.5 per cent in the 1990s to 37.5 per cent in recent years. These two phenomena are related for a number of reasons. First, economic growth in the twenty-first century puts a premium on educated individuals who are not only literate but also adept at using modern ICT. When professionals and skilled workers are scarce in rapidly growing economies, their real wages tend to increase significantly faster than average, contributing to an increase in income inequalities. Second, there is much evidence that poverty and social deprivations, such as lack or insufficient access to basic sanitation, education and health services, play a large role in determining health outcomes – and thus the potential to engage fully in employment activities – across the population. In sum, economic growth is not necessarily the tide that lifts all boats.

A key objective of regional economic integration schemes is to narrow development gaps and bring about convergence in the levels of economic development of its participants through the optimal deployment of the region's resources. The objective of achieving a balanced and equitable regional development also creates conditions for a more enthusiastic participation of all partners, including those with scarce productive capacities. Some studies suggest that increased trade by itself, even if balanced, does not ensure economic development. Thus, growth in trade must be accompanied by complementary development policies, including investment, especially in infrastructure and other public goods such as education and research and development, and regional and sectoral programmes.

Many existing regional trading arrangements include balanced regional development and social cohesion policies. Apart from special and differential treatment provisions in favour of developing and least developed countries, which are normally incorporated in trade liberalization schemes, the regional trade and economic cooperation arrangements for Asia and the Pacific proposed in this study should be accompanied by the creation of regional development funds for promoting balanced regional development, the enhancement of infrastructure and connectivity and technological capability-building in the relatively poorer regions. With these steps accompanying the programmes of regional economic integration, regionalism in Asia and the Pacific would hopefully become a model of an inclusive, balanced, equitable and participatory development process for other regions to emulate.

Towards a broader and comprehensive framework

An ambitious agenda of regional economic integration would need a comprehensive institutional architecture. This could include the following elements:

A summit level body – An "Asia-Pacific Economic Summit" would be in charge of setting up the region's agenda and providing direction for its implementation.

Ministerial councils – These would focus on trade and investment, finance, transport, energy, food security and agriculture, environment, disaster risk reduction and technology and would give directions to respective senior officials committees.

Consultative Committee of Subregional Associations – This would bring together all subregional-bodies to facilitate mutual learning.

People-to-people contacts – Regional associations can organize interactions for all different professions. These should include an Asia-Pacific Business Advisory Council and an Asia-Pacific Network of Think Tanks.

The elaborate institutional architecture proposed here would need a secretariat to service it. ESCAP secretariat, being the universal and multidisciplinary intergovernmental body of Asia and the Pacific could be strengthened to provide secretariat services to APES, ministerial councils and their senior officials level operational bodies. In addition, the ESCAP secretariat would work closely with the ADB, the other key regional development organization with overlapping membership and committed to regional economic integration, especially in areas such as financial cooperation, infrastructure development and connectivity, trade facilitation, environment and technology development.

In December 1963, the First Ministerial Conference on Asian Economic Cooperation, held in Manila under the auspices of the Economic Commission for Asia and the Far East (ECAFE) as ESCAP was known then, endorsed a proposal to establish a regional development bank for Asia. To celebrate the fiftieth anniversary of that conference, ESCAP could convene the Asia-Pacific Ministerial Conference on Regional Economic Cooperation and Integration in 2013. This conference would also present an opportunity to review and discuss possible ways to implement the recommendations contained in this study and take steps to implement them, as appropriate, with the goal of turning the 21st Century into an inclusive and sustainable Asia-Pacific Century!



One

The case for regional economic integration in Asia and the Pacific



The Asia-Pacific region's rapid growth since the 1950s had been supported by a favourable external economic environment and opportunities arising from globalization. This, however, has changed dramatically in the aftermath of the global financial crisis of 2008-2009. In the new global environment, sustaining the region's growth and realizing the Asia-Pacific century critically depend on its ability to harness the potential of regional economic integration.

Compared with other parts of the world, regionalism has been slower to take off in Asia and the Pacific. As a result, the region still has many underexploited opportunities for taking advantage of the multiple complementarities among its diverse economies. In addition to sustaining levels of growth, this should also enable the region to achieve a more balanced social and economic development – as its lagging economies are poised to be boosted by closer connection and integration with economic growth poles such as China and India.

Close regional cooperation brings many other benefits, such as helping to foster peace between neighbouring countries and allowing them to address shared vulnerabilities and risks. It should also enable them to participate more effectively in global economic governance by exercising a degree of influence commensurate with their rising economic weight.

Re-emerging Asia and the Pacific

Though the economic rise of Asia and the Pacific may seem to be a modern phenomenon, it is in fact a re-emergence. Through previous millennia up to the early part of the nineteenth century, the Asia-Pacific region dominated the global economy. Until 1820 Asia generated more than half of the global GDP, with China and India accounting for one-quarter each. Then, following the era of colonialism the region witnessed a period of relative stagnation, with its global economic share declining to 22 per cent in 1913 and 16 per cent in 1950.¹ As a result, in the 1960s there were some pessimistic assessments of the region's economic prospects.²

FIGURE TITLE

I.1. Real rates of growth of GDP, Asia-Pacific economies and advanced economies

Source: ESCAP based on United Nations Statistical Division, National Accounts Main Aggregates database; and International Monetary Fund, World Economic Outlook database (accessed 10 March 2012).

But the pessimists were proved wrong. The economic revival in Asia started in Japan, whose economic growth in the 1950s and 1960s had boosted the region's share in the world economy to 20 per cent in 1970. Japan was followed by the newly industrializing economies (NIEs) – the Republic of Korea; Singapore; Hong Kong, China; and Taiwan Province of China – in the 1970s and by Indonesia, Malaysia, the Philippines and Thailand in the 1980s. This "Asian miracle" increased the region's share of global GDP to 28 per cent in 1990.³ Then, with the region's most populous countries, China and India, joining the growth bandwagon in the 1990s and 2000s the Asian share of the world GDP increased to as much as 39 per cent in 2008. Because of the region's fast growth (figure I.1), the centre of gravity of global economic activity has been shifting decisively to the East.⁴

This shift is expected to continue during the twenty-first century, which commentators have referred to as the "Asian century". One assessment in 2003, for example, indicated that by 2050, along with the United States of

America and Japan, China and India would be among the world's top four economies.⁵ Subsequent revisions have suggested that they could achieve this prominence even more swiftly.⁶ In a similar vein, a 2011 study supported by ADB projected that between 2010 and 2050 the region's share in global GDP would rise from nearly 28 to more than 52 per cent, with China accounting for 20 per cent and India for 16 per cent.⁷

This economic dynamism has helped lift hundreds of millions of people out of poverty – a pace of poverty reduction unparalleled in human history. If these trends continue, the region could eventually eliminate the world's largest concentration of poverty.

But this cannot be taken for granted. The promise of the Asian century might not materialize. After the global financial crisis of 2008-2009, countries in Asia and the Pacific have found themselves in a very different economic environment. As well as producing more goods, they will also need to provide more of their own markets for them.

Factors contributing to Asian dynamism

Economic success in Asia, in particular in East Asia, was due to many factors. Importantly, these countries invested significantly in human resources, while supporting the private sector and promoting technology and innovation. They also aimed for macroeconomic stability, while achieving pragmatic balances between the roles of states and markets and between export promotion and import substitution.

Other factor that contributed to the region's dynamism was access to technology, finance and markets of the Western advanced economies. Japan, for example, received a great boost from procurement by the United States in the wake of the Korean War. Later, the Republic of Korea benefited from the United States procurement in the wake of the war in Viet Nam. Similarly, during the Cold War era, the NIEs of Taiwan Province of China; Hong Kong, China; and Singapore, all close allies of the United States, received substantial help from the West in the form of ready markets for their products. The NIEs also benefited greatly when the advanced economies of the West, and later Japan, relocated some of their industrial production, especially labour-intensive manufacturing.

Subsequently, many of these industries moved to China, which offered cheaper labour. And during the first decade of this century, China was able to take advantage of a buying spree by American consumers, which enabled it to generate enormous external trade surpluses. Over the same period, India too was able to benefit from Western outsourcing, notably for information technology (IT) services.

Until 1995 and the completion of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) negotiations, most Asia-Pacific developing economies were able to take advantage of multilateral trade agreements without having to offer much in return. Seeking to build productive capacities and export-oriented industries, they were, for example, free to protect infant industries and offer subsidies, while requiring that foreign investors meet requirements on local content and export performance.⁸ They were also able

to exploit relatively soft intellectual property protection regimes.⁹ In addition, during this period they did not face constraints on the use of natural resources or the threat of climate change.

A challenging new context for the region

Now these developing economies face a very different global environment. Firstly, the growth of imports of the United States and the euro zone economies from Asia and the Pacific is unlikely to revert to the pre-crisis trend. These Western economies, which are still recovering from the 2008 global financial crisis, face a subdued and uncertain outlook¹⁰ and have large public debts and ageing populations. They also have limited carbon space. Having contributed about 70 per cent of the current global stock of greenhouse gases, they will have to drastically reduce their share of emissions. As a result, although the advanced economies of the West will remain important markets, they are unlikely to remain the Asia-Pacific region's main engine of growth.

In addition, since the completion of the Uruguay Round of the GATT, Asia-Pacific countries have faced a restricted policy space with tightened intellectual property regimes and reduced opportunities for imposing performance requirements on foreign investors. Nor is there much prospect of further multilateral trade liberalization. The WTO Doha Round has been in a stalemate for more than a decade. Indeed, the trend seems to be towards greater protection in the form, for example, of penalties on outsourcing, rising visa fees for immigrant workers, the imposition of countervailing duties on developing country products and unilateral carbon taxes on foreign airlines.¹¹

At the same time, the faster-growing emerging economies in the region need to deal with surges of short-term capital inflows which threaten the stability of financial and capital markets.¹² The more vulnerable economies also face the prospect of reduced inflows from development assistance, which fell globally between 2010 and 2011 by 3 per cent.¹³

Rising inequality threatens social cohesion

The region has made significant progress towards achieving many of the Millennium Development Goals, particularly in reducing poverty (figure I.2); between 1990 and 2009, the mean headcount poverty ratio fell from 50 to 22 per cent.¹⁴ But Asia and the Pacific is still home to close to one billion people living on less than \$1.25 a day. Indeed, the bulk of the world's deprived people, including those without access to sanitation and undernourished children, live in the Asia-Pacific region (figure I.3).¹⁵

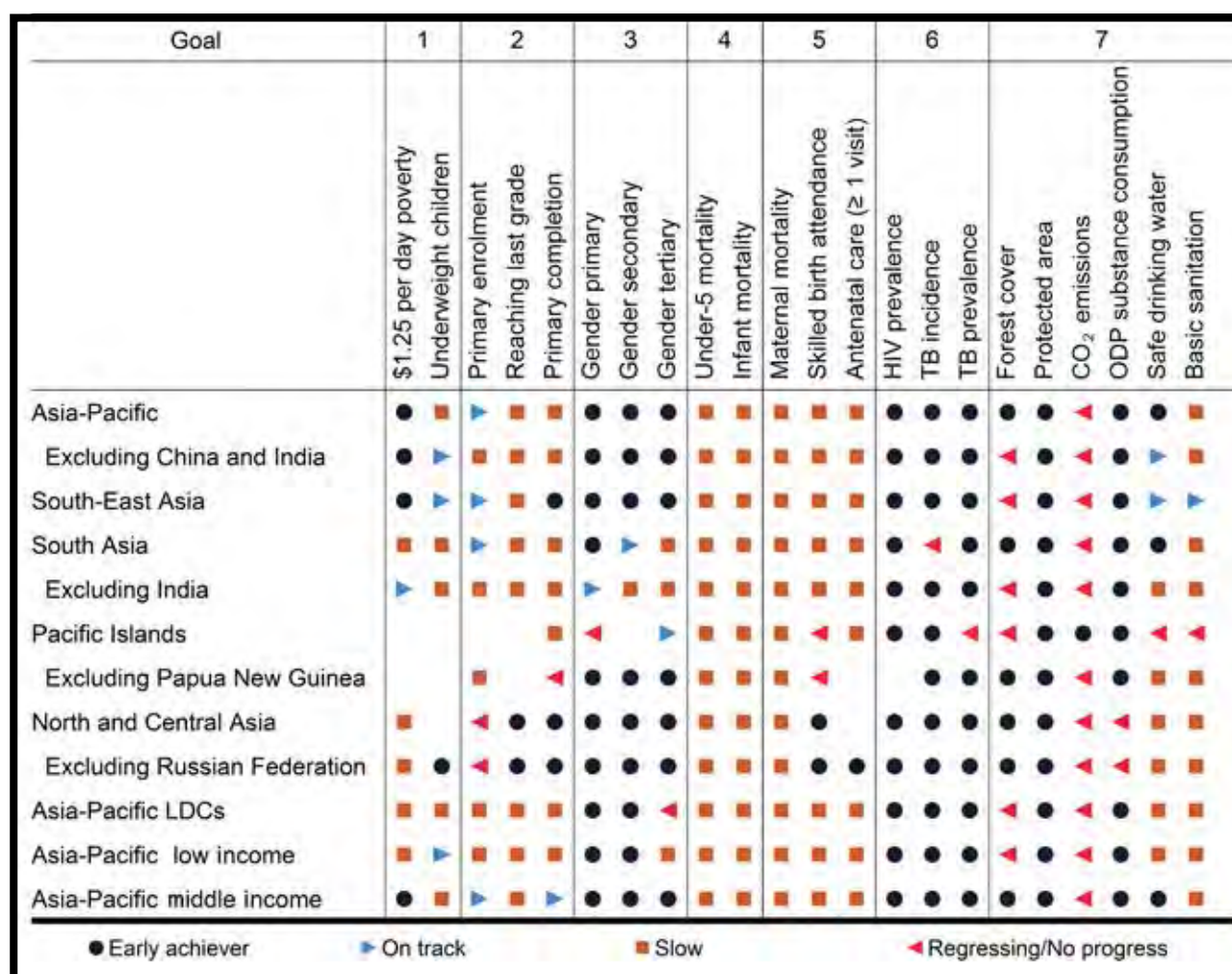
Although economic growth has led to an increase in the incomes of the poor, the incomes of the rich have increased more swiftly. As a result, the region is now facing rising inequality with potential threats to social cohesion. Since the 1990s, the population-

weighted mean Gini coefficient for the region as a whole increased from 32.5 to 37.5, and only 10 of the 25 countries that enjoyed positive annual economic growth succeeded in reducing income inequality. This rise in inequality partly reflects the transition from agriculture to industry and services, in which there are more significant wage differentials, as well as rapid technological change, which puts a premium on higher levels of education and leaves fewer opportunities for low-skilled workers. At the same time, workers have experienced a decreased bargaining power.¹⁶

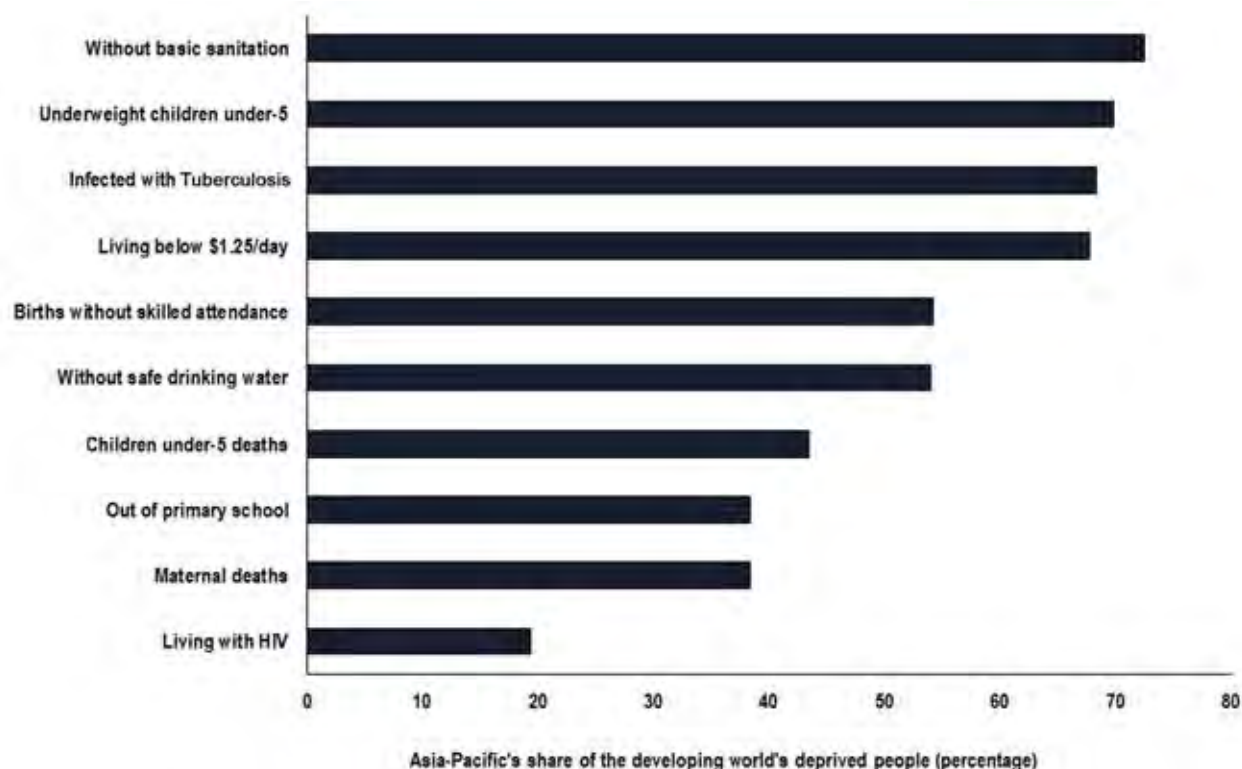
Inequalities in income are accompanied by inequalities in access to sanitation, education, health services, food, electricity and credit. There are also marked differences between households in urban and rural areas, between women and men, and between different social and ethnic groups. Indeed, socioeconomic

FIGURE TITLE

I.2. Country groups on and off track for the MDGs



Source: ESCAP, ADB and UNDP, *Asia-Pacific Regional MDG Report 2011/12*, table I-1, p. 9 (Bangkok, United Nations and ADB, 2012).

I.3. The Asia-Pacific share of the developing world's deprived people

Source: ESCAP, ADB and UNDP (2012).

inequalities could be a significant obstacle for the achievement of the Millennium Development Goals.¹⁷ The connection between income and socioeconomic inequalities is discussed in chapter five.

The region's rising inequality and persistent development gaps between and within countries do not augur well for social cohesion, peace or stability, and could lead to friction between countries and hamper the process of growth itself.

Disaster risks

A further concern in the years ahead is that many more people in the Asia-Pacific region are likely to be exposed to natural disasters. Asia and the Pacific is the world's most disaster-prone region. During the period 1980-2009 it accounted for 45 per cent of global disasters, 42 per cent of the economic losses from disasters, and 86 per cent of disaster-related deaths.¹⁸ In 2011, a number of countries were severely affected by natural disasters, starting with the earthquake in Christchurch, New Zealand, followed by the earthquake and tsunami in Japan, and severe flooding in a

number of countries, notably Thailand and Pakistan. Overall, the damages and losses for the Asia-Pacific region in 2011 were at least \$267 billion.¹⁹ Disasters typically hit the poor and most vulnerable hardest, because they tend to live in the most exposed areas.

Natural disasters do not respect national borders and often affect a number of countries. But even when the physical damage is limited to one country, by disrupting the operation of global supply chains their economic impact can be transmitted to other countries across the region. For example, the 2011 earthquake and tsunami in Japan affected auto and electronic industries across the region through the scarcity of some critical parts. Similarly, the floods in Thailand shut down a major producer of hard-drive components, affecting both regional and global computer industries. Droughts and floods often result in crop losses, potentially increasing regional and global food prices and heightening food insecurity. The 2010 flood in Pakistan is a prime example of this.

Therefore, Asia-Pacific countries need to invest more in disaster risk reduction, particularly in

those areas where rapid economic growth has heightened risks. They will also need to develop effective early warning systems and plans for disaster management and recovery.²⁰ As the problems and impacts of natural disasters often go beyond national boundaries, addressing them through regional cooperation would be most effective.

Pressures on natural resources

A significant constraint on economic growth in Asia and the Pacific, as elsewhere, has been the recent rise in commodity prices – much of which reflects the region's rapidly increasing demand.²¹ Between 2000 and 2008, the region's share of global energy use, for example, increased from 39 to 45 per cent.²² In addition, the threat of global warming will reduce both global and regional carbon space. Economic growth in Asia and the Pacific thus needs to be sensitive to environmental sustainability – undertaking technological innovations to reduce the use of energy and other resources and re-orienting lifestyles towards low-material and low-carbon consumption paths.

Regional integration for an inclusive and sustainable Asia-Pacific century

These and other constraints could well affect future growth in Asia and the Pacific. Indeed, a number of middle-income Asia-Pacific economies could face long periods of slow growth that would leave them in a "middle-income trap". This is suggested by the experience of NIEs, such as Malaysia, the Philippines and Thailand, which have experienced relatively slow growth rates since the 1997 Asian financial crisis. Recent analysis by the Asian Development Bank estimates that in these circumstances Asia's GDP in 2050, instead of reaching the projected 52 per cent of the global GDP under the "Asia-Pacific century" scenario, would reach only 31 per cent.²³

Sustaining growth in the future will require rebalancing the Asia-Pacific economies so that they rely less on exports to the developed countries and more on domestic and regional sources of demand.²⁴ Unless the region

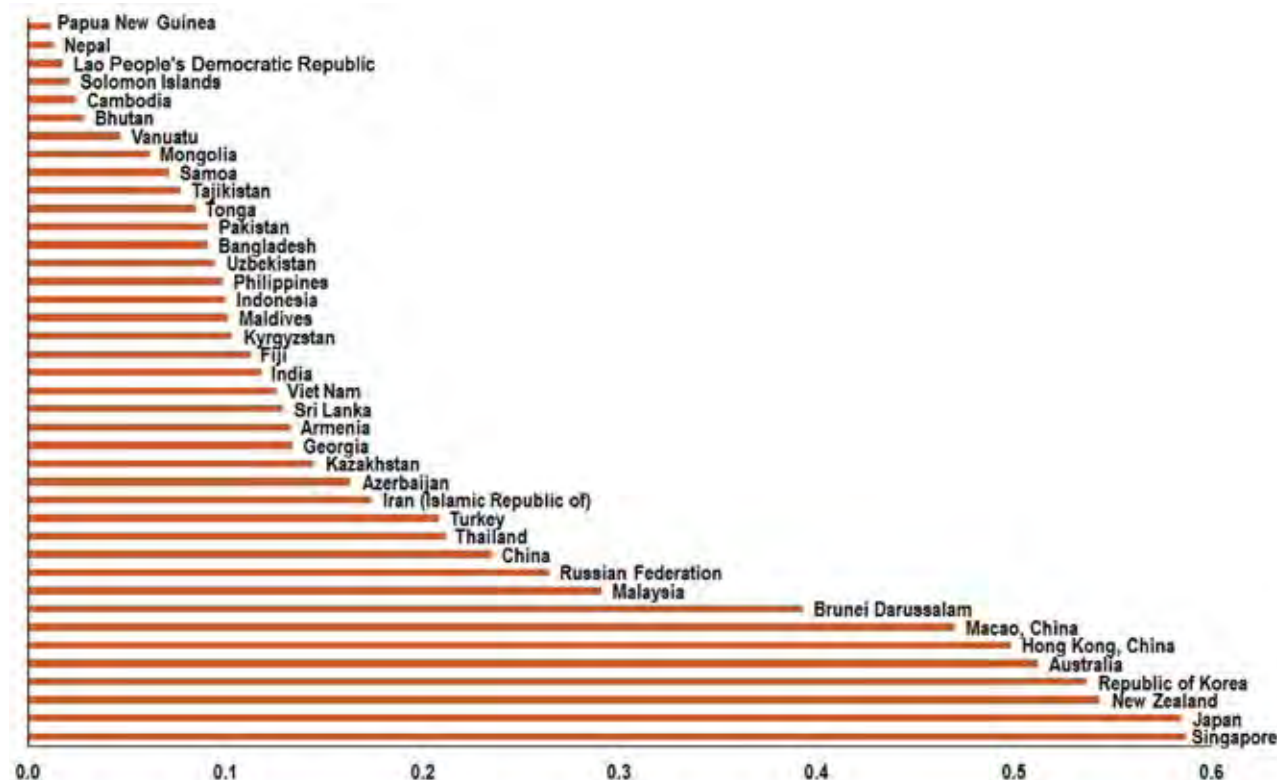
develops alternative engines of growth, its growth rate will slow below what is needed to reduce poverty sufficiently and to provide enough decent jobs for its burgeoning youth population. The current slowdown of China, India and other economies in 2011-2012 highlights the urgency of this issue.

Turning development gaps into engines of growth

One of the most promising reservoirs of domestic demand is the region's "bottom billion" people currently living in poverty. To join the mainstream of Asia-Pacific consumers, their purchasing power must be boosted. This will require broad-based investment in education, health services, social protection and basic infrastructure, which will facilitate access to employment and business opportunities for all social groups. From this perspective, social policy should not be viewed as an expense but as a strategic investment that, in addition to promoting social justice, would sustain the region's growth. Closing the Millennium Development Goals gaps would require an investment of \$639 billion.²⁵

Another important investment opportunity is infrastructure. Across the region, there are some striking contrasts in the availability of the infrastructure that is critical for economic and social development. These disparities are reflected in ESCAP's composite infrastructure index, which indicates striking contrasts between developed economies such as Singapore and Japan and least developed countries (LDCs) such as the Lao People's Democratic Republic, Nepal, Papua New Guinea and Solomon Islands (figure 1.4). Closing the infrastructure gaps across the region would require investments of the order of \$8 trillion over a decade, or about \$800 billion per annum.²⁶

If these investments were to be funded, they could provide another substantial source of aggregate demand, while contributing to a more equitable and geographically balanced pattern of regional development.

I.4. Infrastructure index, selected economies

Source: ESCAP, based on ESCAP, *Economic and Social Survey of Asia and the Pacific 2010* (Sales No. E.10.II.F.2), figure 61, p. 135.

Building productive capacities in the poorest economies

The greatest opportunities for the least developed countries will arise from establishing closer links with the region's growth poles – China and India. Regional integration usually leads to a process called “efficiency-seeking industrial restructuring”. While such processes allow domestic and foreign firms to exploit economies of scale and specialization and save in labour or materials costs, they can also provide many benefits for poorer countries, particularly through building productive capacities. The process of efficiency-seeking industrial restructuring could also help Asia-Pacific countries avoid falling into the middle-income trap.

Addressing shared vulnerabilities

Regional integration can also help Asia-Pacific countries address shared vulnerabilities and risks, many of which are economic. The 1997 Asian financial crisis, for example, started in Thailand and then spread across East Asia, highlighting regional interdependencies – and prompting a response in the form of the

Chiang Mai Initiative. But there are many other shared concerns. One is energy security – the provision of energy at affordable prices. This could be fostered by a number of measures such as linking production and consumption centres through power grids and oil and gas pipelines, joint technology development programmes for non-conventional sources of energy, and the development of a regional energy market. Another vulnerability is the pressure on natural resources, which is pushing up commodity prices. In response, countries in Asia and the Pacific could pool resources to develop material-saving and low-carbon technologies. Food security is a further shared concern; regional responses could include pooling resources for joint research.

Fostering peace and stability

By deepening mutual interdependencies and opening up more spaces, formal and informal, for cross-country dialogue, regional economic integration can promote greater mutual understanding, help in resolving conflicts and usher peace and stability.²⁷

Giving a voice to the region in international forums

Finally, regional cooperation and integration would enable Asia and the Pacific to exercise influence in global economic governance commensurately with its growing economic weight. The region would thus be in a stronger position to shape the emerging global economic order in tune with its development requirements.

Conditions for fruitful integration

Regional economic integration is more likely to be successful when the process can be grounded in a shared history and culture. Exchanges are facilitated when countries have complementarities in factor endowments that can be shared to mutual benefit. And integration based on trade would be more fruitful if it opens up large and growing markets.

Shared history, culture and values

Many areas of the Asia-Pacific region have distinct identities shaped by centuries of history and cultural exchanges. In Asia, much of this has been rooted in trade – starting with the famed Silk Routes of two thousand years ago. Trade in goods has been accompanied by a vibrant exchange of ideas. Another notable unifying factor has been shared religious beliefs. The impressive cultural sites of Bagan in Myanmar, Borobudur in Indonesia, and Angkor Wat in Cambodia are a testimony to the vast trading and cultural networks that Asia had in ancient times.

This long history of interaction is also notable in that it has been accompanied by few major conflicts between countries. India and China have, for example, over the centuries been highly developed nations – economically, militarily, ideologically and culturally. They could have been competitors for dominance. Yet that has not happened. Indeed, the history of their relationship has been one of mutual respect and coexistence. Recent perceptions of Asia as a conflict-ridden region should not hide centuries of cooperation between India, China, Japan and what is now the

ASEAN region. These historical roots provide a strong basis for establishing an Asia-Pacific community.²⁸

Synergies for mutually beneficial cooperation

Fruitful integration requires synergies or complementarities based, for example, on diverse factor endowments or specializations. Some of these will be the result of differing levels of development. Asia and the Pacific includes high-income countries such as Japan, Australia, New Zealand, and the Republic of Korea, which are members of the Organisation for Economic Co-operation and Development (OECD), and at the other end of the scale a number of low-income and least developed economies. This diversity opens up opportunities for mutually beneficial exchanges of development experiences.

There are also complementary factor endowments. Some economies in East Asia have abundant capital but rapidly ageing workforces. Others, particularly in South and South-East Asia, may have less capital but should for the next few decades benefit from a demographic dividend of a young and growing workforce. Regional economic integration should thus enable labour-intensive industries to gravitate to labour-abundant countries where they can help build productive capacity. Meanwhile, labour-scarce economies can specialize in the production of capital- and knowledge-intensive goods.

Another area of complementarity is finance. China and Japan, for example, have accumulated sizeable foreign exchange reserves which they are investing in the United States and Europe, often at relatively low rates of return. Countries concerned about the future value of these assets could instead invest more productively closer to home – in infrastructure development projects that currently remain underfunded despite high long-term payoffs.

There are also complementarities in energy production and consumption. On the one hand, economies such as Indonesia, the

Islamic Republic of Iran, Kazakhstan, Malaysia, the Russian Federation and Turkmenistan have abundant hydrocarbon energy resources. On the other hand, major economies such as China, India, Japan and the Republic of Korea are highly dependent on hydrocarbon imports.

The Asia-Pacific region has also developed cross-country complementarities within industries. East Asian countries, for example, have specialized in manufacturing and hardware while South Asian economies have focused on services and software. Recent analyses have found significant complementarities at disaggregated industrial sectors both within and between subregions, with the latter being generally higher than the former.²⁹

Large markets and a growing middle class

Another important factor for the success of regionalism is a large and growing market. With rapid economic growth, the Asia-Pacific region is emerging as the main source of final demand for the region's exports. China and India now have sizeable middle classes which form the world's largest markets for a growing range of products and services, such as mobile phones, motor cars and jet planes. As a result, between 2000 and 2010 the proportion of Asia-Pacific trade that was carried on an intraregional basis rose from 48 to 54 per cent.³⁰ The region's large and rapidly growing markets make regional economic integration an increasingly viable development strategy.

This would not only enable the poorer countries of the region to take care of their development challenges, such as poverty and hunger, but would also benefit the advanced economies of the West by absorbing more of their exports and thus help bring down their levels of debt. Asia and the Pacific could therefore become a growth pole for the advanced economies and other developing regions.³¹

Lessons from global experience

Since the early 1990s, the "new regionalism" has been a dominant trend in the world

economy, particularly in Europe with the formation of the Single European Market and in North America with the signing of the North American Free Trade Agreement (NAFTA). In comparison with earlier and shallower forms of cooperation, these regional trade agreements (RTAs) pursued free trade complemented by strong rules of origin and mobility of capital and, in the European Union (EU), mobility of labour. Subsequently, the EU deepened integration, expanded its membership and progressively evolved into an economic union, with some of its members forming a monetary union with a single currency.

Other regions have pursued similar RTAs. In Latin America and the Caribbean, these include the Common Market of the South (MERCOSUR), the Caribbean Community (CARICOM) and the Andean Community of Nations, and in Sub-Saharan Africa, the Common Market for Eastern and Southern Africa (COMESA) and the Southern Africa Development Community (SADC). There are now some 300 plurilateral and bilateral FTAs³² across the world and an important part of global trade is now conducted on a preferential basis.³³ This also encourages other countries to negotiate their own RTAs to prevent discrimination by trading partners that belong to existing RTAs.

During the last 20 years, there has been a debate on the impact of RTAs on further trade liberalization. Are they stumbling blocks or building blocks? Recent research tends to support the view that regionalism, by liberalizing trade, should be viewed as a building block of multilateralism.³⁴

RTAs also create larger markets, which are attractive to foreign investors. For example, since the formation of the single market the EU has increased its share in global FDI inflows from nearly 30 per cent in the 1980s to about 50 per cent today.³⁵ Similarly, Mexico has benefited from its NAFTA membership. Comparing the periods 1991-1993 and 2000-2002, annual FDI inflows increased from \$12 billion to \$54 billion, as many industries relocated to maquiladora processing zones in the north of Mexico.³⁶ The strong association between membership in RTAs and FDI

inflows has been confirmed in a number of quantitative studies.³⁷ Mexico also benefited from lower volatility in its growth rate and a substantial improvement in total factor productivity.³⁸

Even more important than providing larger markets, RTAs help strengthen overall competitiveness by enabling intraregional FDI to achieve extensive industrial restructuring or rationalization. Therefore, most RTAs now extend their scope beyond trade to include investment liberalization and facilitation. This means, for example, that multinational enterprises (MNEs) no longer need to maintain horizontal national operations and instead can assign the responsibility for serving specific regional or even global markets in particular products to certain affiliates to harness economies of scale and specialization – a strategy sometimes called “product mandating”.³⁹

Deeper integration encourages industries to migrate to low-wage locations to the advantage of the lesser developed economies. In the EU the poorer members have benefited from resource transfers, but they have also gained significantly from industrial restructuring. For instance, after joining the European Economic Community in 1973, Ireland increased its per capita income from 59 per cent of the European average to over 100 per cent by 1998.⁴⁰ Both Ireland and other countries that joined the EU since the 1980s such as Greece, Portugal, Spain, Slovenia and the Czech Republic are also among those that managed to avoid the middle income trap and

moved to high income status (table I.1). Some of these countries, especially Greece, Portugal and Spain have subsequently accumulated unsustainable levels of debt because of imprudent financial management and are currently facing serious economic difficulties. But this is more the result of financial mismanagement – and a demonstration that monetary union needs to be complemented by fiscal union.

Even though the Asia-Pacific region is a recent entrant in the area of regional economic integration, the experience of some of its countries fit the pattern observed from other regions. For instance, Cambodia, Lao People’s Democratic Republic and Viet Nam, which joined ASEAN in the 1990s, have seen their per capita income levels rapidly moving towards the ASEAN average (figure I.5, panel A). In addition, the share of these three countries in ASEAN’s cumulative FDI inflows increased rapidly in the mid-1990s and late 2000s (figure I.5, panel B)

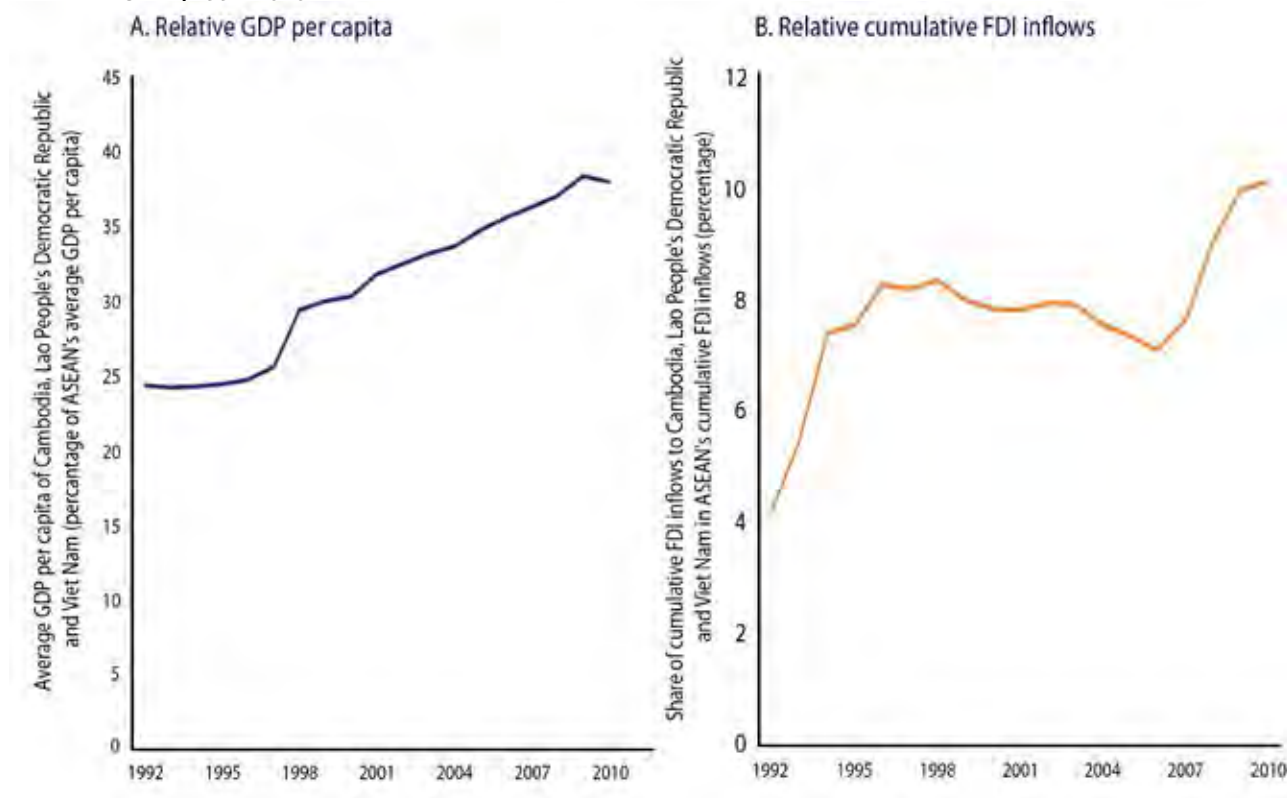
In South Asia, the India-Sri Lanka FTA signed in 1998 can be taken as an early experiment in regional economic integration. Between 2000, when the FTA became effective, and 2005-2006, India’s exports to Sri Lanka rose annually on average by 34.5 per cent while those of Sri Lanka to India grew by 132 per cent. As a result, Sri Lanka’s imports to exports ratio fell from 10.3:1 to 3.3:1 over this period. In addition, the number of Sri Lankan export items tripled with a notable shift from agricultural products to high-value added manufacturing goods such as tea, sausages,

TABLE TITLE

I.1. Transitions from middle-income to advanced-country levels

Country	Growth phase in transition	Income per capita at start (US dollars, PPP)	Income per capita at end (US dollars, PPP)	Time in years	Growth per annum in transition
Cyprus	1994-2004	15 002	23 736	10	4.8
Czech Republic	2000-2007	14 960	24 279	7	7.2
Finland	1988-2000	14 920	24 441	12	4.2
Greece	1995-2004	14 957	24 059	9	5.4
Ireland	1993-1998	14 934	23 520	5	9.5
Portugal	1997-2008	15 574	23 093	11	3.6
Slovenia	1998-2005	15 412	23 388	7	6.1
Spain	1991-2001	15 027	23 421	10	4.5
Sweden	1987-1998	15 722	23 468	11	3.7

1.5. Performance indicators of Cambodia, Lao People's Democratic Republic and Viet Nam, in comparison with ASEAN, 1992-2010



Source: ESCAP based on data from World Bank, World Development Indicators database.

Note: Myanmar and Brunei Darussalam are not included in the total for ASEAN because of missing GDP data for these countries. Cumulative FDI inflows is the sum of FDI inflows between 1992 and subsequent years.

biscuits, chocolates, ceramics, furniture, metal products, footwear, wooden toys, herbal products, memory chips, and machinery and mechanical appliances, many of which are produced with FDI from India. Around three-quarters of Sri Lanka's exports have been undertaken within the framework of FTA preferences. Finally by 2004-2005 India was Sri Lanka's fourth largest source of FDI.⁴¹

Emerging regional economic integration in Asia and the Pacific

The Asia-Pacific region has been a relatively late-starter with regard to regional economic integration. There were some significant achievements in this area during the 1970s, including the signing in 1975 of what is now the Asia-Pacific Trade Agreement (APTA), and the creation in 1974, also under the auspices of ESCAP, of the Asian Clearing Union.⁴² In general, however, the Asia-Pacific economies retained a deep and abiding faith in multilateralism.

But in the 1990s views started to change. This was partly due to the slow progress of multilateral trade negotiations and the rise of regionalism elsewhere. More importantly, the Asian financial crisis of 1997 highlighted the economic interdependences of a number of countries. This led to the Chiang Mai Initiative for monetary cooperation, which involves ASEAN+3 (China, Japan and the Republic of Korea). In the late 1990s Japan changed its views on trade policy, recognizing that RTAs could advance its interests.⁴³ Since then, the region has undertaken a series of initiatives towards regional economic integration.

One of the most significant forums has been ASEAN. Although set up in 1967, this forum involved relatively little economic cooperation until the signing in 1992 of the ASEAN Free Trade Agreement whose implementation was accelerated to 2002 from 2008 in the aftermath of the Asian crisis. Member countries further deepened cooperation with the ASEAN Economic Community planned to be established in 2015.

Similarly, the South Asian Association for Regional Cooperation (SAARC) came into being in 1985 but did not adopt a programme of economic cooperation until 1991 when it formed the Committee on Economic Cooperation. In 1995, the members created a SAARC Preferential Trading Agreement and in 2004, they eventually agreed to create a SAARC Free Trade Area to be implemented over 10 years starting in 2006. At a summit in Bhutan in 2010, SAARC members adopted a SAARC Agreement on Trade in Services and established the SAARC Development Fund.

Another notable initiative is the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). This spans two subregions: from South Asia, it includes Bangladesh, Bhutan, India, Nepal and Sri Lanka and from South-East Asia, Myanmar and Thailand. In 2004, BIMSTEC adopted a framework agreement for a free trade agreement to be implemented within 10 years.

Initiatives in other subregions include the Economic Cooperation Organization (ECO), initially formed in 1985 by the Islamic Republic of Iran, Pakistan and Turkey, but later expanded to include Afghanistan and six Central Asian countries – Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. In 2003, the members established the ECO Trade Agreement.

In the Pacific, what is now the Pacific Islands Forum (PIF) was set up in 1971 and has 16 member States, including Australia and New Zealand and 14 independent Pacific island developing economies. In 2006, within the framework of the 2001 Pacific Agreement for Closer Economic Relations, 12 members of PIF, also signed the Pacific Island Countries Trade Agreement.

These subregional agreements are complemented by a number of bilateral trade agreements between countries of the subregions and across the subregions.

Seeking broader regionalism

As observed earlier, the complementarities and synergies between subregions are generally greater than those within

subregions. Therefore, for capital, people and natural resources to be deployed optimally, they should be able to work within a broader regional framework.⁴⁴ This can be achieved by coalescing bilateral and subregional FTAs. In this respect, ASEAN has taken some exemplary initiatives to bring together countries from different subregions. Since 2002, ASEAN has upgraded its dialogue partnerships with neighbouring countries to an annual summit level that has fostered numerous arrangements for regional and bilateral free trade that are at different levels of implementation. It has, for example, negotiated “+1” RTAs with Australia, China, India, Japan, New Zealand and the Republic of Korea. These economies are also engaging each other – for instance, through the India-Japan and the India-Republic of Korea comprehensive economic partnership agreements, already concluded. ASEAN’s engagement with dialogue partners has also led to broader groupings. Besides ASEAN+3, it also organizes an annual East Asia Summit (EAS) which involves ASEAN and all its dialogue partners. EAS, which brings together 16 of the largest and fastest-growing economies, is expected to pave the way for a broader regional arrangement in Asia that could be the third pole of the world economy.⁴⁵ In 2007, the EAS leaders launched a track-II study group for examining the feasibility of a Comprehensive Economic Partnership of East Asia (CEPEA) comprising 16 (ASEAN 10 +6) countries whose results were presented at the fifth EAS summit in 2009. At the Bali Summit in November 2011, two new members were admitted to EAS – the United States and the Russian Federation.

A further indication of the growing recognition of broader regional economic integration in Asia and the Pacific is that the region’s leaders have articulated their visions of a broader Asia-Pacific community allowing exploitation of the region’s vast synergies for mutual benefit (box I.1). The past decade has also witnessed a steady stream of studies making the case for broader regionalism in Asia and the Pacific, including by the Asian Development Bank.⁴⁶

Gains from economic integration

A number of recent studies have indicated the potential gains from economic integration.

An ADB study, for example, compared the impact of regional integration with global trade liberalization under different scenarios to 2025.⁴⁷ Using the Global Trade Analysis Project database with the World Bank's LINKAGE model, the study found

that regional trade and integration could offer great potential. It also concluded that much of the gains in Asia from global trade liberalization could be realized by a regional initiative alone. Significantly, it ascertained that the gains from abolishing global tariffs

BOX I.1. Asia-Pacific leaders' statements on broader regionalism

Dr. Manmohan Singh, Prime Minister of India, said at the Third India-ASEAN Business Summit in New Delhi on 19 October 2004:

"We envision an *Asian Economic Community*. (...) Such a community would release enormous creative energies of our people. One cannot but be captivated by the vision of an integrated market, spanning the distance from the Himalayas to the Pacific Ocean, linked by efficient road, rail, air and shipping services. This community of nations would constitute an 'arc of advantage', across which there would be large-scale movement of people, capital, ideas, and creativity. (...) This is an idea whose time is fast approaching, and we must be prepared for it collectively."

The Chairman's Statement at the Fourth East Asia Summit in Cha-am Hua Hin, Thailand on 25 October 2009 included the following passage:

"We acknowledged the importance of regional discussions to examine ways to advance the stability and prosperity of the Asia-Pacific region. In this connection, we noted with appreciation the following:

- a. the Philippines's proposal to invite the heads of other regional fora and organizations in Asia-Pacific to future EAS meetings to discuss measures that will protect the region from future economic and financial crisis and strengthen Asia economic cooperation, including through the possible establishment of an *economic community of Asia*.
- b. Japan's new proposal to reinvigorate the discussion towards building, in the long run, an *East Asian community* based on the principle of openness, transparency and inclusiveness and functional cooperation.
- c. Australia's proposal on the *Asia Pacific community* in which ASEAN will be at its core, will be further discussed at a 1.5 track conference to be organized by Australia in December 2009."

Sources: Singh (2004), East Asia Summit (2009), emphasis added.

would be far outweighed by those resulting from removing tariff and structural barriers to Asian trade. It also concluded that regional integration would promote Asian economic convergence, raise average growth rates and benefit poorer countries. In particular, greater regional integration would propagate commercial linkages and transfer the stimulus from the rapid-growth economies of Asia, particularly China and India, to their lower-income neighbours. A more recent study estimated potential welfare gains from regional economic integration within the CEPEA framework of up to \$284 billion – which is in tune with previous studies and larger than other regional integration schemes.⁴⁸

Strengths, weaknesses, opportunities and threats of broader regionalism

Broader regionalism in Asia and the Pacific would not only bring a number of strengths and opportunities but also suffer from some weaknesses and threats.

Strengths – Many of these arise from complementarities. Some economies such as those of Australia, Islamic Republic of Iran, Myanmar and the Russian Federation are well endowed with natural resources while others depend more on imports. Some economies, such as those of China, Japan, and the Republic of Korea, depend more on manufacturing while others, such as India and the Philippines, are dominated by services. The region not only has large net exporters, such as China, Japan, the Republic of Korea and most of the ASEAN countries but also has net importers such as India. The region has some of the world's fastest-growing economies, including China and India, and others with large markets such as Japan. Collectively, the region is endowed with natural resources as well as large human and financial resources. Furthermore, the Asia-Pacific economies have already arrived at numerous bilateral and subregional FTAs that provide valuable foundations for a broader regional grouping. Another strength is that many Asia-Pacific countries in the past have enjoyed vibrant intraregional trade and have centuries-old civilizational and cultural links.

Opportunities – As western sources of aggregate demand decline, Asia-Pacific countries need to rebalance their economies. This opens up opportunities to boost not just domestic but regional consumption. Another opportunity arises from greater political and public support for regionalism as is evident from the statements of different leaders as well as from perception surveys. The slow progress in the Doha Round of multilateral trade negotiations also creates space by releasing negotiators to work on regional arrangements. Businesses can also take advantage of opportunities to reduce transaction costs caused by the “noodle bowl” syndrome and seek efficiency through industrial restructuring. Industrial restructuring also opens up the prospect of narrowing development gaps by building productive capacities in poorer economies.

Weaknesses and threats – These arise from the perceived lack of strong political will and leadership. ASEAN has been a driving force but its first priority, understandably, is to complete the ASEAN Community. Broader integration is also slowed by a lack of coherence: some members would prefer a less-inclusive EAFTA while others vigorously oppose it in favour of the more inclusive CEPEA. Progress can also be slowed by bilateral political tensions and sensitivities. In fact, such tensions could be reduced within a broader grouping. Other weaknesses are the lack of regional institutions, shallow financial markets and inadequate transport infrastructure.

On balance, the positive factors outweigh the negative factors. Even the political differences need not be an obstacle. Indeed, those between Asia-Pacific countries may be less significant than those formerly between European countries whose leaders agreed to set aside their differences and move ahead with economic integration. Hopefully, Asia-Pacific leaders will also appreciate the compelling arguments for deeper and broader economic integration and begin to push the agenda.

Key elements of regional economic integration

Regional economic integration requires a long-term vision supported by the necessary frameworks and institutions. This would involve four key elements:

- **An integrated Asia-Pacific market:** This would involve coalescing numerous bilateral and subregional arrangements into broader regional trading and economic cooperation arrangements open to all Asia-Pacific economies. This should be based on the principles of openness, transparency and equity. It should substantially extend to all trade, and cover liberalization and facilitation of trade in goods and services and investments. It should provide for flexibilities and special and differential treatment for poorer economies and economic assistance for lagging areas and vulnerable sections of societies. This would represent regionalism with an a human face. The creation of a broader market does not, however, mean that subregional groupings lose their relevance. They should continue as building blocks of the broader regional arrangement while pursuing their own programmes of trade facilitation, stronger connectivity, and food and energy security.
- **Seamless physical connectivity:** The full potential of intraregional trade cannot be realized without improved connectivity. For example, better surface transport, and multimodal transport networks connected through dry ports, will help spread the benefits of industrialization to the hinterlands. Connectivity should extend to energy pipelines and power grids and broadband cables for knowledge networks. These connections will link lagging regions with growth poles and encourage more balanced regional development.
- **Financial cooperation:** Financial cooperation can promote mutual trade and build resilience to financial crises, while also make better use of regional

resources for investment in infrastructure that will strengthen connectivity.

- **Addressing shared vulnerabilities and risks:** Mutual cooperation will put countries in a better position to respond to shared vulnerabilities, such as energy and food security, natural disasters and environmental sustainability – as well as rising inequalities, slower poverty reduction, and threats to social cohesion. The options would include jointly developing technology, enhancing people-to-people contacts to promote better understanding and sharing development experiences and best practices.

If implemented as a part of a package, this four-pronged plan would help realize a long-term vision by building an *Economic Community of Asia and the Pacific*.

In subsequent chapters, this report summarizes the modalities and institutional architecture that would be needed to pursue the four-pronged plan across the region. Chapter six of the study offers a way forward for the consideration of the ESCAP Commission.

Endnotes

¹ See www.ggdc.net/MADDISON/oriindex.htm. Asia is defined as China; India; Indonesia; Japan; Philippines; Republic of Korea; Thailand; Taiwan Province of China; Bangladesh; Myanmar; Hong Kong, China; Malaysia; Nepal; Pakistan; Singapore; and Sri Lanka.

² See for example, Myrdal, 1968.

³ See World Bank, 1993.

⁴ Quah, 2010, of the London School of Economics, has prepared an animation that depicts the world's economic centre of gravity shifting from somewhere in the Atlantic in 1980 to somewhere between India and China by 2050.

⁵ Wilson and Purushothaman, 2003.

⁶ Wilson, Burgi and Carlson, 2011, p. 3.

⁷ Kharas and Kohli, 2011. The projections by Goldman Sachs and ADB are not comparable to the historical data compiled by Maddison. The latter are adjusted by PPP using the Geary-Khamis methodology.

⁸ See Amsden, 2001; Wade, 2003; Lall, 2005; Kumar, 2005; Kumar and Gallagher, 2006; for evidence.

⁹ See Kumar, 2003, for evidence.

¹⁰ IMF, 2012, projected growth of little over 2 per cent over the medium term for the advanced economies.

¹¹ See e.g. Bruce Einhorn, "U.S. Senate Targets India Outsourcers", 8 August 2010. Available from www.businessweek.com/globalbiz/blog/eyeonasia/archives/2010/08/us_senate_targets_india_outsourcers.html; "EU's unilateral carbon tax disturbs other nations", *Global Times*, 22 March 2012. Available from www.globaltimes.cn/NEWS/tabid/99/ID/701643/EUs-unilateral-carbon-tax-disturbs-other-nations.aspx.

¹² ESCAP, 2012.

¹³ OECD, 2012.

¹⁴ The headcount poverty rate is defined as the share of the population living with less than \$1.25 (in 2005 prices, adjusted by PPP) per day. See ESCAP, ADB and UNDP, 2012.

¹⁵ See ESCAP, ADB and UNDP, 2012.

¹⁶ ESCAP, 2012.

¹⁷ See ESCAP, ADB and UNDP, 2012.

¹⁸ ESCAP and UNISDR, 2010.

¹⁹ ESCAP estimations based on data from Japan: National Police Agency, the Cabinet Office; Thailand: Department of Disaster Prevention and Mitigation, Royal Irrigation Department; New Zealand and Pakistan: EM-DAT. Available from www.emdat.be/.

²⁰ ESCAP, 2012.

²¹ ESCAP, 2010a and 2012.

²² International Energy Agency, 2011. Available from www.iea.org/textbase/nppdf/free/2011/key_world_energy_stats.pdf.

²³ Kohli, Sharma and Sood, 2011.

²⁴ See ESCAP, 2010a, 2011b and 2012.

²⁵ ESCAP 2010b, table 1.7, p. 18.

²⁶ See ADB and ADBI, 2009.

²⁷ Dumas, 2006.

²⁸ See Shankar, 2004, for more details. Also see Frost, 2008.

²⁹ ESCAP, 2011b, chapter 3.

³⁰ See chapter two for more details.

³¹ For instance, the United States plans to double its exports and increase savings in the coming years. This objective can only be achieved if the rest of the world is able to absorb growing United States exports. A rapidly growing Asia-Pacific region would create space for other regions to grow. See United States, 2009.

³² WTO, 2011.

³³ Estimates of the exact share of trade conducted on a preferential basis depend on methodological considerations, including how to classify trades between partners to the same RTA on items with zero most favoured nation (MFN) rates, or whether to count or not intra-EU trades as preferential.

³⁴ See, e.g. Menon, 2005; Baldwin and Seghezza, 2007.

³⁵ See UNCTAD, 2006.

³⁶ See Kose, Meredith and Towe, 2004.

³⁷ See e.g. Kuma, 2003; Medvedev, 2006

³⁸ See Kose, Meredith and Towe, 2004.

³⁹ See e.g. Kumar, 2007a, for details.

⁴⁰ In 1998, Ireland's per capita income was \$21,482 compared to an average of \$21,227 for the European Union. Figure adjusted by PPP. Source: World Bank, 2000, p. 40.

⁴¹ For a detailed analysis see Kelegama and Mukherji, 2007.

⁴² APTA covered reciprocal tariff concessions between five member States, namely Bangladesh, India, Lao People's Democratic Republic, Republic of Korea and Sri Lanka. In 2000, China joined the APTA.

⁴³ Sutton, 2005.

⁴⁴ Rowley, 2004.

⁴⁵ See Kumar, 2007b and 2011, for more details.

⁴⁶ See e.g. ADB, 2008 and 2011; ADB and ADBI, 2009; Francois, Rana and Wignaraja, 2009; Kohli, Sharma and Sood, 2011; Kumar, 2004; Kumar, Kesavapany and Chaocheng, 2008; among others.

⁴⁷ Brooks, Roland-Holst and Zhai, 2005.

⁴⁸ See Kumar, 2007a, for a review of simulation studies; CEPEA, 2008 and 2009; Kawai and Wignaraja, 2007.



Photo by Hanna Rubio

UN Photo - M. Guthrie



Two

Towards a broader integrated market



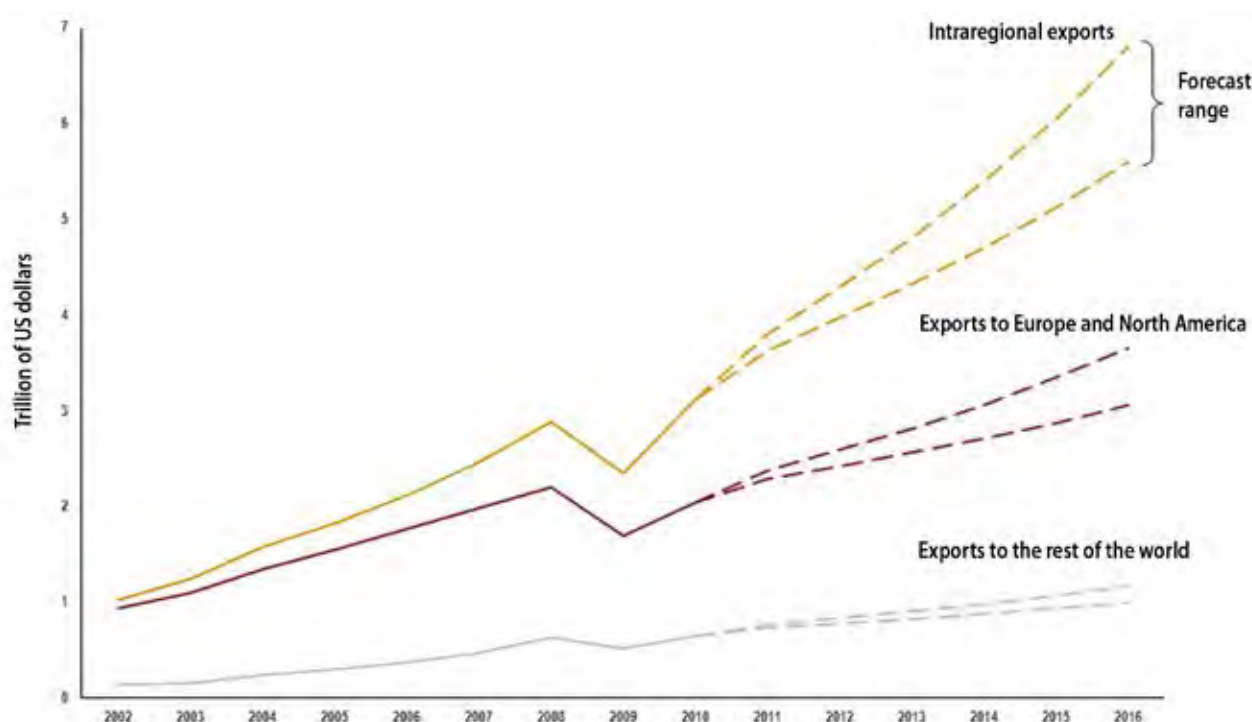
The most significant forms of economic integration in Asia and the Pacific have been through trade, investment and migration. Many of these activities have benefited from various preferential arrangements, each of which covers a limited number of countries. To take fuller advantage of the region's enormous opportunities, regional integration could be better pursued by broader arrangements that cover the whole region.

Asia and the Pacific is the world's most dynamic trading region. Between 2000 and 2010, global trade increased by an annual average of 9 per cent, but trade within the region expanded by 12 per cent.¹ This pattern continued after the global financial crisis when businesses in Asia and the Pacific became more eager to trade with each other. Faced with stagnant demand in traditional export markets, exporters looked increasingly at the growing purchasing power in China, India, Indonesia, the Russian Federation and other Asia-Pacific economies.

Trading opportunities

The extent of the trading opportunities is highlighted in figure II.1. This shows that intraregional exports have far outpaced those to Europe, North America and the rest of the world, and that they will continue to do so between 2010 and 2016, when they are expected to rise from \$3.1 trillion to between \$5.6 trillion and \$6.8 trillion. Already more than half of Asia-Pacific trade is intraregional, with the proportion increasing between 2000 and 2010 from 48 to 54 per cent (table II.1). If current trends continue, Asia and the Pacific would become the world's largest regional market by 2012.

FIGURE TITLE

II.1. Destination of Asia-Pacific exports, 2002-2016

Source: ESCAP based on data from International Monetary Fund, Direction of Trade Statistics.

Note: Forecasts for the period 2011-2016 based on gravity equation estimates of regional trade flows. See annex for details.

TABLE TITLE

II.1. Distribution of merchandise exports, by region, 2000 and 2010

Percentage of exports from \ To	Asia-Pacific	Europe	North America	Latin America and Caribbean	Middle East and North Africa	Sub-Saharan Africa
2000						
Asia-Pacific	48.1	21.1	25.0	2.5	2.4	1.0
Europe	11.5	70.2	11.2	2.4	3.5	1.3
North America	23.5	20.0	35.3	18.3	2.3	0.6
Latin America and Caribbean	8.1	13.9	59.1	17.5	1.1	0.4
Middle East and North Africa	44.1	29.7	16.4	1.9	5.7	2.2
Sub-Saharan Africa	23.0	37.9	24.8	2.8	2.0	9.5
2010						
Asia-Pacific	53.7	19.7	15.4	4.5	4.7	2.0
Europe	15.2	69.0	7.6	2.5	4.1	1.6
North America	29.4	15.3	31.3	18.8	4.0	1.3
Latin America & Caribbean	20.5	13.7	43.0	19.8	2.1	0.9
Middle East and North Africa	55.9	18.8	11.8	1.4	9.7	2.4
Sub-Saharan Africa	35.8	24.3	22.0	3.8	1.9	12.2

Source: ESCAP based on data from International Monetary Fund, Direction of Trade Statistics.

Note: The Asia-Pacific region is defined as comprising the five ESCAP subregions: East and North-East Asia, South-East Asia, the Pacific, South and South-West Asia (which includes Turkey and the Islamic Republic of Iran) and North and Central Asia (which includes the Russian Federation, Armenia, Azerbaijan and Georgia).

Within Asia and the Pacific, trade is concentrated in two subregions: East and North-East Asia and South-East Asia, though their share has been slipping. Between 2000

and 2010, the share of the region's exports going to these two subregions fell from 89.3 to 81.8 per cent. Over the same period, the share of South and South-West Asia rose from 4.6 to

II.2. Distribution of Asia-Pacific merchandise exports, by subregion, 2000 and 2010

To Percentage of exports from	East and North-East Asia	South-East Asia	South and South-West Asia	North and Central Asia	Pacific
2000					
Asia and the Pacific	65.8	23.4	4.6	1.5	4.7
East and North-East Asia	70.9	21.5	3.2	0.5	4.0
South-East Asia	57.5	33.4	4.0	0.2	4.9
South and South-West Asia	56.3	18.2	17.2	5.8	2.6
North and Central Asia	46.3	3.9	21.7	28.0	0.1
Pacific	63.1	16.0	4.7	0.4	15.8
2010					
Asia and the Pacific	60.8	21.1	9.2	4.0	5.0
East and North-East Asia	64.4	19.6	7.2	4.3	4.4
South-East Asia	53.7	31.7	7.1	0.9	6.7
South and South-West Asia	49.0	14.3	27.4	7.4	1.9
North and Central Asia	50.4	8.2	24.9	16.0	0.6
Pacific	70.9	11.1	7.4	0.5	10.0

Source: ESCAP based on data from International Monetary Fund, Direction of Trade Statistics.

9.2 per cent and that of North and Central Asia from 1.5 to 4.0 per cent (table II.2).

Table II.2 also shows that East and North-East Asia is the main export market for all the Asia-Pacific subregions (including East and North-East Asia itself). In addition, South and South-West Asia is now the second largest subregional export market for North and Central Asia. It is also noticeable that intra-subregional trade decreased for all the subregions between 2000 and 2010, with the exception of South and South-West Asia, as export opportunities across the subregions became more important. In other words, export opportunities between the subregions are becoming more important over time.

The merchandise trade data from the region also show significant changes at the level of individual countries, with China notably surpassing Japan as the region's largest exporter and importer. Between 2000 and 2010, exports from China grew at an annual average rate of 17 per cent to reach \$1.83 trillion, or 32 per cent of the region's exports. Over the same period, the country's imports grew even more spectacularly, by 19 per cent annually, to reach \$1.27 trillion, or 24 per cent of the region's imports. India was another

economy in the region that experienced rapid trade growth; its exports grew on average by 18 per cent annually during that time period to reach \$242 billion, or 4 per cent of the region's exports, while its imports expanded by 25 per cent to \$349 billion, accounting for 7 per cent of the region's total in 2010. This made India the region's fifth-largest importer after China; Japan; Hong Kong, China; and the Republic of Korea.

An export opportunities indicator

Growing markets provide opportunities for both current and new exporters across the world. In order to assess the prospects and desirability of further trade liberalization within the Asia-Pacific region, a new "export opportunities indicator" developed by ESCAP identifies which markets are the most promising for each country in the world. This is based on the assumption that it is easier for exporters to enter and expand sales in a market that is growing than in one which is stagnant or declining. The value of the indicator for each destination country represents the potential annual increase, measured in billions of dollars, in imports from industries in which the source country is internationally competitive. This does not mean, of course, that the exporting

FIGURE TITLE

II.2. The ten most promising export markets for Asia-Pacific countries

Market \ Exporter	China	India	Republic of Korea	Germany	United States	United Arab Emirates	Russian Federation	Turkey	Spain	Italy	Poland	Great Britain	Netherlands	Japan	Saudi Arabia	Hong Kong, China	Belgium	Czech Republic	France	Mexico	Thailand	Fiji	Singapore	Sweden	Viet Nam	Australia	Greece	Malaysia	Norway	Romania	South Africa
East and North-East Asia																															
China	▲	▲	▲	★	▲	▲	▲	▲	▲	■						★		■													
Democratic People's Republic of Korea	★	▲	▲	▲	▲	▲	■	▲				▲	▲	▲	▲																
Hong Kong, China	★	▲		▲	■	▲	▲	▲			■	▲	▲	▲	▲																
Japan	★	▲	▲	▲		▲	★	■		▲						★		▲													
Macao, China	▲	■	○	○		○	○	○	○	○						○															
Mongolia	★	■	○	○		■	○	○						■			○				○										
Republic of Korea	★	▲	▲	★	▲	★	★			▲						★		■		■											
South-East Asia																															
Brunei-Darussalam	★	★	▲	■	★			■	■	■	■	■	■	★				■													
Cambodia	■	■			○	■	○	○	○	○							○									○					
Indonesia	★	▲	▲		▲		▲	■			■	▲	▲	▲				○								○					
Lao People's Democratic Republic	★	○	○		○		○	○	○	○				○																	
Malaysia	▲	■	▲	★	○		○			○	■	○		■	★						■										
Myanmar	▲		○	○	○	○	○	■		○		○				○	○	○	○												
Philippines	★	■	■	■		■	■	■						○	★			○	○	■											
Singapore	★	▲	★	★	▲						▲	★	▲	★	★	★															
Thailand	★	▲	■	▲	▲	▲				■					★	★		■	■		■										
Timor-Leste	○	○	○	○	○	○		○			○	○	○					○													
Viet Nam	★	★	▲	▲	★			▲	▲	■	■	▲																			
South and South-West Asia																															
Afghanistan	★	○		○	○	■	▲			○	■	▲	▲																		
Bangladesh	○	○	○		○	○	○	○	○	○																					
Bhutan	■	○	○	○	○	○	○	○	○	○															○						
India	★		■	▲	★	★	▲	■	■	■						★															
Iran (Islamic Republic of)	★	★	★	▲	★				■	▲	▲	★	■																		
Maldives	■	○	■	○	○		○	○	○	○	○		○																		
Nepal	▲	○	○	○	■	○	○	○	○	○																					
Pakistan	★	■	○	○	▲	○	○	○	○	○							○														
Sri Lanka	■	○	○	○	○	○	○	○	○	○																					
Turkey	★	■	▲	■	▲	▲	★		■	▲																					
North and Central Asia																															
Armenia	★	▲	○	○	▲		■				■	▲	■																		
Azerbaijan	★	★	▲	★	★				■		■	■	▲	■				■													
Georgia	★	★	▲	▲	★	■			■		■	▲	★	★							■										
Kazakhstan	★	★	★	▲	★			▲	▲	▲	▲	▲	★					▲													
Kyrgyzstan	▲	■	○	○	■	○	○	○	○	○							○														
Russian Federation	★	★	★	▲	★		▲	▲	▲	▲	▲	★																			
Tajikistan	■	○	○	○	○	○	○	○	○	○		○				○															
Turkmenistan	■		○		○	○	○	■	○	■	■	■	■	■	■		○		○												
Uzbekistan	★	■		○	▲	■	■	■	■	■	■	■	▲																		
Pacific																															
Australia	★	▲	▲	■	■	■	■	○					▲									○									
Fiji	■	■			■	■	○		○	■	■	▲	■				○								○						
French Polynesia	○				○	○	○		○	■	■	■	■	○										○							
Kiribati	■	○	○	○	○	○				○	○						○														
Nauru	○	○	○	○	○	○	○	○	○									○								○					
New Caledonia	○	○	○	○	○		○		○					○										○	○					○	
New Zealand	★	▲	○	■	■	○	■			○	○	○													○						
Palau	○						○	○		○	■	■	■	■									○	○							○
Papua New Guinea	★	★	▲	▲	★			■	■	■	■	▲					■			■											
Samoa	▲	○	○	○	○	○	○	○		○																					
Solomon Islands	○	○	○	○			○	○				○					○							○							
Tonga	■	○		○		○	■		○	■	■	■	■	■										○							
Tuvalu	★	○	○	○	○	○			○							■				○											
Vanuatu	○	○	○	○		○		○	○					○										○		○					

Source: ESCAP based on data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Note: The export opportunities indicator represents the potential annual increase, in billions of US dollars, in the size of the export markets of each country vis-a-vis each of its trading partners. See Annex for details.

○ \$0 to \$1.99 billion ■ \$2 billion to \$2.99 billion ▲ \$3 billion to \$4.99 billion ★ \$5 billion or more

country will necessarily be in a position to take advantage of *all* this market growth because other countries that export similar products will also try to take advantage of these emerging opportunities. Details on the methodology for the computation of the indicator are included in the annex.

The results of this analysis are summarized in figure II.2, which shows the ten most promising export markets in the world for each country in Asia and the Pacific. The results show that China is among the top 10 export markets in the world for all the countries in Asia and the Pacific. Other top 10 export markets for countries in the region are India (for 44 countries), Republic of Korea (for 39 countries), Russian Federation (for 32 countries) and Turkey (for 28 countries). Exports to China also provide the indicators with the largest values: export opportunities in China for Japan, for example, are growing by \$35 billion a year, followed by those for the Republic of Korea at \$29 billion. Nevertheless, China also offers important export opportunities to lower-income or less developed countries, including the Democratic People's Republic of Korea, \$16 billion, Papua New Guinea, \$11 billion, Mongolia, \$8 billion, Myanmar, \$3.7 billion, Lao People's Democratic Republic, \$3.4 billion, and Nepal, \$2.4 billion. The

second most promising market for the Asia-Pacific exporters is India, which offers large opportunities for products from Georgia and the Russian Federation, both \$8 billion, and Kazakhstan and Papua New Guinea, both \$7 billion. For most countries the greatest opportunities lie outside their own subregions.

This is confirmed by table II.3, which shows the export opportunities indicator for the average country in each of the five Asia-Pacific subregions. The conclusion from this table is that, with the exception of East and North-East Asia, the average country stands to gain substantially more by exporting to other subregions than to other countries in its own subregion. This observation contrasts with the approach to regional economic integration adopted so far in Asia and the Pacific, which remains essentially subregional and fails to recognize the often greater potential of trade expansion across the subregions.

It should also be noted that, on average, the opportunities within Asia and the Pacific are greater than those in Europe and North America combined. This is illustrated, by country, in figure II.3. For the average country in Asia and the Pacific, the region itself provides 45 per cent of the total export

TABLE TITLE

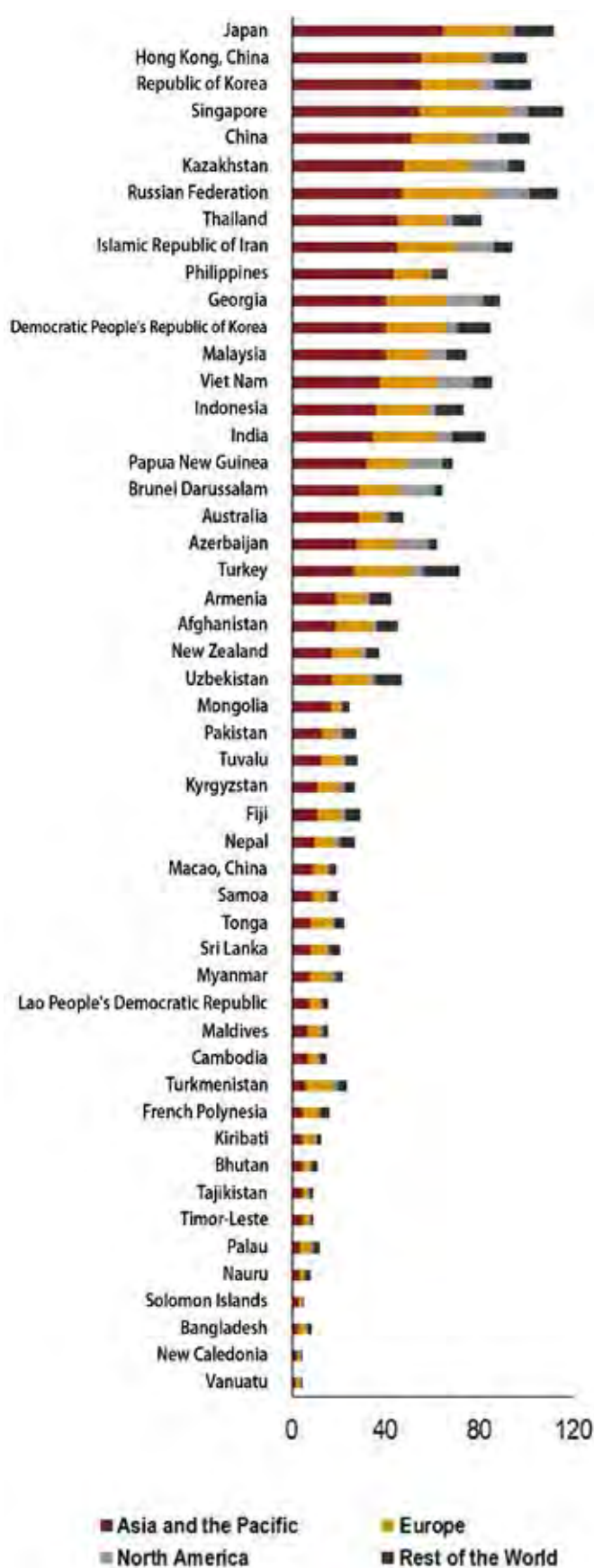
II.3. Export opportunities indicator, for the average country in Asia-Pacific subregions and selected regions of the world
(Billions of US dollars)

Indicator of opportunities to export from \ To	East and North-East Asia	South-East Asia	South and South-West Asia	North and Central Asia	Pacific	Asia and the Pacific	Europe	North America	Rest of the World
East and North-East Asia	23.3	3.7	5.3	3.6	0.8	36.8	20.8	3.9	11.8
South-East Asia	19.4	2.3	4.1	1.7	0.6	28.1	16.2	5.4	6.9
South and South-West Asia	9.1	2.1	2.8	1.9	0.5	16.5	12.9	3.6	7.0
North and Central Asia	13.5	3.1	6.1	1.0	0.7	24.4	18.1	7.9	6.8
Pacific	5.2	1.4	2.5	0.7	0.3	10.1	7.3	1.8	3.5
Asia and the Pacific	13.0	2.4	3.9	1.6	0.6	21.4	14.1	4.3	6.7
Europe	13.8	3.8	5.6	4.5	1.0	28.6	29.7	6.1	13.7
North America	32.1	6.6	11.1	4.3	1.5	55.6	40.3	10.9	16.5
Rest of the World	9.5	2.2	3.9	1.3	0.6	17.5	12.1	4.9	5.6

Source: ESCAP based on data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Note: Each row represents the export opportunities indicator of the average country in each region or subregion vis-à-vis the aggregate of countries in the importing region or subregion.

FIGURE TITLE

II.3. Export opportunities, by country**(Billions of US dollars)**

Source: ESCAP based on data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

opportunities, compared to 39 per cent for the United States of America and Europe combined. In addition, 32 of the 51 economies shown in the figure have larger opportunities within the region than in the United States and Europe combined. While this does not imply that countries should ignore traditional export markets outside the region, it suggests that there is much that could be gained by reducing obstacles to intraregional trade.

As might be expected, the best prospects are available to the largest exporting countries, as they tend to have a revealed comparative advantage in a larger range of products. However, the countries with the largest export opportunities in relation to their current levels of exports are all smaller exporters. For example, while the ratio of export opportunities in Asia and the Pacific to total exports is 0.028 for China and 0.081 for Japan, it exceeds 10 for many economies including Armenia, Bhutan, Fiji, Samoa and Timor-Leste, among others. Examples of export opportunities within Asia and the Pacific for specific economies in the region include the following:

- Pacific island developing economies, such as Kiribati, Solomon Islands, Tuvalu and Vanuatu can benefit from the \$257 million annual growth of the regional market for "frozen fish, excluding fillets", \$159 million of which are additional annual imports by China, \$50 by the Russian Federation and \$27 by Thailand.²
- Bangladesh and Cambodia are traditional exporters of garments, as are emerging exporters, such as Myanmar and Nepal. The indicators show that the market for "other outer garments of textile fabrics, not knitted, or crocheted" has been growing in the region at an average value of \$167 million per year – by \$58 million per year in the Russian Federation and by \$51 million in the Republic of Korea. Also of interest to Cambodia is the data on footwear market, which has been expanding across the region, by \$392 million per year, most rapidly in the Russian Federation, \$200 million, China, \$58 million, the Republic of Korea, \$51 million and Turkey, \$38 million.

- The Lao People's Democratic Republic should be able to benefit from the expansion in the demand for copper for which the market is growing by \$1.8 billion per year, mostly in China. Similarly, the market for "copper and copper alloys, worked" is growing across the region, by about \$534 million per year. The main expanding markets are: China at \$273 million, Thailand at \$57 million and Turkey at \$45 million.

Barriers to trade

Even though intraregional trade has been increasing, it continues to face a number of barriers. Traditionally, countries relied on tariffs to protect domestic producers against foreign competition, but increasingly the instruments of choice are various non-tariff and behind-the-border barriers.

Tariffs

There is no doubt that six decades of multilateral trade negotiations have led to a significant reduction of so-called most favoured nation (MFN) tariffs, to more clarity about types of tariffs, for example ad valorem versus specific tariffs, and to a higher predictability on levels of duties to be charged. Historically, applied import tariffs in most of the Asia-Pacific economies have never been very high, on average, as many of these economies needed to import raw materials and intermediate products to sustain their export dynamism. In 2009, the average applied MFN rate in the region was 8 per cent, with only Maldives having an average MFN applied rate of about 20 per cent and most other economies having average rates of less than 10 per cent.

While the average level of applied MFN tariff rates have been reduced significantly, many countries in the region still have higher average bound rates. The unweighted average of bound tariffs for the selected Asia-Pacific economies is 28 per cent, but the variation of average bound tariffs around this mean is very large, ranging from less than 5 per cent to more than 100 per cent. Furthermore, many countries still do not bind 100 per cent of their tariffs. On average, the extent of imports

covered by bound tariffs or binding coverage in Asia and the Pacific is 88 per cent, but the coverage could be as low as 15 per cent. The lower the binding coverage, the more flexibility a country has in introducing higher levels of applied import tariffs on products that do not have tariff bindings. While this increases "policy space" of individual countries, it also makes the trading environment less stable and more unpredictable.

Notably, average tariffs are based on so-called dutiable imports excluding all zero-rate MFN tariffs. However, the share of zero-rate MFN bound or applied tariffs is significant, more so in high-income than in low-income countries in a region. For most countries, non-agriculture tariffs lines have a larger proportion of bound zero duty than agriculture lines. As many as thirteen economies in the region apply zero duty to more than 50 per cent of their non-agriculture tariff lines, including Singapore, Hong Kong, China and Macao, China where the duty-free share is 100 per cent. For agriculture products, 10 countries apply zero duty to more than 50 per cent of their agriculture tariff lines. As in the case of positive tariff rates, countries tend to apply more zero tariffs than what they are willing to bind at zero-rates, meaning that they wish to preserve the flexibility to invoke duty on most of the tariff lines for which they currently impose no duties.

Non-tariff measures

There is much less data on non-tariff measures (NTMs), which prevents comparisons across countries or over time. The WTO provides regularly updated information on technical barriers to trade (TBT) through a publicly accessible database (TBT_IMS). In addition to TBT there are many other NTMs, which should be properly monitored. However, while there have been many attempts to organize comprehensive inventories of NTMs, none of these initiatives have yet to produce databases equivalent to tariff schedules. Technical barriers to trade are, in principle, non-discriminatory and apply to all trading partners. The other barriers to trade arise from time-consuming customs procedures, conformity assessments, non-transparency, arbitrariness, poor facilitation of trade at

the borders, poor physical connectivity and freight and associated costs, among others.³

Accounting for the costs of merchandise trade

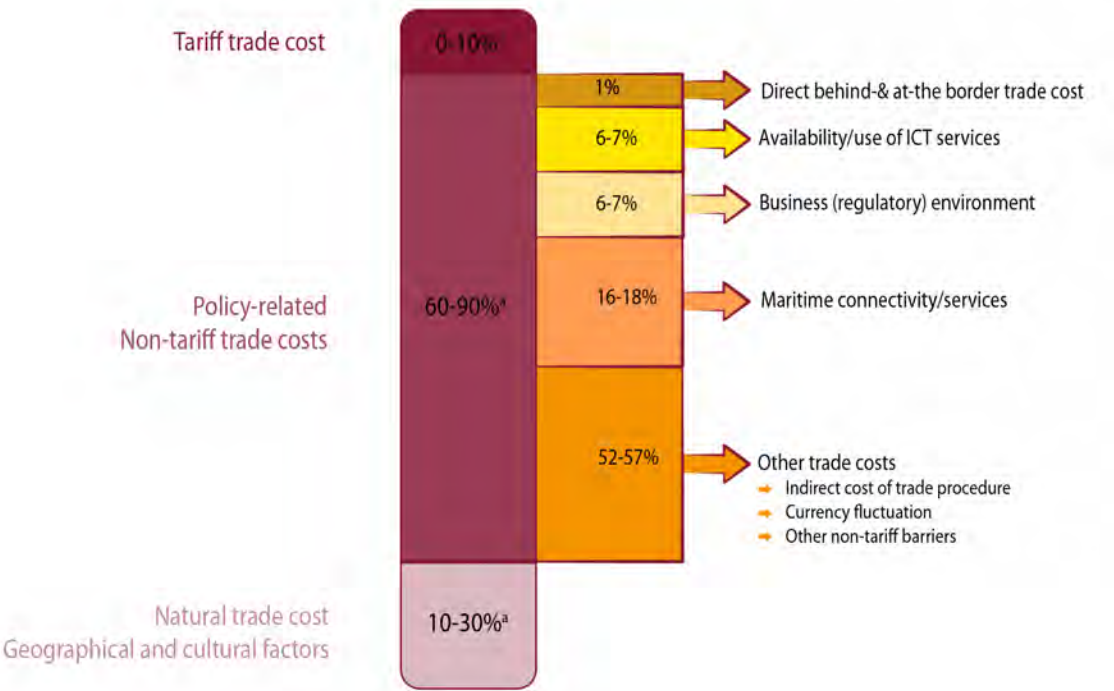
According to the ESCAP Trade Cost Database, nowadays tariffs typically account for no more than 10 per cent of overall trade costs.⁴ But while tariffs have been falling, both as nominal and effective rates, the costs of non-tariff and behind-the-border measures remain very high. For example, intraregional trade is inhibited by documentary and other import and export procedures which account for up to 15 per cent of the value of traded goods.⁵ These form part of what are measured as comprehensive trade costs.⁶

Between 2005 and 2011, the time taken to complete all trade procedures involved in moving goods from factory to ship at the nearest seaport – or vice versa – in the Asia-

Pacific developing economies decreased on average by more than 18 per cent. The greatest progress has been in South-East Asia. On the other hand, procedures in South and South-West Asia still take 50 per cent more time to complete than in South-East Asia. No significant progress was made in the Pacific. Overall, it still takes three times longer to complete trade procedures in the Asia-Pacific developing economies than in Australia, Japan and New Zealand, indicating considerable room for improvement.

Some of the costs are inherent to the location, culture or history of the trading partners and may be difficult to address through policy, at least within a reasonable time frame. These costs are sometimes called “natural” trade costs. However, other costs – such as tariff rates, the availability of logistics infrastructure and services, a favourable exchange rate, a conducive business environment and transparent and streamlined border procedures – are open to policy change.

FIGURE TITLE
II.4. Policy-related factors in trade costs



Source: Duval and Uthoktham (2011).

^a Illustrative based on casual observation of the data only. Natural trade costs for landlocked countries may be outside the range shown for natural trade costs.

Research undertaken by ESCAP suggests that tariff trade costs in Asia and the Pacific generally account for up to 10 per cent of bilateral comprehensive trade costs, while other policy-related trade costs, such those of a non-tariff nature, account for 60 to 90 per cent. Natural trade costs vary widely depending on the partner countries, but account on average for more than 20 per cent of trade costs. As indicated in figure II.4, progress to bring down trade costs will be particularly important in maritime services and in information and communications technology (ICT).

It should be noted, too, that the full costs lay not so much in the direct costs of completing the procedures, but in a potential reluctance to engage in trade if the likely overall costs are uncertain.

All subregions in Asia and the Pacific have made progress in reducing non-tariff trade costs between 2001-2003 and 2007-2009, with trade costs between East Asia and North and Central Asia experiencing the largest reduction (table II.4). Because its geographic proximity and similarities in languages and culture, the costs of trade are expected to be lower between countries in the same subregion. However, the costs of trade between subregions are quite high,

even when they are also relatively close geographically. Moreover, the costs of trade between the Asia-Pacific subregions tend to be substantially higher than those between them and the traditional markets of the West. Those between the ASEAN and SAARC, for example, are on average nearly double the costs of trade between ASEAN and the United States of America. Similarly, the costs of trade between North and Central Asia and South Asia are about twice those between North and Central Asia and the European Union.⁷ Factors that explain these significantly higher costs are explored below and in chapter three of this study.

Apart from Singapore and Hong Kong, China, the top-ranked economies in the ESCAP Trade Cost Database – the ones with the lowest costs – are Malaysia, the United States, China, the Republic of Korea and Thailand, with Japan and Germany following closely.⁸ However, the trade cost performance of a given country varies significantly depending on trading partners, as well as on the type of goods. Compared with manufactured goods, the barriers are greater for agricultural products which are typically governed by extensive regulations for food safety or food security.⁹ Nevertheless, the costs vary considerably from country to country suggesting significant scope for reduction (figure II.5).

TABLE TITLE

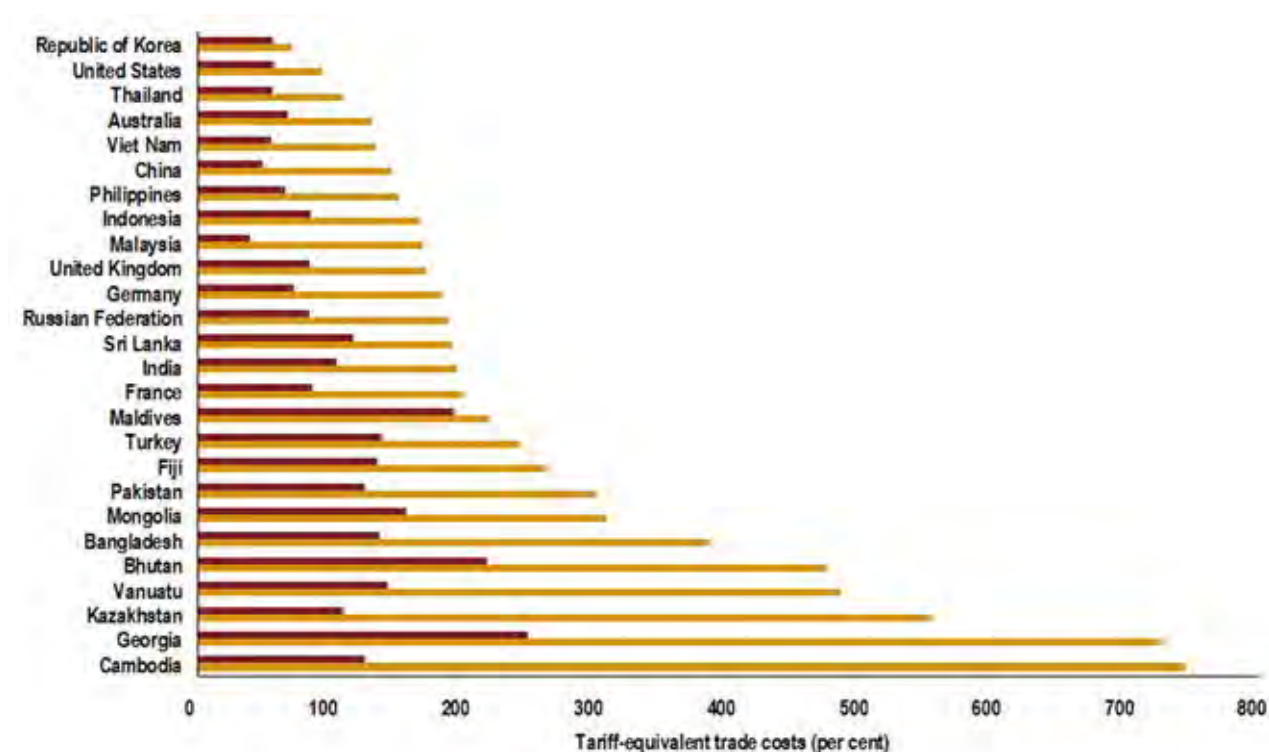
II.4. Non-tariff intraregional and extraregional trade costs in Asia and the Pacific, 2007-2009

Region	ASEAN-4	East Asia-3	North and Central Asia-6	SAARC-4	Australia-New Zealand	EU-3
ASEAN-4	79 (-10)					
East Asia-3	73 (-6)	47 (-21)				
North and Central Asia-6	291 (-14)	187 (-33)	149 (-21)			
SAARC-4	134 (-0)	119 (-3)	270 (-22)	113 (-1)		
Australia-New Zealand	90 (-12)	78 (-16)	270 (-22)	130 (-3)	45 (-24)	
EU-3	97 (-5)	70 (-19)	149 (-26)	101 (-3)	89 (-17)	32 (-33)
United States	77 (-0)	53 (-14)	165 (-17)	99 (-1)	82 (-11)	51 (-18)

Source: ESCAP Trade Cost database (version 2).

Notes: Trade costs may be interpreted as tariff equivalents. Percentage changes in trade costs between 2001/2003 and 2007/2009 are in parentheses. ASEAN-4: Indonesia, Malaysia, the Philippines and Thailand; East-Asia-3: China, Japan and Republic of Korea; North and Central Asia-6: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan and Russian Federation; SAARC-4: Bangladesh, India, Pakistan and Sri Lanka; EU-3: France, Germany and the United Kingdom.

FIGURE TITLE

II.5. Agricultural and manufacturing non-tariff comprehensive trade costs between selected economies and Japan

Source: ESCAP Trade Cost database (version 2).

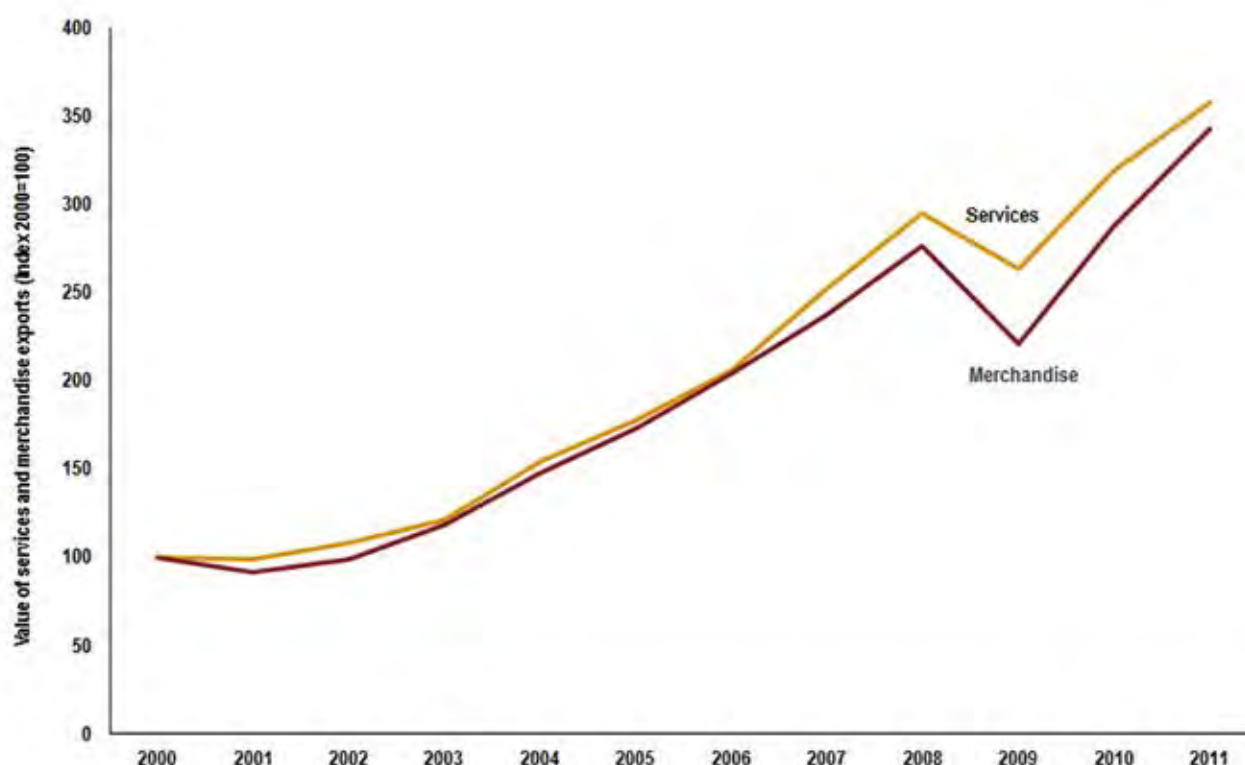
Expanding trade in commercial services

Exports of commercial services are becoming increasingly important for Asia and the Pacific. Between 2000 and 2010, the region increased its contribution to world services exports from 22 to 29 per cent. Although the latter figure is smaller than the region's contribution to world merchandise exports, 38 per cent in 2010, the value of services exports has been growing faster than that of merchandise exports, especially in the last few years (figure II.6). In 2011, the top exporters of services from the region were China (\$182 billion), India (\$148 billion), Japan (\$142 billion), Singapore (\$125 billion), Hong Kong, China (\$120 billion) and the Republic of Korea (\$83 billion).¹⁰ The combined service exports of these six economies represented 63 per cent of the region's total during that year. The region's imports of commercial services have been growing somewhat slower than exports since 2000. Consequently, the region's trade deficit in commercial services, measured as a percentage of its exports, has dropped from 15.4 per cent in 2000 to 2.8 per cent in 2011.

This decline suggests that the Asia-Pacific region is enhancing its capabilities to produce and export commercial services.

In the period 2000-2010, the share of travel services exports in global services exports dropped from one third to one quarter of global exports, the share of transportation services fell by 1.9 percentage points, and the share of "other commercial services" increased eight percentage points, from about 45 per cent in 2000 to just over 53 per cent in 2010. During the same period, Asia and the Pacific increased its share of in global exports in these three categories of services (table II.7). The region's largest percentage point increase was recorded in exports of travel services, which reached \$260 billion in 2010. The region's share of transportation services exports increased by 4.2 percentage points to \$245 billion in 2010, while the largest increase in terms of value of exports was recorded in "other commercial services", which reached \$520 billion in 2010.

Data on bilateral trade in services among Asia-Pacific economies are very limited. Only six economies, namely Australia, Japan, Republic

II.6. Exports of commercial services and merchandise, Asia-Pacific, 2000-2010

Source: ESCAP based on WTO and UNCTAD WTO International Trade Statistics database (accessed 12 April 2012).

of Korea, the Russian Federation, Singapore and Hong Kong, China, report exports and imports of commercial services with a selected number of trading partners. Table II.5 shows that in 2008, these six economies export, on average, 34.8 per cent of their commercial services to trading partners within the region. That year, Australia; Hong Kong, China; and the Republic of Korea sent more than 40 per cent of their commercial services exports to other countries in the region. On the other end, the Russian Federation sent only 5 per cent of its commercial services exports to the region.¹¹ Data on imports are qualitatively similar to those on exports, although the average value of imports of the six reporting economies originated in the region is lower, at 28.7 per cent.

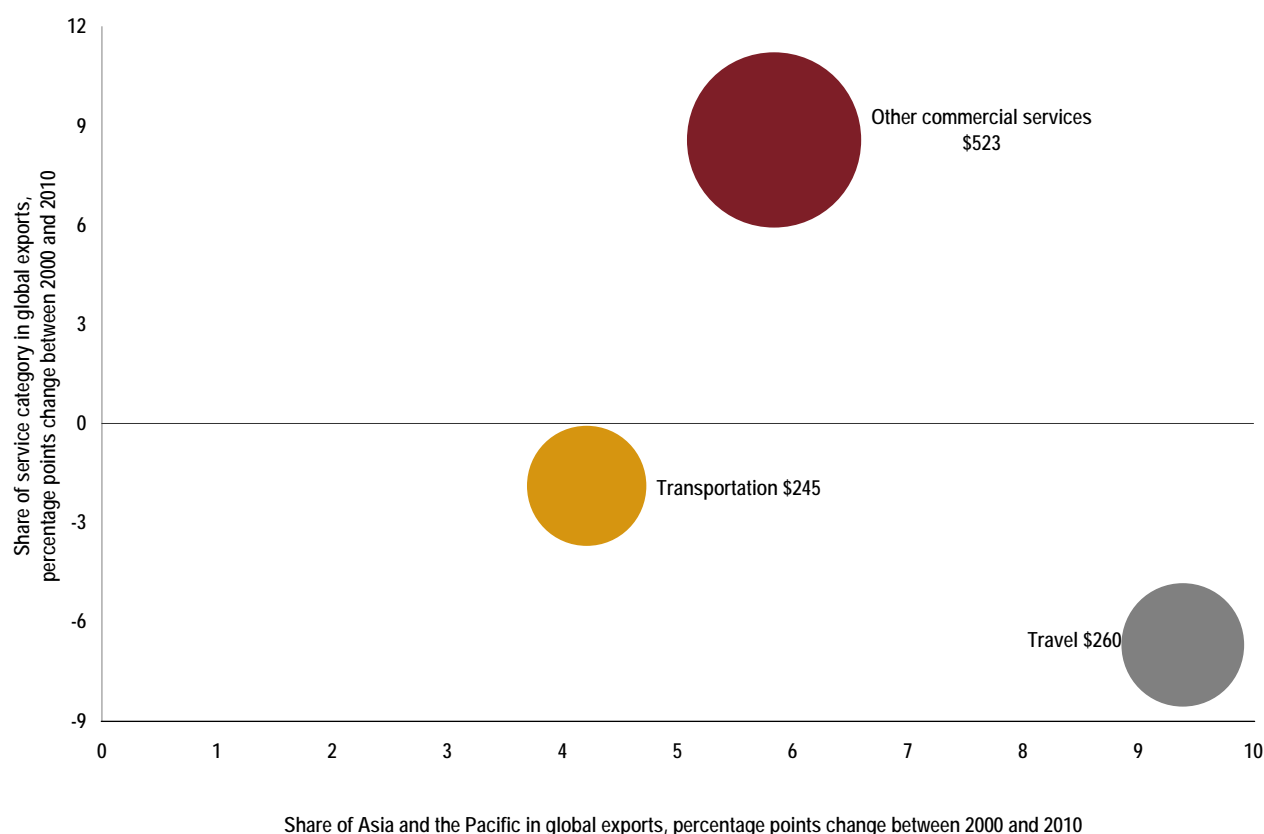
Tourism services

As mentioned above, travel is the type of commercial service that expanded the fastest in Asia and the Pacific over the last decade. It is a major industry with the potential to generate millions of jobs and support economic growth.

According to the United Nations World Tourism Organization (UNWTO), Asia and the Pacific, currently ranked second among the world's regions in terms of international tourist receipts, recorded a record number of tourist arrivals in 2011 of 216 million or a 6 per cent increase from the year before.¹² The dynamism of the travel industry in the region is partly the result of the increasing purchasing power of its emerging middle class, which can increasingly afford the expense of travelling to other countries for tourism.

Table II.6 shows selected subregions and countries of origin for the 10 largest tourism markets in Asia and the Pacific.¹³ Overall, almost two thirds of the tourism arrivals to these countries originate from within the region, and more than 50 per cent originate from South-East Asia and East and North-East Asia. Moreover, in seven of the ten countries, arrivals originating in the region represent 70 per cent or more of the total arrivals. It is expected that as the region continues to prosper, intraregional tourism will increase at

FIGURE TITLE

II.7. Changes in the share of commercial services exports, Asia and the Pacific and the world, 2000-2010

Source: ESCAP based on ESCAP and WTO, WTO International Trade Statistics database (accessed 23 March 2012).

TABLE TITLE

II.5. Intraregional trade in commercial services, selected exporters and importers, 2008

(Percentage of total exports)

Reporter Partner	Australia	Hong Kong, China	Japan	Republic of Korea	Russian Federation	Singapore	Average
Australia		2.7	1.5	0.8	0.1	4.2	1.9
Hong Kong, China	3.0		-0.7	4.7	0.3	4.1	1.7
Japan	4.5	6.4		10.5	1.0	6.8	4.7
Republic of Korea	3.4	2.7	3.3		1.2	3.2	2.4
Russian Federation	0.2	0.6	0.4	1.6		..	0.5
Singapore	7.3	2.8	9.4	4.2	0.2		4.5
China	8.8	24.4	6.1	14.6	1.7	5.2	10.4
India	5.5	1.0	1.1	1.3	0.3	2.9	1.8
Indonesia	1.9	0.6	1.4	1.1	0.0	3.1	1.4
Malaysia	2.8	1.3	0.0	1.0	0.0	3.2	1.2
New Zealand	6.4	0.3	0.3	0.1	0.0	0.7	0.8
Philippines	0.6	0.8	0.9	1.3	0.0	0.9	0.8
Thailand	1.8	0.9	3.4	1.5	0.1	2.1	1.9
Viet Nam	1.1	0.2	..	1.9	0.4	0.9	0.7
Total	47.4	44.7	27.1	44.7	5.5	37.3	34.8

Source: ESCAP based on United Nations Services Trade Statistics (accessed November 2011).

a greater pace, and thus could make a large contribution to supporting growth across the region.

Education services

Exports of education services, especially at the tertiary level, have increasingly become an important source of foreign exchange earnings for many Asia-Pacific economies. According to data from the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics, the three largest education services exporters of the region are Australia, Japan, and the Russian Federation. As it is clear from figure II.8, the large majority of international students in the Asia-Pacific economies come from other Asia-Pacific economies.

However, statistics on the number of international students only partially capture trade in education services. Education services provided to international students are classified, according to the General

Agreement on Trade in Services (GATS), as Mode 2 of supply or consumption of a service abroad. Although this mode currently represents the largest share of the global market of education services, there are other forms of supply that are gaining relevance especially in the developing countries of Asia and the Pacific. For example, improvements in access to modern ICT have opened large potential for cross-border supply (Mode 1) through distance education, e-learning and the operation of virtual universities. In addition, foreign investment, franchising, and partnerships between foreign and local institutions have been bringing a rapid expansion in Mode 3, a commercial presence of institutional education providers in a foreign country. An increase in the presence of foreign providers of education services through Mode 3 is often perceived as an effective way to attract foreign students, as well as to reduce the outflow of foreign exchange by keeping domestic students in the country.

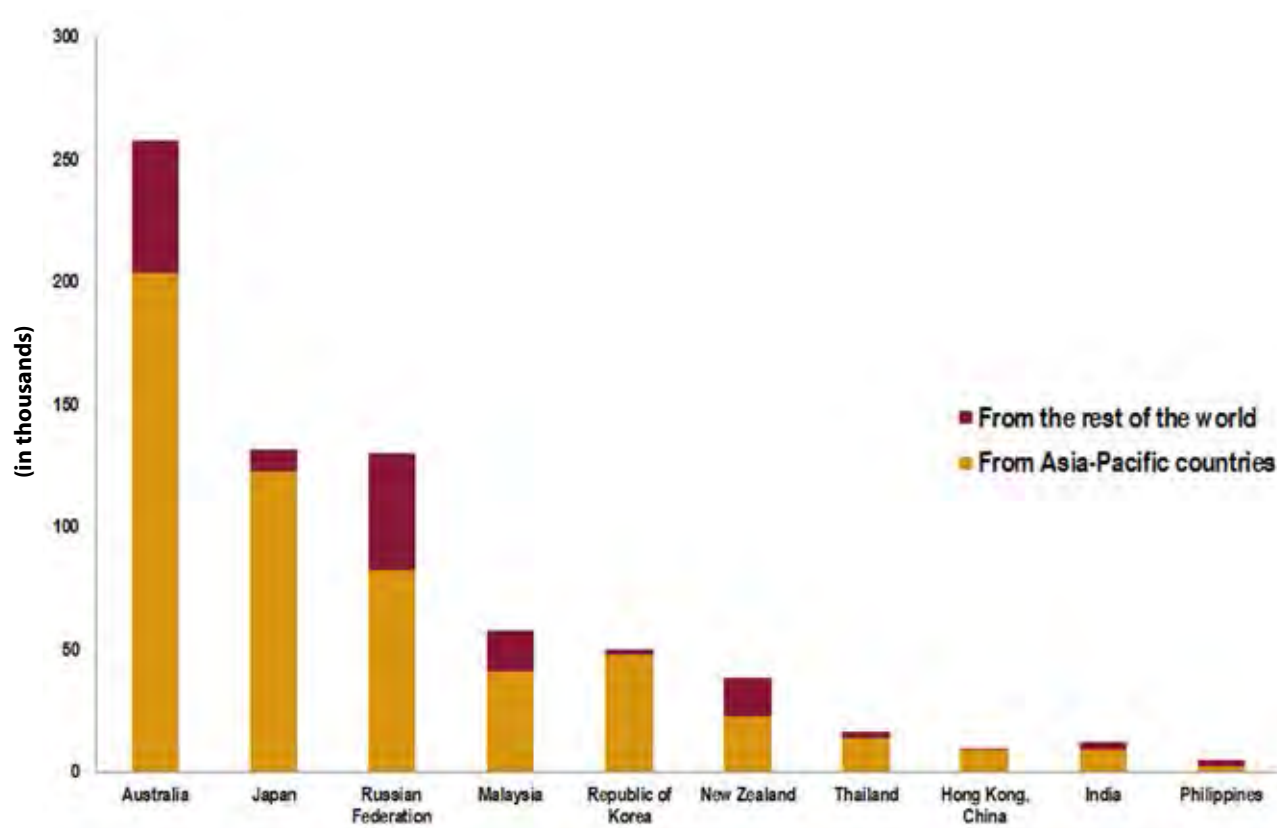
TABLE TITLE
II.6. Tourism arrivals, selected Asia-Pacific countries, 2010
(In thousands)

Country of destination	Subregion or country of origin						Total
	East and North-East Asia	South-East Asia	Australia and New Zealand	Russian Federation	South and South-West Asia	Subtotal	
China	13 859 (44.3)	5 746 (18.4)	777 (2.5)	2 370 (7.6)	871 (2.8)	23 624 (75.6)	31 267 (100)
Turkey	427 (1.5)	120 (0.4)	156 (0.5)	3 107 (10.9)	1 987 (6.9)	5 797 (20.2)	28 632 (100)
Malaysia	2 021 (8.2)	18 937 (77.1)	647 (2.6)	32 (0.1)	997 (4.1)	22 635 (92.1)	24 577 (100)
Thailand	3 290 (24.6)	3 741 (27.9)	642 (4.8)	600 (4.5)	894 (6.7)	9 167 (68.4)	13 395 (100)
Singapore	2 664 (22.9)	4 822 (41.4)	976 (8.4)	.. ..	1 084 (9.3)	9 546 (82.0)	11 642 (100)
Japan	5 661 (65.7)	722 (8.4)	258 (3.0)	51 (0.6)	105 (1.2)	6 797 (78.9)	8 611 (100)
Republic of Korea	5 038 (64.4)	861 (11.0)	123 (1.6)	137 (1.8)	114 (1.5)	6 272 (80.2)	7 818 (100)
Indonesia	1 455 (20.8)	3 052 (43.6)	804 (11.5)	.. ..	158 (2.3)	5 469 (78.1)	7 003 (100)
India	412 (7.1)	439 (7.6)	207 (3.6)	122 (2.1)	1 047 (18.1)	2 227 (38.6)	5 776 (100)
Australia	1 163 (20.8)	790 (14.1)	1 110 (19.9)	12 (0.2)	162 (2.9)	3 238 (58.0)	5 584 (100)
Total	35 990 (24.9)	39 231 (27.2)	5 701 (4.0)	6 432 (4.5)	7 419 (5.1)	94 772 (65.7)	144 305 (100)

Source: ESCAP based on UNWTO (accessed November 2011).

Notes: Shares of total arrivals in parentheses. China's arrival exclude those from Hong Kong, China and Macao, China. Data for Australia is for 2009. Methods of data collection are not standardized across countries.

FIGURE TITLE

II.8. Number of international students in selected Asia-Pacific economies, 2009

Source: ESCAP calculations based on UNESCO, Institute for Statistics database. Available from <http://stats.uis.unesco.org>.

Note: Figures for India are for 2006 and those for the Philippines are for 2008.

Movement of people

Movement of people across borders is an important mode of trade in services. Migration flows between countries in the region could be very effective in tackling structural demand-supply imbalances between countries of the region, contributing economic growth and a reduction in region-wide disparities in the distribution of labour income. For instance, changes in technology and the mix of goods and products produced in a particular economy could lead to shortages in specific segments of the labour market and to excess supply in others. While such complex changes could, in principle, be tackled through national educational and training policies, both the implementation of such policies and the time it takes to train skilled workers make migration a more effective channel to tackle imbalances in specific segments of the labour market in the short to medium run.

In sum, labour migration can be mutually beneficial for employers and migrants, as

well as for residents of countries of origin and countries of destination, but the migration process must be well-managed. In the light of the significant amount of migration occurring within Asia and the Pacific, regional coordination of international migration policies could facilitate better skills matching to address labour market needs in countries of origin and destination. This includes creating legal channels for migration and the sending of remittances by both skilled and low-skilled labour migrants, resulting in more balanced opportunities and benefits for the region.

Migrants in Asia and the Pacific

Several countries of the region have attracted significant numbers of migrants. In 2010, the region's largest foreign-born population – more than 12 million – lived in the Russian Federation, followed by India, Australia, Pakistan and Kazakhstan. In most cases, the foreign-born population comes from neighbouring countries or other countries within the subregion. For example, Australia

and New Zealand are well connected to each other, facilitated by the reciprocal rights agreement under the Trans-Tasman Travel Arrangement, which came into effect in 1973. This informal agreement allows for free movement of labour migrants between the two countries. Additionally, several Pacific island countries have large diasporas in Australia and New Zealand. For example, in 2005, the population of Samoa stood at 180,000, with 15,240 Samoans residing in Australia and 50,649 Samoans living in New Zealand.

An increasing number of migrants travel for study, particularly at the tertiary level. The majority of Asian students studying abroad still favour Europe and North America,¹⁴ but East Asian destinations, such as Japan and Republic of Korea, and Australia are becoming popular (figure II.8); and about 90 per cent of these countries' foreign students are from Asia, especially China. In 2008, about 18 per cent of Chinese studying abroad studied in Japan and about 8 per cent in the Republic of Korea. Another popular destination for students is the Russian Federation, largely from Kazakhstan and other Central Asian countries.

A unique feature in the Asia-Pacific region is that it hosts both locations of origin and of destination of labour migrants. Some economies, such as Japan, Malaysia, the Republic of Korea, Thailand, Hong Kong, China and Taiwan Province of China have recently become destinations for labour migrants. Those from South-East Asia migrate mainly to the more affluent economies, notably Brunei Darussalam, Malaysia, Thailand, and Singapore as well as to East Asia, particularly the Republic of Korea; Hong Kong, China; Macao, China; and Taiwan Province of China. Meanwhile, labour migrants from Central Asia tend to migrate to Kazakhstan and the Russian Federation.¹⁵

Labour migration and remittances

Labour migration also provides a source of income to households of the migrants left behind in the countries of origin. Moreover, for a number of countries of origin of migration in

the region, remittances are the largest sources of foreign exchange. In 2011 of the top ten recipients of remittances worldwide, six were in the Asia-Pacific region, led by India (\$58 billion), China (\$57 billion), the Philippines (\$23 billion), Bangladesh and Pakistan (\$12 billion each) and Viet Nam (\$8 billion).¹⁶ For some countries, such as Tonga, Samoa and Nepal, remittances represent a high proportion – of 20 per cent or more – of the GDP.¹⁷ Given these benefits, it is not surprising that the governments of many countries, such as Bangladesh, India, Indonesia, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand and Viet Nam, are actively involved in the deployment of migrant workers.

In addition, the share of remittances originating in the region itself is very significant. According to estimates produced by the World Bank, it ranges between 26 and 43 per cent, depending on the methodology. According to estimates based on migrant stocks and incomes in both the sending and the destination economies, shown in table II.7, some 34 per cent of the remittances received by the region in 2010 originated in the region. The Asia-Pacific subregions with the highest shares of remittances coming from the region are North and Central Asia (57 per cent), East and North-East Asia (54 per cent) and the Pacific (39 per cent).

Traditional sources of remittances income outside the region include Canada and the United States, which provide 42 per cent of the remittances received by South-East Asia and 31 per cent of those received by East and North-East Asia; Europe, which provides 36 per cent of the remittances received by the Pacific; and the Gulf Cooperation Council countries,¹⁸ which provide 42 per cent of the remittances received by South and South-West Asia. However, as growth in Asia and the Pacific continues to outpace that of these traditional sources, it is expected that the region will be able to offer more and more opportunities for migrants. Thus, the share of remittances originating from the region is likely to increase in the future.

Irregular migration

Although it is difficult to estimate the magnitude of irregular migration flows, some data emerge when countries encourage migrants to register. The main destinations for irregular migrants are believed to be Thailand, Malaysia and India. The Ministry of Interior of Thailand estimated that in 2010, there were around 1.4 million unregistered migrants in the country, with perhaps 80 per cent of them from Myanmar and the remainder from Cambodia and the Lao People's Democratic Republic.¹⁹ In the Russian Federation, about half of its migrants are estimated to be irregular, the majority from Central Asia and other countries of the Commonwealth of Independent States (CIS). Kazakhstan is believed to have between 500,000 and 1 million irregular migrants, mostly from Kyrgyzstan, Tajikistan and Uzbekistan.²⁰

Irregular migration, which is often encouraged by restrictions on labour movements, incurs high economic and social costs for both countries of origin and destination. For instance, high recruitment costs for labour migrants reduces the positive impacts of remittances because a significant proportion of the migrants' income should be used to repay loans taken to cover the cost of recruitment, such as transport and securing a work visa. As such, the minimization of recruitment costs, processes and delays in regular migration are key to improving international migration management at the regional level.

Cooperation in labour migration

Large irregular labour migration flows between countries reflect the absence of an adequate legal framework to enable migration through regular channels.

TABLE TITLE

II.7. Bilateral remittances received by the Asia-Pacific subregions, 2010
(Millions of US dollars)

Receiving Sending	East and North-East Asia	North and Central Asia	Pacific	South-East Asia	South and South-West Asia	Asia-Pacific
East and North-East Asia	20 935 (38)	9 (0)	139 (3)	1 577 (5)	426 (1)	23 086 (12)
North and Central Asia	10 (0)	6 224 (57)	0 (0)	0 (0)	25 (0)	6 259 (3)
Pacific	3 008 (5)	20 (0)	1 669 (32)	1 734 (5)	2 332 (3)	8 763 (5)
South East-Asia	6 099 (11)	0 (0)	159 (3)	6 471 (20)	2 190 (3)	14 919 (8)
South and South-West Asia	162 (0)	45 (0)	63 (1)	21 (0)	10 148 (12)	10 439 (6)
Asia-Pacific	30 214 (54)	6 298 (57)	2 030 (39)	9 803 (31)	15 121 (18)	63 466 (34)
Canada and United States	18 551 (33)	538 (5)	1 114 (21)	13 410 (42)	19 350 (23)	52 963 (28)
EU 15	5 735 (10)	639 (6)	1 869 (36)	3 624 (11)	12 338 (15)	24 205 (13)
Gulf Cooperation Council	0 (0)	0 (0)	0 (0)	4 424 (14)	35 029 (42)	39 453 (21)
Rest of the World	1 167 (2)	3 515 (32)	250 (5)	565 (2)	1 249 (2)	6 746 (4)
World	55 667 (100)	10 990 (100)	5 263 (100)	31 826 (100)	83 087 (100)	186 833 (100)

Source: ESCAP based on data from World Bank, "Bilateral Migration and Remittances 2010. Available from <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:22803131~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html> (accessed 20 April 2012).

Notes: Numbers in parentheses are percentages of total remittances received by each subregion and by the Asia-Pacific region (last column). World Bank bilateral remittance estimates based on migrant stocks, destination country incomes, and source country incomes. For more information, see Ratha and Shaw, 2007, "South-South Migration and Remittances", Development Prospects Group, World Bank. Available from www.worldbank.org/prospects/migrationandremittances.

In order to regularize migration flows, and maximize the benefits of labour migration for source and destination countries, a number of countries have concluded bilateral agreements, usually in the form of memoranda of understanding, which are more effective for the management of labour migration flows than national actions taken unilaterally by sending or receiving countries. They vary significantly in content, and can cover recruitment, conditions of employment and measures to protect migrants. Key destination locations in Asia, such as Malaysia, the Republic of Korea, Thailand, Hong Kong, China, Macao, China and Taiwan Province of China, have concluded memoranda of understanding with selected countries of origin in South-East and South Asia.

The most extensive arrangements are between the Republic of Korea and 15 Asian countries of origin, namely Bangladesh, Cambodia, China, Indonesia, Kyrgyzstan, Mongolia, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, Timor-Leste, Uzbekistan and Viet Nam, based on the Employment Permit System (EPS). Initiated in 2004, the programme establishes quotas of foreign workers per industry and also oversees pre-departure training of the foreign workers, including language training. Under the scheme, the maximum stay is three years, after which migrants have to return and remain in their country of origin for one year before being eligible to re-apply. Moreover, the programme encourages voluntary return and encourages a network of returnees, which again would strengthen the links with the Republic of Korea.

Thailand has signed memoranda of understanding with Cambodia, Lao People's Democratic Republic and Myanmar on guidelines and procedures for employment protection and return of workers, but the majority of migrants still continue to migrate through irregular channels which are easier and cheaper. Thailand also has a memorandum of understanding with Taiwan Province of China, but in this case for its own migrant workers.

Some subregions already have visa-free regimes, though these do not always include

the right to work. In this respect, several subregions such as Central Asia or ASEAN are relatively well integrated. South Asian countries, on the other hand, are relatively poorly integrated among themselves and with the rest of Asia.

North and Central Asia – A mutual interest among the CIS countries has led to an agreement on cooperation in labour migration and on social guarantees for migrant workers (1994), the agreement between the CIS countries on cooperation in preventing irregular migration (1998) and the EurAsEc Agreement in visa-free trips (2005). There are also a number of bilateral agreements on labour migration, such as between the Russian Federation and Kyrgyzstan and Tajikistan.²¹ The Russian Federation allows visa-free entry to migrant workers, while Kazakhstan allows migrants from CIS countries 90 days to search for work.²²

ASEAN – ASEAN foresees a free flow of skilled labour by 2020 and is working to facilitate the issue of visas and employment passes for ASEAN professionals and skilled labour. As a first step, the Association has signed mutual recognition agreements for nurses, dental and medical practitioners, engineering and architectural services, surveying professionals and accountancy services. However, these agreements do not extend to low-skilled workers. In addition, there is the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers. Signed in January 2007, the Declaration acknowledges the “need to adopt appropriate and comprehensive migration policies on migrant workers” and “to address cases of abuse and violence”.

Pacific – As a result of their historic ties to Australia, New Zealand or the United States of America, traditionally it has been easier for migrants from several Polynesian and Micronesian economies to access those countries than for migrants from Melanesia.²³ Australia and New Zealand have recently started opening up to seasonal agricultural labour from several Pacific countries through the Pacific Seasonal Worker Pilot Scheme (Australia) and the Recognized Seasonal

Employer Scheme (New Zealand). Although the number of participants has not being large, these schemes have had an impact at the local level when workers return to their countries. Both seasonal workers schemes are a step towards connecting all the Pacific island economies.

Migration is inherently a multilateral concern, and desired outcomes are most likely to be achieved if countries of origin and destination discuss labour migration issues and the best way to resolve them.²⁴ Regional cooperation, guided by international principles and norms, offer the best conduit for improving migration governance in Asia and the Pacific.

Foreign direct investment

The rapid economic growth in the Asia-Pacific region has been accompanied by increasing flows of FDI. Between 1996 and 2000 and 2006 and 2010, FDI inflows to Asia and the Pacific almost tripled and the region now accounts for about one-quarter of global inflows, but FDI outflows from the region have expanded even more impressively with the emergence of China, India, Malaysia, Singapore and Hong Kong, China, joining conventional sources of FDI, such as Australia, Japan and the Republic of Korea. Over the same period, FDI outflows more than quadrupled and accounted for 21 per cent of global outflows (table II.8).

The emergence of new sources in the Asia-Pacific region is actually a reflection of the development of large dynamic enterprises

based in the Asia-Pacific economies that tend to operate globally similar to transnational corporations (TNCs) originating in advanced economies. A survey of the top 100 companies from fast growing emerging economies included 33 companies from China, 20 from India, 6 from the Russian Federation, 4 from Thailand, 2 each from Indonesia and Turkey and 1 from Malaysia.²⁵ However, it has been argued that compared with those from developed countries, TNCs from developing countries move abroad on the strength of their frugal engineering or their ability to deliver value for money. As these companies operate in an environment with similar input and output prices, they tend to be more adept than their counterparts from advanced countries in introducing more appropriate products and processes to other developing countries.²⁶ These TNCs are gaining a stronger foothold in climate-smart technologies. For example, Chinese companies, such as Suntech and Sunergy, are looking to either become or reinforce their leading position in solar energy, while the Indian company, Suzlon, is one of the world's top-five wind energy companies.²⁷ Many of these companies have developed globally recognizable brands, including Acer, Lenovo, Haier, and Tata.

As a result of the rise of new sources of FDI within the Asia-Pacific region, an increasing share of FDI flows now takes place intraregionally, reflecting the increasing participation by the region's developing economies in regional and global supply chains. Developing countries seeking opportunities often find it better to invest in other developing countries. This is

TABLE TITLE

II.8. Average FDI flows to and from Asia-Pacific countries and their global shares, 1996-2000 and 2006-2010

	Average 1996-2000		Average 2006-2010	
	In billions of US dollars	Percentage of world flows	In billions of US dollars	Percentage of world flows
FDI inflows				
Developing Asia-Pacific countries	115	14	340	22
Developed Asia-Pacific countries	15	2	49	3
FDI outflows				
Developing Asia-Pacific countries	53	7	233	15
Developed Asia-Pacific countries	30	4	101	6

Source: ESCAP calculations based on UNCTAD (2011a).

Note: Developed Asia-Pacific countries include Australia, Japan and New Zealand.

not only because they offer comparable or lower wages or prices but as other developing countries are at corresponding stages of development, they can absorb similar types and levels of technology and knowledge.²⁸ However, the situation varies from one subregion to another.

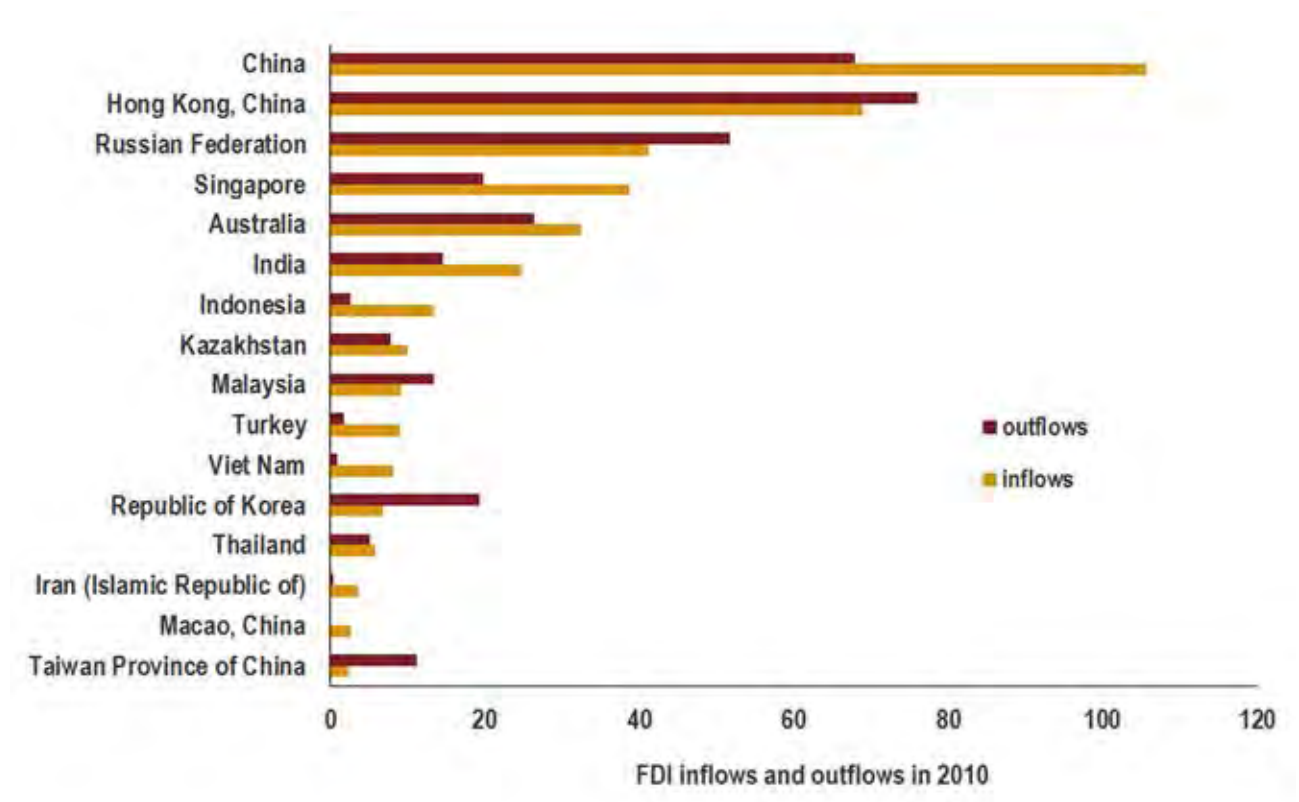
South-East Asia – Between the periods 1998-2000 and 2008-2010, the average proportion of FDI inflows to South-East Asia coming from the European Union and the United States fell from 55 to 31 per cent of total inflows to the region while those from ASEAN+6 countries (+Australia, China, India, Japan, New Zealand and the Republic of Korea) increased from 15 to 41 per cent. Among the ASEAN+6 sources, Japan was the largest contributor at 10 per cent, followed by China at 5.3 per cent, and the Republic of Korea at 4.3 per cent.²⁹ It is also noticeable that an increasing proportion of intra-subregional flows are going to the “CLMV” countries – Cambodia, Lao People’s Democratic Republic, Myanmar and Viet Nam. In Cambodia, for example, 45 per cent of

FDI inflows are from ASEAN countries though China is the largest single contributing economy. Much of the investment has gone into the garment sector. In the Lao People’s Democratic Republic, China and Viet Nam are the largest contributors of FDI, which is mainly directed to hydroelectricity and mining. For Viet Nam during the period 1990-2010, the largest investors were from Japan, Malaysia, the Republic of Korea, Singapore and Taiwan Province of China.³⁰ In Myanmar, Chinese investors contributed the largest amount of FDI, pledging to invest \$20 billion during the 2010-2011 fiscal year, with the main recipients being the electricity, oil and gas and mining sectors.³¹

South Asia – For India, about 57 per cent of the Asia-Pacific FDI comes from South-East Asia³² and 37 per cent from East and North-East Asia, with far less from its South Asian neighbours.³³ As observed earlier, Indian companies are also becoming active players in a number of Asia-Pacific economies including ASEAN countries, such as Indonesia, Malaysia, Singapore and

FIGURE TITLE

II.9. Top recipients of FDI inflows in Asia and the Pacific in 2010 and FDI outflows from these countries (Billions of US dollars)



Source: ESCAP based on UNCTAD (2011a).

Thailand and select South Asian economies, such as Nepal and Sri Lanka. For Pakistan, the most significant suppliers of greenfield FDI are from Malaysia, Singapore and Thailand.³⁴ In Bangladesh, during 2009-2010, the largest contributors of FDI, in terms of proposed investments, were Saudi Arabia, Republic of Korea and China.³⁵ In that period Bangladesh also originated small FDI outflows, 39 per cent of which went to India.³⁶ Sri Lanka has benefited from increased investment from India and as it recovers from its prolonged conflict it is also expecting increasing inflows of FDI from other Asia-Pacific countries.

North-East Asia – The largest FDI destination in Asia and the Pacific is by far China, with around two thirds of the inflows coming from East and North-East Asia, the principal sources being Hong Kong, China, Japan and the Republic of Korea. Overall, in 2010, some 72 per cent of the FDI flows to China were sourced in the Asia-Pacific region, up from 62.3 per cent in 2000. In addition, FDI outflows from China have continued to grow, increasing by 20 per cent in 2010. This growth is likely to continue due to the country's high level of domestic savings and its increasing need to secure the supply of resources and access to new markets and technology.³⁷ China is already a large investor in South-Asian countries and is also increasing its presence in Central Asia and the Pacific subregions.

Central Asia – Most FDI inflows target the natural resources sector, oil and gas as well as minerals and other precious and base metals. Between 1993 and 2008, this sector witnessed a ninefold increase in inflows, two-thirds of which went to the energy sector.³⁸ In 2010, however, the subregion's overall FDI inflows fell by 28 per cent to about \$14.8 billion.³⁹ The dominant investor is the Russian Federation, which, in 2009, accounted for 68 per cent of the subregional FDI inflows. Nevertheless, in addition to traditional sources, such as Japan and the Republic of Korea, a gradually larger portion of FDI inflows has recently come from developing countries, such as China and the Islamic Republic of Iran, and notably, both China and India have been pursuing joint ventures.⁴⁰ However, South-South investment links in this subregion have been concentrated

in a handful of countries, such as Kazakhstan and Turkmenistan, which have vast energy and natural resources.

Pacific – In 2010 French Polynesia, Samoa and Solomon Islands experienced the largest growth in FDI inflows in the subregion. Inflows to French Polynesia more than doubled to \$26 million while inflows to Samoa and Solomon Islands almost doubled to \$238 and \$2 million, respectively.⁴¹ The leading sectors for FDI inflows in the subregion are tourism, fisheries and mining.⁴² In addition, liberalization of the market in Samoa has spurred investment in telecommunications.⁴³ Most FDI to the Pacific island economies comes from Australia, New Zealand, Japan and, increasingly, China. In Papua New Guinea, Australian companies are the most active in the mining and petroleum sectors but China is also increasing its investment there, including the \$1-billion Ramu nickel mine.⁴⁴ In Fiji, where Australia is also the largest investor in the tourism industry as well as in textiles, garments and footwear, FDI declined from a peak of \$410 million to \$56 million in 2009, although it recovered to \$200 million in 2010 and in 2011, a Chinese investor group acquired 6,000 acres of land to establish tourist and other facilities.⁴⁵ The Australian S-TCF scheme helped spur FDI to Pacific island economies by facilitating duty-free access for textiles, clothing and footwear products manufactured in the Pacific Island Forum countries, but it expired in December 2011.

Least developed countries – Flows to the region's 14 least developed countries dipped in 2009 but grew by more than one-third in 2010 to \$3.6 billion. Nevertheless, they account for only 1 per cent of the region's FDI inflows.⁴⁶ In 2010, more than two-thirds of the FDI in least developed countries in the region was placed in Bangladesh, Cambodia and Myanmar, which have all experienced significant growth. Outflows of FDI from least developed countries remain low, at 0.01 per cent of total FDI outflows from the Asia-Pacific region. In 2010, FDI outflows from the least developed countries as a whole fell by 20 per cent to \$42 million, of which two-thirds of the amount originated from Bangladesh and Cambodia. Most FDI from Bangladesh goes

to India, with some heading to Sri Lanka and Pakistan. FDI from Cambodia mostly goes to China, Singapore and Thailand.⁴⁷

A fragmented region

The extent of tariff and behind-the-border barriers to trade suggests that there is still considerable scope for further trade liberalization in the region. However, currently, there is not much appetite for liberalizing unilaterally. Many countries are willing to continue reforms but only if other countries reciprocally offer market access. This is best achieved through multilateral trade negotiations. However, since the conclusion of the seventh multilateral round of the WTO in 1995, there has been little progress on this front. Countries impatient with the slow pace have turned, instead, to bilateral or at best small plurilateral preferential trade agreements.⁴⁸

This region has been responsible for around half of all RTAs. Asia-Pacific economies are parties to more than 140 agreements and are contemplating or negotiating many more. This activism signals a preference for deeper integration among countries in the region than currently envisaged in the Doha development round of the WTO, as well as an attempt to break multilateral deadlocks, mostly through bilateral negotiations.⁴⁹ However, expanding bilateral deals has the great disadvantage of increasing regional fragmentation.⁵⁰

More than three-quarters of all RTAs signed

by countries in the region are bilateral. There are also 15 plurilateral RTAs, and 15 RTAs between a country and a bloc. Box II-1 provides an overview of the key RTAs in each of the five subregions of Asia and the Pacific. The RTAs average eight members, a relatively small size for a regional bloc.⁵¹ Subregional trade agreements include the ASEAN Free Trade Area (AFTA) now being transformed into an ASEAN Trade in Goods Agreement (ATIGA), the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) FTA, the Economic Cooperation Organization Trade Agreement (ECOTA) and the South Asian Free Trade Area (SAFTA).

Most RTAs whose members are only from the Asia-Pacific region aim to eliminate tariffs and other trade barriers. Trade agreements include rules of origin to avoid trade deflection to unintended partners. Some of them, especially the recent ones, extend their scope beyond trade in goods to cover trade in services, investments and economic cooperation to exploit the full potential of regionalism. Liberalization of trade in goods is generally on a negative list basis, meaning all products are covered in a trade agreement except those on an exclusion or negative list (except in the case of APTA, which was set on a positive list basis). On the other hand, trade in services and investments are liberalized generally on a progressive or positive list basis, although some agreements have investment liberalization on a negative list basis as well, for instance, the Japan-Singapore FTA.⁵² Some agreements, however, have provisions

BOX II.1. Key RTAs in each of the five subregions of Asia and the Pacific

As discussed in other ESCAP studies,^a the Asia-Pacific region appears to be fragmented into several geographical subregions characterized by distinct political, cultural and historical features. In addition, the degree of intra-subregional trade and economic integration vary substantially across subregions, though such variation is often unrelated to the number of RTAs signed among the economies of each subregion. For instance, East and North-East Asia has the largest intensity of intra-subregional trade in Asia and the Pacific (64 per cent in 2010, see table II.2), which is close to that of Europe (69 per cent in 2010, see table II.1). Yet, East and North-East Asia is the only subregion in Asia and the Pacific

BOX II.1. **Continued**

without any bilateral or plurilateral agreement linking its major economies. In contrast, the other Asia-Pacific subregions have at least one RTA in force signed by most or all of its economies.

East and North-East Asia

As already mentioned, this subregion not only has the most intensive intra-subregional trade in the region but is also the largest regional market for exports from other Asia-Pacific subregions (table II.2). However, the only agreements in force involving East and North-East are three bilateral trade agreements (BTAs): the Closer Economic Partnership Agreements (CEPA) signed in 2003 between China and Hong Kong, China and between China and Macao, China, and the Economic Cooperation Framework Agreement (ECFA) signed in 2010 between China and Taiwan Province of China. Although the three major economies of the subregion, China, Japan and Republic of Korea, are intensively involved in negotiating trade agreements with common partners such as ASEAN, the European Union, Australia, India, New Zealand and the United States, as of the time of writing, they have not been aggressively pursuing trade arrangements with each other.

However, this could change quickly as an announcement of soon-to-start negotiation of a tripartite FTA is expected at a May 2012 trilateral summit. This news would follow an expected announcement that the parties have concluded the negotiation of a three-way investment treaty, which can be seen as an important stepping stone towards the far more ambitious goal of establishing a free-trade area among these Asian trade giants.^b In the past few years, these countries have been studying the possibility of creating a trilateral FTA in which the final joint study meeting on the feasibility of such an agreement was held in December 2011. A free-trade agreement between the three countries would be a major achievement, not only in bringing their economies closer together but also in providing additional drivers for a broader regional integration across the whole Asia-Pacific region.

North and Central Asia

The primary trade agreement among countries in this subregion (plus three other former Soviet Union States) was signed at the end of 1994 as CIS. It took almost five years to notify it to WTO, and much longer to complete negotiations to create a free-trade zone among its members. The CIS Free Trade Agreement (CISFTA) was finally signed in 2011. It should be pointed out that a number of members in CISFTA have strong trade and investment linkages with Western Europe and that they look more favourably upon expanding their trading and financial relations with the European Union. However, the role of the Russian Federation as the largest market of CISFTA economies is undeniable not only for trade in goods, but also, as mentioned above, as a major destination for temporary labour migration.

CISFTA is not the only agreement among economies in the region. In the late 1990s, these economies established a customs union under the name of Eurasian Economic Community (EurAsEC) and in 2003, a subgroup of North and Central Asian economies signed ECOTA with several South-West Asian countries

South and South-West Asia

SAFTA was first signed among the seven South Asian countries which were members of SAARC. Afghanistan joined in 2010. SAFTA came into effect on 1 January 2006, with the aim to reduce tariffs for intraregional trade. Pakistan and India are to complete

implementation by 2012, Sri Lanka by 2013 and Bangladesh, Bhutan, Maldives and Nepal by 2015. SAARC members have established cooperation in standards, customs procedures and more recently are developing modalities for liberalization in services trade. Regarding goods, significant progress has been made in reducing sensitive lists, which has enabled more meaningful merchandise liberalization. Expansion of SAFTA to cover new areas may eventually lead to a full-fledged South Asia Economic Union. This is complemented by bilateral agreements between India and Sri Lanka, Bhutan and Nepal. Another initiative is ECO, initially formed in 1985 by Turkey, Iran and Pakistan but later expanded to cover Afghanistan and six Central Asian countries – Azerbaijan, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan and Tajikistan. In 2003, members established the ECO Trade Agreement. Some South Asian countries have trade and economic partnership agreements with East and South-East Asian countries. India is a summit-level dialogue partner and has signed an FTA with ASEAN, which is complemented by bilateral FTAs/CEPAs with Singapore, Malaysia and Thailand. India has CEPAs with Japan and Republic of Korea and is a member of the East Asia Summit. Pakistan has FTAs with China and Malaysia and Sri Lanka.

South-East Asia

This subregion has been at the forefront of regional integration efforts in Asia since the signing of AFTA in 1992 and complementary negotiations in other areas, such as services, investment, recognition of qualifications and standards, all of which have deepened this agreement. In 2010, all the commitments regarding goods trade were consolidated in ATIGA, which not only focuses on tariff liberalization and non-tariff measures but includes matters related to simplification of rules of origin and its implementation. Under this agreement, various agencies and regulatory bodies dealing with merchandise imports, including customs, health and agricultural authorities, will cooperate in ensuring smoother customs operations. ASEAN member countries have also made significant progress in lowering intraregional tariffs through the Common Effective Preferential Tariff (CEPT) scheme for AFTA and have agreed to establish the ASEAN Economic Community by 2015. An impressive achievement of ASEAN's contribution to the regional economic integration process is the creation of dialogue partnerships, which have helped to bring together the major economies of the region, namely Australia, China, Japan, India, New Zealand and the Republic of Korea that have ASEAN+1 FTAs.

Pacific

PICTA, signed in 2008, covers trade in goods among 14 members of the Pacific Islands Forum and does not include Australia and New Zealand. As of 2008, it is being expanded to trade in services. Based on PACER, as the framework agreement to deepen trade and investment liberalisation in the broader Pacific on a step-by-step basis, Australia has started to promote the PACER-plus agreement which includes Australia and New Zealand. Negotiations are still undergoing.

Sources: APTIAD at www.unescap.org/tid/aptiad and Bilaterals.org at www.bilaterals.org.

^a ESCAP, *Asia-Pacific Trade and Investment Report 2011: Post-crisis Trade and Investment Opportunities* (Bangkok, 2011).

^b Based on text posted at www.bilaterals.org on 30 March 2012 and attributed to Yuka Hayashi in Tokyo, Min-Jeong Lee in Seoul and Aaron Back in Beijing.

for movement of natural persons, such in the Japan-Philippines FTA, which covers the movement of medical caregivers to Japan subject to a limit. Economic integration in the region has progressed the most under the ASEAN process, which will deepen further with the implementation of complementary agreements to AFTA, such as the ASEAN Framework Agreement on Trade in Services (AFAS), the ASEAN Industrial Cooperation (AICO) scheme, the ASEAN Investment Area (AIA), and the formation of the ASEAN Economic Community planned for 2015. Following the ASEAN lead, SAARC adopted the South Asian Agreement on Trade in Services (SATIS) in 2010 to complement SAFTA, and is working on an investment agreement. Agreements such as AFTA, SAFTA, BIMSTEC-FTA, Pacific Island Countries Trade Agreement (PICTA) and the Asia-Pacific Trade Agreement (APTA) provide room for special and differential treatment (SDT) to least developed countries, offering them longer periods to tariff elimination, along with special measures regarding rules of origin (ROO).

The Asia-Pacific network of FTAs and RTAs as summarized in figure II.10 presents a picture of a dense web of trade arrangements criss-crossing the region, mostly within the subregions but also linking the subregions, such as ECOTA linking some Central Asian countries with some South and West Asian countries and BIMSTEC linking the South Asian countries with some South-East Asian countries. However, the region does not have a seamless larger market as most of the agreements are bilateral or subregional in nature. It is also not conceivable to coalesce these agreements into a broader arrangement due to different scopes and coverage and rules. One of the key components of a scheme of economic integration is to create a larger integrated market through trade liberalization and trade facilitation that enables businesses in the region to be restructured on the most efficient basis and to exploit the economies of scale, scope and specialization. This process

of efficiency-seeking industrial restructuring could have substantial welfare gains for participating countries. The benefits of extended markets could be particularly significant for smaller and poorer economies, as observed in chapter one. The diversity in the levels of development across the region makes regional economic integration particularly fruitful as the synergies between factor endowments, production structures and specializations provide for mutually beneficial exchanges. Similar synergies exist between countries in the region and others outside the region, and recent initiatives such as the Trans-Pacific Partnership (TPP) expect to take advantage of them (see box II.2).

In terms of integration across the subregions, the engagement of ASEAN with neighbouring countries around the grouping as dialogue partners has produced ASEAN+1 FTAs with Australia, China, India, Japan, the Republic of Korea and New Zealand. The dialogue partners have also been involved in bilateral deals among themselves, such as the India-Japan and the India-Republic of Korea comprehensive economic partnership agreements. The dialogue process has also led to broader groupings. These include the East Asia Free Trade Agreement (EAFTA) proposed within the framework of ASEAN+3 Summit; and the Comprehensive Economic Partnership of East Asia (CEPEA) proposed in the framework of the East Asia Summit (EAS) combining ASEAN+6 countries. CEPEA brings together 16 of the largest and fastest-growing economies. A RTA among them could create the third pole of a multi-polar global economy, along with NAFTA and the European Union.⁵³

The feasibility studies of the EAFTA and CEPEA were conducted in parallel by the track-II study groups and their reports were presented to the leaders at the twelfth ASEAN+3 Summit and the fourth East Asia Summit, which were both held in Hua Hin, Thailand in October, 2009. In addition, independent simulation studies using computable general equilibrium

BOX II.2. Trans-Pacific Partnership

The Trans-Pacific Partnership (TPP), also known as the Trans-Pacific Strategic Economic Partnership Agreement, is a trade agreement currently under negotiation among the following nine countries: Australia, Brunei Darussalam, Chile, Malaysia, New Zealand, Peru, Singapore, the United States and Viet Nam. It aims to be a comprehensive agreement covering the main pillars of a free trade agreement, including trade in goods, rules of origin, trade remedies, sanitary and phytosanitary measures, technical barriers to trade, trade in services, intellectual property, government procurement, competition policy, and engagement with small- and medium- enterprises.

Formal discussions of TPP were launched on the sidelines of the 2002 Asia-Pacific Economic Cooperation (APEC) Leaders' Meeting in Los Cabos, Mexico, by official leaders of Chile, Singapore and New Zealand. Four rounds of negotiations were held between 2003 and 2005. At the fifth round of negotiations in April 2005, Brunei Darussalam took part as a full negotiating party after which the trade bloc became known as the Pacific-4 or P4. In September 2008, the United States announced that it would begin negotiations to join TPP in 2009. In November 2008, Australia, Viet Nam, and Peru announced that they would also be joining the P4 trade bloc. In October 2010, Malaysia announced that it had also joined the TPP negotiations. Canada, Japan, the Philippines, the Republic of Korea, and Taiwan Province of China have also expressed interest in TPP membership. The first round of formal negotiation was held in Melbourne on 15-18 March 2010. From March 2010 to November 2011, nine rounds of TPP negotiations and four meetings on the sideline of APEC meetings were held. In late 2011, three additional countries, Japan, Canada and Mexico, announced their intention to join.

One of the concerns about the TPP is how to relate the new agreement to existing RTAs. Several TPP countries already have multiple agreements in place and many of them are agreements between TPP members. As each agreement has different rules of origin, it is not so easy to simply "stitch them all together" in a new agreement. Three possible models are possible to deal with this problem: (1) the TPP agreement would supersede existing bilateral RTAs between members; (2) the TPP would exist side-by-side with all the existing agreements and business would be allowed to choose whichever agreement gives them the greatest benefits; or (3) the TPP would become a hybrid agreement in which some sections of the TPP replaced existing agreements in some areas while other portions of existing RTAs that were not covered or covered differently would continue to exist.

Early discussions in the TPP suggested that the first option was preferable. Assuming that the new TPP deal provides better, wider-ranging liberalization and coverage than existing agreements, businesses would likely take advantage

BOX II.2. **Continued**

of the TPP preferences. Thus, a new TPP agreement should replace existing arrangements as businesses across the nine member countries would be working from the same agreement. This would streamline trade flows by allowing exporters to, for example, make only one rule of origin calculation before shipping goods to multiple TPP members. Another argument for a wholly new agreement is that it would increase incentives for government officials and business leaders to take the talks seriously. Ignoring existing agreements and starting over with new negotiations might be easier for negotiators who could then aim for an ideal outcome from the beginning.

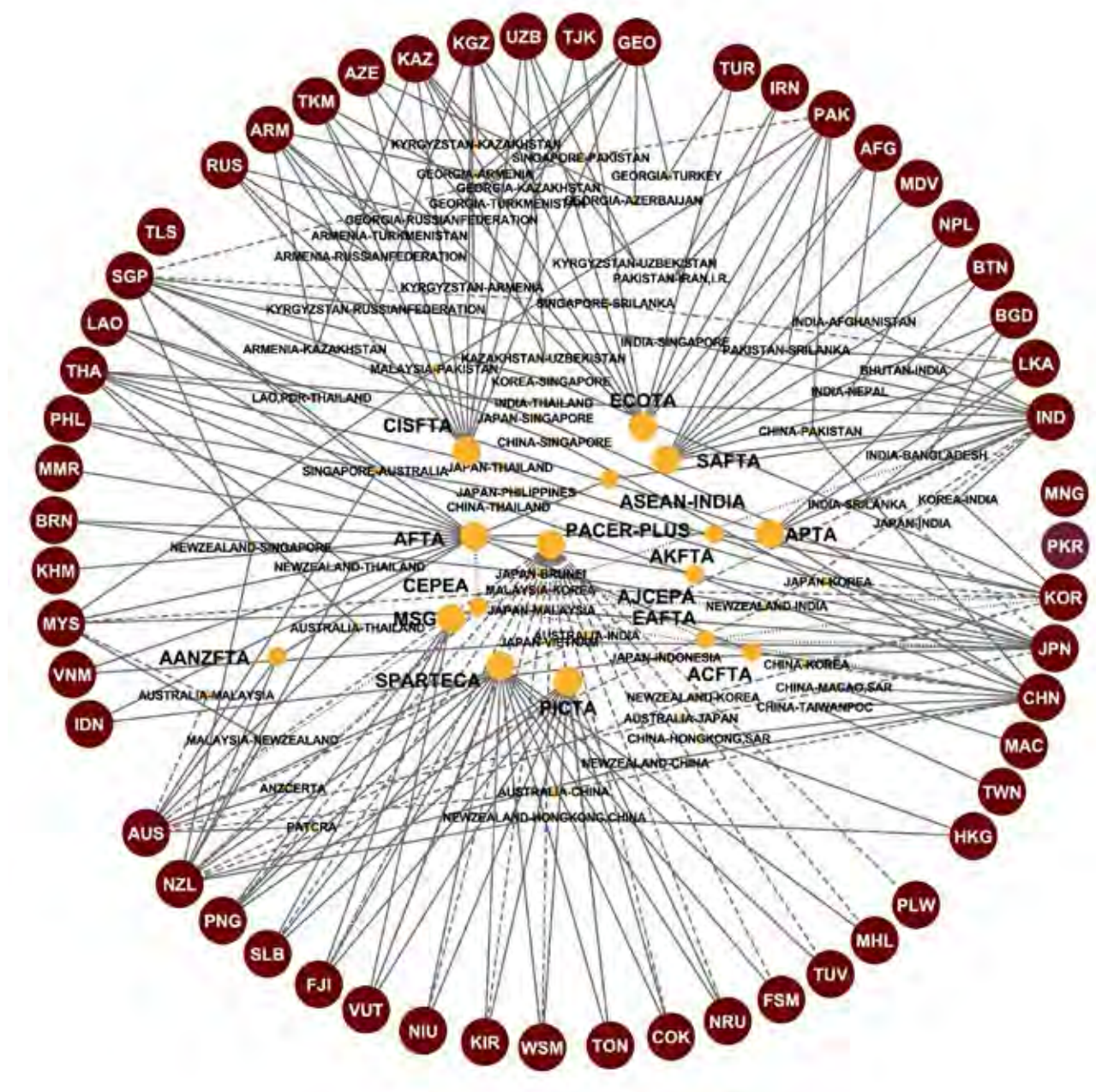
However, economic and political realities in some member countries make this approach problematic. Many of the provisions in existing RTA agreements were carefully crafted compromises, offering a balance of benefits, opportunities and cost to the economic interests in each member. Thus, replacing existing agreements with a common one would alter or even undermine the balance of benefits in place and may unravel the partnerships between States from previous deals. Therefore, the United States proposed the hybrid model that each country will conduct bilateral negotiations with TPP member countries with which it does not already have a RTA. It would then have eight different bilateral deals and anything not already covered in these bilateral agreements could be addressed multilaterally among the TPP members. The final document, then, would include a partially common agreement that would apply to all nine countries as well as some separate annexes and schedules with specific commitments for individual countries.

The second round of TPP talks in June 2010 failed to settle the issue of how the TPP would sit in relation to other RTAs. The United States came out as a strong supporter of keeping existing market access agreements from bilateral RTAs while Australia, Singapore and New Zealand argued hard for a comprehensive agreement in the TPP that would supersede existing RTA agreement. On a practical level, the amount of work it would take to manage a hybrid system would be significant. The issue is most stark in market access for goods, since all of the existing RTAs contain various provisions for reducing barriers to trade in goods.^a Although a deal could not be reached by APEC Leader's meeting in November 2011, as targeted, a five-page "broad outlines" of the agreement was released to the public. The statement noted the following defining features for the TPP: comprehensive market access; fully regional agreement; cross cutting trade issues (the 'horizontal issues'); new trade challenges (digital economy and green technology); and a living agreement.

Sources: Elms and Lim (2012).

^a As an example, suppose a manufacturer of nails was eligible for zero tariffs under the Canada-U.S. RTA while Mexican nails were still subject to an interim tariff of six percent. Officials had to create a rule that all incoming products needed to be marked with a country of origin label in order to differentiate between Canadian, American and Mexican nails crossing the border. Customs officials then have to apply the correct tariff rates to the particular shipment.

II.10. Network of trade agreement between countries in Asia and the Pacific



Source: ESCAP based on APTIAD Trade Agreements database; and ASEAN Secretariat. Available from www.aseansec.org/20182.htm and www.aseansec.org/22765.

Notes: Solid lines represent concluded agreements. Dashed lines represent both agreements formally under negotiation and two proposed agreements, EAFTA and CEPEA, for which formal negotiations have not started.

models have shown that both EAFTA and CEPEA hold significant welfare gains for their member countries. Higher welfare gains were reported for CEPEA compared with alternative options because of the larger market size and synergies brought about by the three additional members, Australia, India and New Zealand.⁵⁴ More recently, at the nineteenth ASEAN Summit held in Bali, Indonesia in November 2011, an ASEAN Framework for Regional Comprehensive Economic Partnership was adopted to broaden and deepen

its engagement with the dialogue partners. During the Summit, three working groups in the areas of trade in goods, trade in services and investment were established to define the specific principles and a template under which ASEAN will engage with its partners. As elaborated below, these proposals could serve as stepping stones to the development of a broader and unified Asia-Pacific market and economic community.

Cooperation in trade facilitation

Although trade facilitation measures are implemented by national authorities, their effectiveness depends largely on the extent to which regulations affecting trade are harmonized across countries and on their cooperation in sharing information. As a result, bilateral and regional cooperation is essential. To realize the full benefits of single windows and other electronic trade data exchange systems, one of the most important goals of regional cooperation is to ensure that all electronic data and documents in national single windows are accepted by the authorities of partner countries. However, while international standards have been developed to address technical issues related to cross-border data exchange, there has been little progress in developing an appropriate international legal framework for the cross-border electronic exchange of trade data and documents. Indeed, the pioneering ASEAN Single Window initiative which aims to develop a regional Single Window environment for its members by 2012 (see box II.3) has experienced difficulties in establishing the necessary legal basis for electronic exchange among participating member countries. An additional challenge is building capacities for the effective utilization of single windows and paperless trade, a key objective of the United Nations Network of Experts for Paperless Trade for Asia and the Pacific (UNNEXt) (see box II.4).

Most RTAs among economies of the region now include trade facilitation provisions. The latest ASEAN Agreement on Trade in Goods (ATIGA), which came into force in 2010 includes an entire chapter on trade facilitation. The third round of negotiations of APTA also resulted in a Trade Facilitation Framework Agreement among its six members (Bangladesh, China, India, the Lao People's Democratic Republic, the Republic of Korea and Sri Lanka) in 2009. A comparative study of recent RTAs conducted by ESCAP found that all agreements commit to increasing transparency, including through an obligation to publish laws and regulations affecting trade, and recognize the importance of using international standards for trade facilitation. Other measures that appear to

be increasingly common include those on automation/use of ICT risk management, advance ruling and single windows.⁵⁵

An important aspect of trade facilitation is standards harmonization and mutual recognition and conformity assessment procedures. In this direction, SAARC has made progress. The South Asian Regional Standards Organisation (SARSO) is being set up in Dhaka to implement the Regional Action Plan on Standards, Quality Control and Measures. Within the SAARC framework, harmonization of standards in twelve identified products is being undertaken. In addition, the SAARC Agreement on Multilateral Arrangement on Recognition of Conformity Assessment and the SAARC Agreement on Implementation of the Regional Standard were signed during the seventeenth SAARC Summit held in Addu, Maldives in November 2011. With regard to customs cooperation, the SAARC framework is focusing on building infrastructure, including roads and railways networks near the Land Border Customs Stations (LCSs), smoothening of customs clearance procedures at LCSs, standardization and harmonization of export documentation, automation in customs clearance including through electronic data exchange, and harmonization of tariff lines for top 100 8-digit tariff lines.⁵⁶

An essential component of trade facilitation is transit facilitation measures, although they are usually not specifically covered in trade agreements. While separate bilateral and regional transit agreements are often in place among developing economies of the region, the extent to which they are implemented – as well as their consistency with existing multilateral trade commitments, such as WTO, GATT Article V – is not always clear. Significant barriers to transit trade remain in place in South and Central Asia.

South-East Asia has made more progress in facilitating transit trade through a mix of bilateral, subregional and regional agreements and initiatives. However, according to a recent report, the comprehensive GMS Cross-border Transport Agreement (CBTA) (see box II.5) is still not fully operational and the transport industries of the region remain fragmented

BOX II.3. ASEAN Single Window project implementation

The ASEAN Single Window (ASW) aims to facilitate international trade and investment through expeditious clearance and release of cargoes by the Customs, and constitutes one of the mechanisms to realize the ASEAN economic community.^a

The Protocol to Establish and Implement the ASEAN Single Window was signed in 2006 between the Governments of Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

The summarized signing countries agreed on the following among other points:^b

- i. To provide a legal and technical framework to establish and implement the ASEAN Single Window and National Single Windows as regional commitments towards the establishment of an ASEAN Economic Community;
- ii. To develop and implement the National Single Windows based on international standards and best practices as established in international agreements and conventions concerning trade facilitation and modernisation of customs techniques and practices

In May 2008 the ASW Exchange Gateway became operational aiming to facilitate information exchange (CEPT Form D) on a trial basis.

By 2009, there were major achievements in the activation of NSW in Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand and in implementing the common language of dialogue for the NSW system - the ASEAN Data Model (Work base 1.0).

The ASW Pilot Project began implementation in seven member states, namely Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam in November 2011.

ASW is expected to become fully operational in all participating member States by the end of 2015, enabling ASEAN officials to exchange customs declaration, preferential certificate of origin, and other trade and customs information through a single, shared, secure network architecture.

Sources: ASEAN, 2009, *ASEAN Single Window Fact Sheet*, 2nd Edition, 24 February; ASEAN, 2005, *Agreement to Establish and Implement ASEAN Single Window*, Kuala Lumpur; The Jakarta Post, *ASEAN Ministers to Finalize Single Window Project Draft*, Mustaqim Adamrah, 13 March 2010, available from www.thejakartapost.com/news/2010/03/13/asean-ministers-finalize-single-window-project-draft.html, accessed on 19 April 2012; Asian Development Bank, 2009, *CAREC Transport and Trade Facilitation: Partnership for Prosperity*; Economic and Social Commission of Asia and the Pacific and ADB, 2009, *Designing and Implementing Trade Facilitation in Asia and the Pacific*; and ASEAN, 2006, *Protocol to Establish and Implement the ASEAN Single Window*, 20 December; USAID 2011, Press Release, 1 December, available from www.usaid.gov/rdma/articles/press_release_1508.html. Accessed on 19 April 2012.

^a *ASEAN Single Window Fact Sheet*, 2nd Edition, Association of South East Asia Nations, 24 February 2009.

^b *Protocol to Establish and Implement the ASEAN Single Window*, 20 December 2006.

BOX II.4. Achieving paperless trade in Asia and the Pacific

Adopting electronic technologies to move goods and information through an international supply chain can bring significant efficiency, reliability and predictability to international trade transaction. UNNExT facilitates peer-learning and knowledge sharing to help developing countries catch up with the economies in the region that are most advanced in implementing of trade facilitation measures and make use of innovations like the Electronic Single Window and paperless trade.

Electronic information is easier to process and reduces delays and costs throughout the supply chain. For governments, it can increase security of international trade and revenue trade transactions. For the private sector, it brings efficiency and transparency to the process and most importantly can increase predictability and reduce transaction costs. The implementation of paperless trade should be carried out in a phased manner. According to the United Nations Centre for Trade Facilitation and Electronic Business, the successful implementation of paperless trade systems requires the following steps: business process analysis, process simplification and harmonization, documents simplification and alignment, national data harmonization, cross-border data harmonization and exchange and e-single window and paperless trading.^a

For developing countries, paperless trade can be challenging given the requirement of robust ICT infrastructure. Still a phased approach may help eventually reach the goal of establishing paperless trade systems like an electronic single window. Ultimately, the countries can benefit from greater efficiency in government agencies and private sectors. Experiences demonstrate that implementation of paperless trade systems require strong political and government support and human and financial resources. Governments should take a leading role in establishing a conducive business environment for paperless trade. A collaborative public-private approach with effective stakeholder consultation works best for such an endeavour.

^a See ESCAP, 2009, *Business Process Analysis Guide*; ESCAP, 2009-2011, UNNExT Policy Brief Series 1-7, available from www.unescap.org/unnex/next/pub/brief.asp; ESCAP and ADB, 2009, *Designing and implementing trade facilitation in Asia and the Pacific*.

and unsophisticated.⁵⁷ Apart from political will, a main issue impeding implementation of effective transit systems is the lack of collaboration between trade, transport and/or customs authorities and the limited involvement of local (at-the-border) public and private stakeholders at early stages of negotiations.⁵⁸ Another very important subregional initiative for trade facilitation is the Central Asia Regional Economic Cooperation (CAREC) Transport and Trade Facilitation Strategy (see box II.6).

In search for a broader framework for regional integration

Bilateral and plurilateral agreements for small groups of countries help increase trade, but, as observed earlier, they do not contribute to the creation of a seamless, region-wide market because of their differences in scope, coverage and rules. What is needed is not just to deepen integration within subregions but also to foster trade links across subregions to facilitate exploitation of the synergies between the subregions and to harness the

BOX II.5. The Greater Mekong Subregion (GMS) Agreement on Facilitation of Cross-Border Transport of Goods and People

The Greater Mekong Subregion (GMS) Agreement is a multilateral instrument for the facilitation of cross-border transport of goods and people. The Agreement provides a practical approach in the short to medium term, to streamlining regulations and reducing nonphysical barriers in GMS. It incorporates the principles of bilateral or multilateral action and flexibility to recognize procedural differences in each of the GMS countries, and includes references to existing international conventions that have demonstrated their usefulness. It also takes into account and is consistent with similar initiatives being undertaken by ASEAN. The specific aspects which are covered in this agreement are:^a

- i. single-stop/single window customs inspection;
- ii. cross-border movement of people, goods, and vehicles;
- iii. simplification and harmonization of border clearance formalities, procedures and documents;
- iv. transit traffic regimes, including exemption from physical customs inspection, bond deposit, escort, phytosanitary and veterinary inspection;
- v. advance exchange of information;
- vi. requirements that road vehicles must meet to be eligible for cross border traffic;
- vii. exchange of commercial traffic rights; and
- viii. infrastructure, including road and bridge design standards, road signs and signals.

^a ESCAP and ADB 2009, Designing and Implementing Trade Facilitation in Asia and the Pacific.

potential of efficiency seeking industrial restructuring across the Asia-Pacific region.

To fully exploit the potential of regional economic integration and for efficiency-seeking industrial restructuring to take place, the Asia-Pacific region needs a broader regional trade and economic cooperation arrangement that should (i) be wider in coverage, extending to all economies in the ESCAP region; (ii) extend to substantially all trade using a negative list basis, for

consistency with GATT Art. XXIV and GATS Art. V; and (iii) have comprehensive scope, covering trade in services, investment, trade and transit facilitation and cooperation. Such agreement should be progressively deepened, and it should also be equitable and provide special and differential treatment to poorer countries, as well as assistance for lagging geographical areas and vulnerable sections of the population. In this study, we suggest three possible routes to evolve a broader integrated market in the Asia-Pacific

BOX II.6. Central Asia Regional Economic Cooperation (CAREC) Transport and Trade Facilitation Strategy

The Central Asian has made some progress in developing transport infrastructure, customs modernization and trade facilitation. To expand on this, they are working towards further improving transport infrastructure and to reduce the cost of trade. Recognizing the synergy between transport and trade, CAREC has developed a transport and trade facilitation strategy (TTFS) for the period 2008-2017. This ten-year action plan aims to improve the subregion's competitiveness by taking an integrated approach, which entails combining transport investments with trade facilitation initiatives and enhancing the three pillars of the strategy—infrastructure, management and technology. Key elements of the strategy are coordinated improvements of transport infrastructure and trade facilitation, including harmonized cross border regulations, procedures, and standards along priority transport corridors. These improvements will result in significant and measurable reductions in transport costs and time for local, cross-border, and transit traffic. It will also, as a result, lead to an increase in trade along the corridors.

The goals of the CAREC trade facilitation component are to:

- i. reduce transaction costs and time significantly by improving administrative efficiency and simplifying, standardizing, and harmonizing trade procedures;
- ii. encourage the free movement of people and goods;
- iii. enhance the transparency of laws, regulations, procedures, and forms, and share information on these and other trade issues.

The trade facilitation component comprises three elements aimed at reducing trade costs: promoting concerted customs reform and modernization; using an integrated trade facilitation approach through interagency cooperation and public–private partnerships; and developing efficient regional logistics.

region:

1. An Asia-Pacific Economic Area,
2. Building on ASEAN+ approach, and
3. A new Asia-Pacific Trade Agreement (APTA II).

An Asia-Pacific Economic Area (APEA): The first option is to create an APEA as a framework to connect existing subregional groupings to exchange trade preferences between members, similar to the European Economic Space Agreement that combines the Single Market of the European Union with members of the European Free Trade Association. The

major subregional groupings that could be covered in APEA are ECOTA, AFTA, SAFTA, and the proposed Pacific Agreement on Closer Relations-Plus, which encompasses the Pacific Islands Free Trade Agreement (PICTA) plus Australia and New Zealand. Overall these four trade agreements include 43 of the 51 Asia-Pacific economies.⁵⁹ A modelling exercise conducted by ESCAP suggests that member countries would gain substantially if the four groupings were joined in APEA (figure II.11).

The potential welfare impacts of the proposals are analysed using simulations based on data

from the Global Trade Analysis project (see annex for details). For assessing the potential welfare impacts from the APEA proposal, two scenarios are considered: "Scenario A", which covers full trade liberalization within each bloc; and "Scenario B" which adds full trade liberalization between each bloc. In both cases, the simulations consider the long-run effects of a full removal of tariffs on trade in goods and the implementation of trade facilitation measures. The two scenarios are schematically represented in figure II.11.

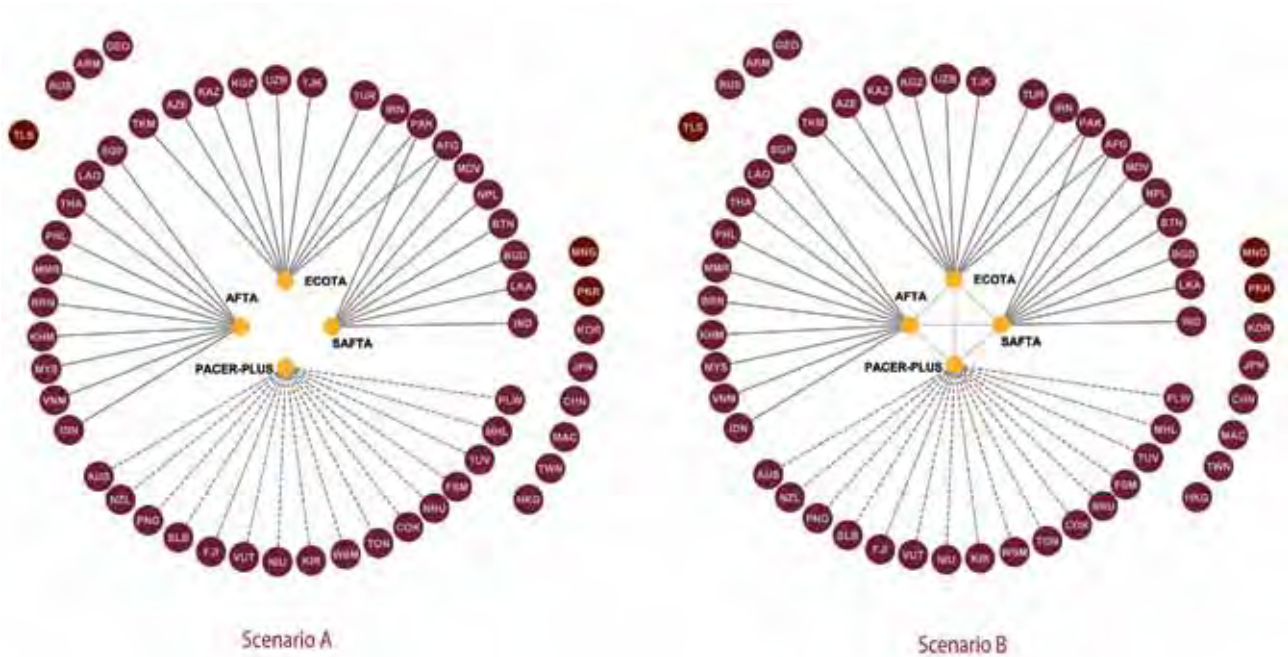
The results are shown in figure II.12. They suggest that full trade liberalization under each of the four agreements would be beneficial but that the gains would be significantly greater under the scenario of full trade liberalization within and between the blocs: more than tripled for SAFTA, more than doubled for PACER-Plus, more than 50 per cent for AFTA and 36 per cent for ECOTA.

While these results are encouraging, implementation of this approach may,

however, be complicated by the fact that the four subregional groupings are at different stages of their evolution with the most advanced of them, AFTA, targeting to evolve into the ASEAN Economic Community by 2015 and PACER-Plus still under negotiation. Furthermore, a major limitation of this approach is that some of the region's largest markets, such as China, Japan and Republic of Korea, would remain excluded, which reduces the potential gains of this integration initiative significantly. In any event, there is a tremendous potential of mutual learning across the subregional groupings of the region and sharing their best practices. Hence, a consultative committee of subregional groupings should be constituted to facilitate that mutual learning.

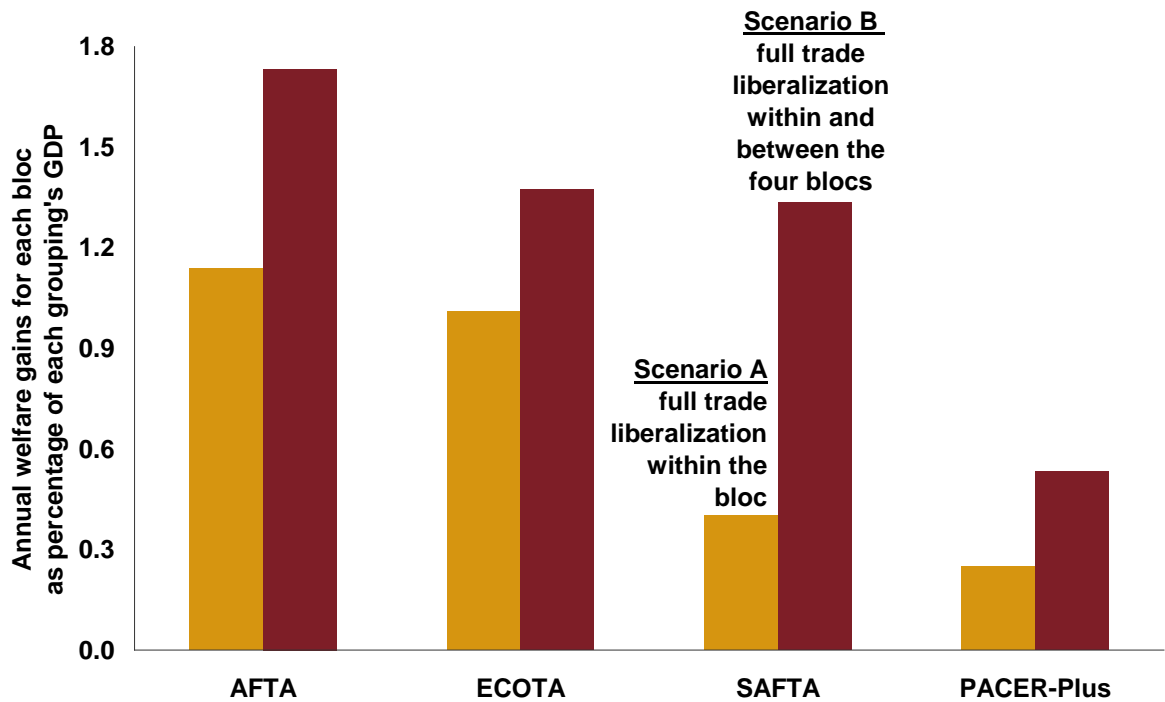
Building on ASEAN+ approach: The ASEAN dialogue process has contributed towards a discussion of broader regional arrangements. Two proposals are being discussed in the ASEAN framework include an East Asia Free Trade Area (EAFTA) among ASEAN+3

FIGURE TITLE
II.11. Scenarios A and B for trade liberalization in AFTA, SAFTA, ECOTA and PACER-Plus



Source: ESCAP.

FIGURE TITLE
II.12. Long-run welfare gains for four subregional agreements, including trade facilitation



Source: ESCAP based on John Gilbert (2012).

Notes: The simulations consider the scenario in which trade facilitation measures are included. See annex for further details.

countries, and the Comprehensive Economic Partnership for East Asia (CEPEA) originating in the East Asia Summit which additionally includes Australia, India and New Zealand (ASEAN+6). One option could be to take the more inclusive of the two approaches, CEPEA, and treat it as the nucleus of an incipient Asia-Pacific RTA to which other countries could accede (figure II.13).

The advantage of this approach is that a feasibility study and some subsequent exploration in ASEAN+ working groups have been completed. All six dialogue partners have concluded ASEAN+1 FTAs that can be easily multilateralized with common and cumulative rules of origin. Combining the region's growth poles, China and India, with the advanced economies of Japan and Australia, and the Republic of Korea and those of ASEAN, could produce a regional grouping, comparable in stature with the European Union and the NAFTA but outclassing them in terms of dynamism by a wide margin

(see table II.9). After accession by additional countries, it would lead to a broader regional market.

In the simulation of welfare gains from expanding the ASEAN FTA to CEPEA two scenarios were considered: without trade facilitation and with trade facilitation. Simulation results find substantial welfare gains, at close to 0.8 per cent of the GDP of CEPEA members when trade facilitation measures are considered (figure II.14).

Overall, the results suggest both the need of aiming at broader agreements, covering larger number of countries, and the importance for such agreements to include provisions to reduce trade costs through various trade facilitation measures.

A new Asia-Pacific Trade Agreement (APTA II): The third option is the creation of a new broader agreement open to all countries in the ESCAP region. ESCAP, having sponsored

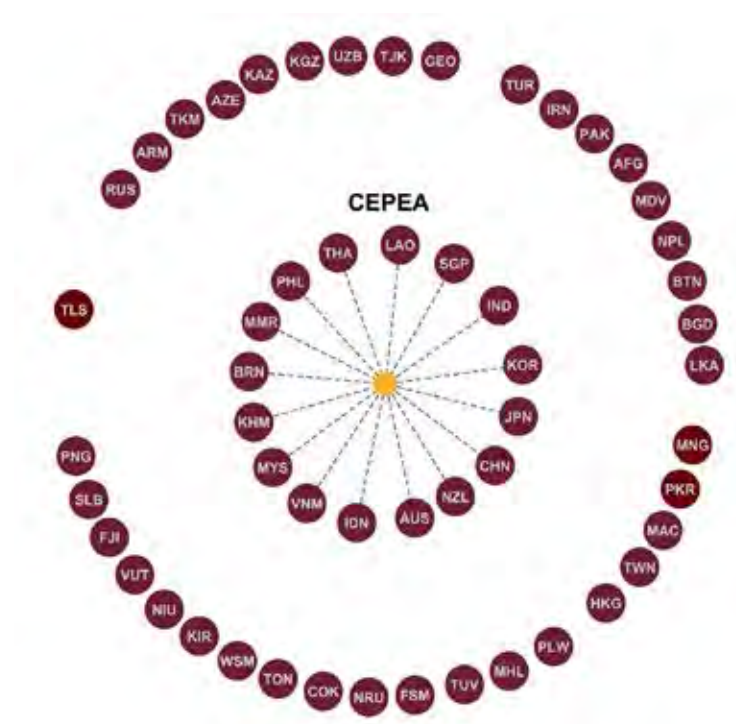
a pioneering RTA in the region in 1975, could provide auspices for a region-wide agreement, which could be called the Asia-Pacific Trade Agreement II (APTA II) or Asia-Pacific Trade and Economic Cooperation Agreement (APTEC). Such agreement is shown schematically in figure II.15.

APTA II could coalesce the multiple bilateral and subregional FTAs into a broader region-wide trade and comprehensive economic cooperation arrangement. Such an arrangement would have the broadest

possible coverage of any existing or under negotiation regional trade agreement in Asia and the Pacific. As this option would not have any baggage, it would be possible for it to have all the desirable features, including a comprehensive scope, based on a negative list and trade facilitation, investment and economic cooperation, including the flexibilities and special and differential treatment features for the poorer countries to make it a RTA with a human or Asia and the Pacific face and as a model for the regional economic integration.

FIGURE TITLE

II.13. CEPEA as a potential nucleus of a broader integrated market



Source: ESCAP.

TABLE TITLE

II.9. CEPEA in relation to the EU and NAFTA in 2011

Indicator	EU(27)	NAFTA	CEPEA(16)
Gross national income (PPP)	15 789 (20.03)	18 115 (22.99)	26 136 (33.16)
GDP, current prices (billions)	17 960 (25.65)	18 009 (25.72)	19 640 (28.05)
Exports (millions)	6 029 (33.09)	2 282 (12.53)	5 126 (28.14)
International reserves ^a	682 (7.19)	299 (3.15)	5 214 (54.94)
Population (millions)	500 (7.28)	457 (6.65)	3 367 (48.98)

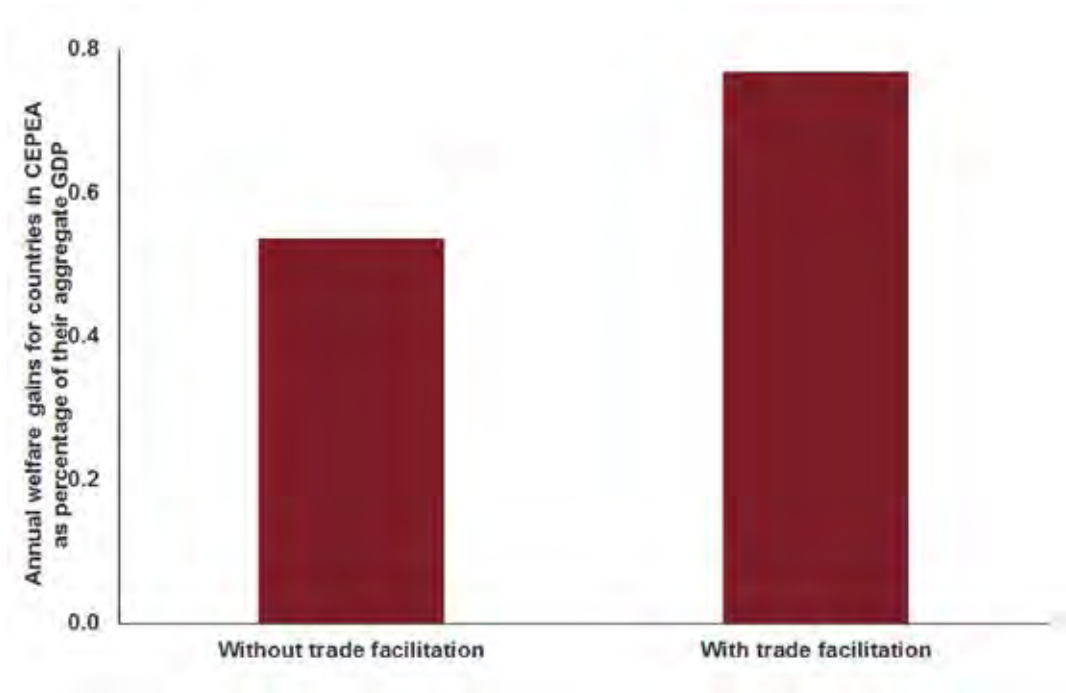
Source: ESCAP based on IFS Database, WEO Database and WTO database.

Note: Percentage of world total in parenthesis.

^a International reserves data are for 2010.

FIGURE TITLE

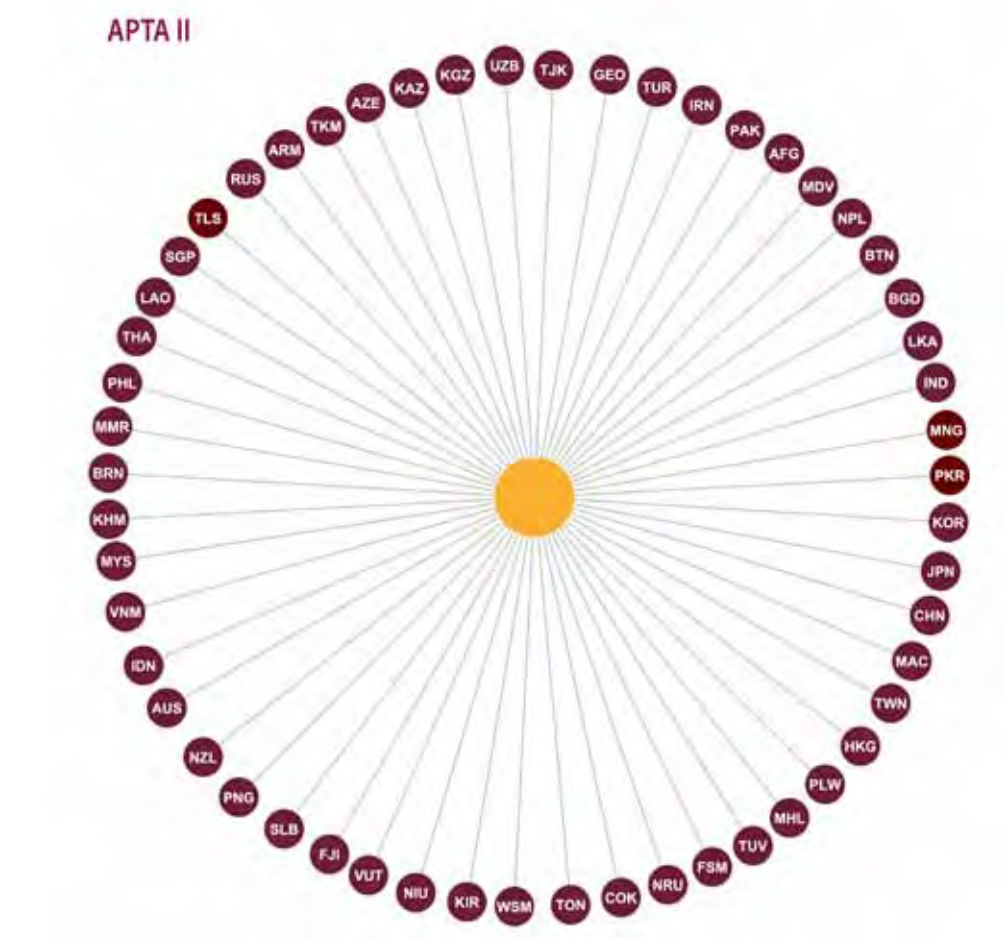
II.14. Potential benefits of expanding ASEAN Free Trade Area to ASEAN+6 (CEPEA)



Source: ESCAP based on John Gilbert (2012).

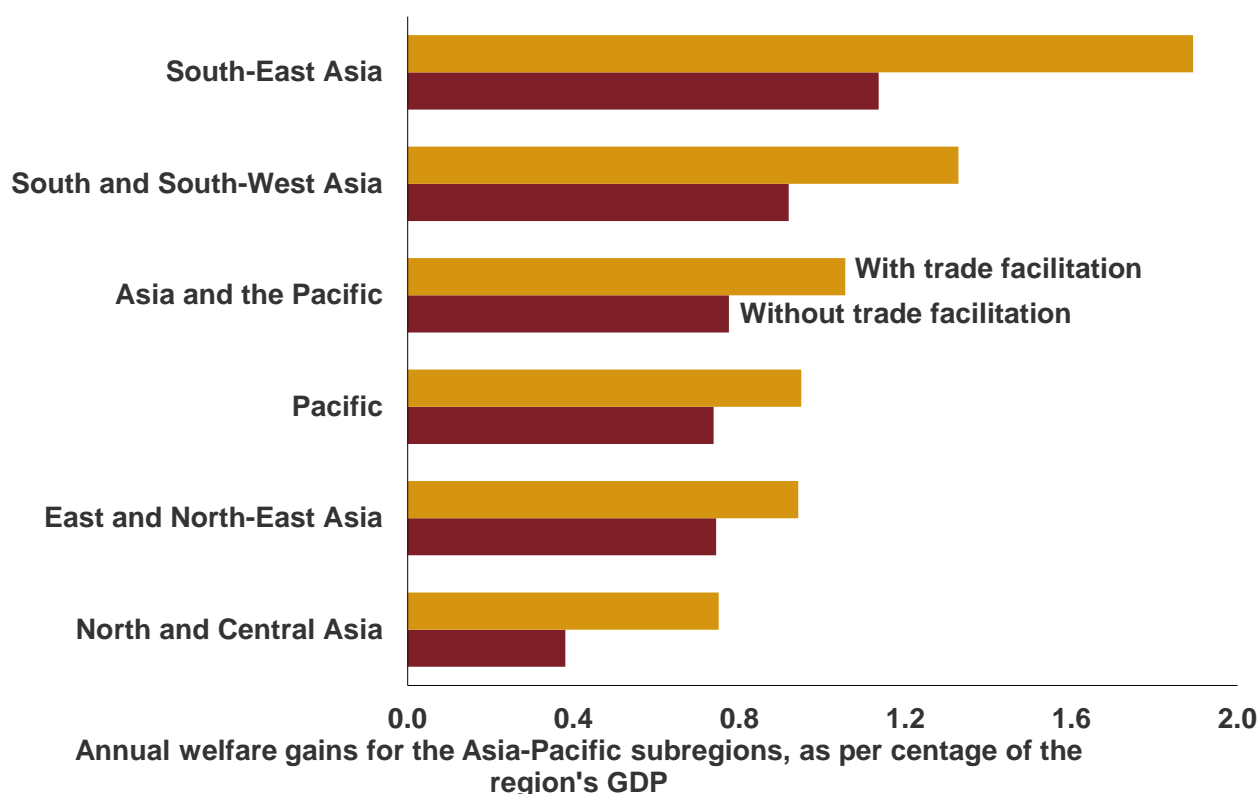
FIGURE TITLE

II.15. Starting afresh through the broadest and most comprehensive possible agreement



Source: ESCAP.

FIGURE TITLE

II.16. Welfare gains from region-wide liberalization

Source: ESCAP based John Gilbert (2012).

TABLE TITLE

II.10. Summary of welfare gains in the simulations

Region	Liberalization of trade among PACER+, ASEAN, SAFTA and ECOTA	Liberalization of trade among and between PACER+, ASEAN, SAFTA and ECOTA	CEPEA (ASEAN plus Japan, Republic of Korea, China, India, Australia and New Zealand)		A free trade agreement encompassing all members of ESCAP	
	With trade facilitation		Without trade facilitation	With trade facilitation	Without trade facilitation	With trade facilitation
Millions of US dollars						
LDCs	752	936	4	286	395	1 234
LLDCs	1 274	1 256	0	0	840	1 864
SIDs	333	534	0	0	214	526
Other	23 365	46 525	59 247	84 717	101 445	136 609
Percentage of the GDP						
LDCs	0.58	0.72	0.01	0.98	0.30	0.95
LLDCs	1.10	1.09			0.53	1.18
SIDs	1.28	2.05			0.82	2.02
Other	0.66	1.32	0.54	0.77	0.78	1.05

Source: ESCAP based on John Gilbert (2012).

Notes: Welfare gains for the GTAP regions included in each grouping. For PACER+, ASEAN, SAFTA and ECOTA the LDCs are Cambodia, Lao People's Democratic Republic, Rest of South-East Asia, Bangladesh and Rest of South Asia; the LLDCs are Kazakhstan, Kyrgyzstan, Rest of Central Asia and Azerbaijan; and the SIDs are the Pacific Islands. For CEPEA, the LDCs are Cambodia, Lao People's Democratic Republic and Rest of South-East Asia. For APTA II, the LDCs and SIDs are the same as for PACER+, ASEAN, SAFTA and ECOTA, but the LLDCs also include the Rest of East Asia and Armenia.

Simulation studies indicate that such an agreement has the potential to generate the largest welfare gains for the region (figure II.16) of up to \$140 billion or over 1 per cent of the region's GDP with broad and comprehensive coverage. When trade facilitation measures are also included in the agreement, as it should be this case, the average gains are 36 per cent higher than without trade facilitation measures. The additional gains accruing from trade facilitation are largest in North and Central Asia (almost 100 per cent higher), reflecting the potential benefits for the subregion's landlocked developing countries,, but they are also important for South-East Asia (67 per cent higher), reflecting the potential gains from integration for countries such as Cambodia, the Lao People's Democratic Republic and Myanmar, whose current trade costs are very large.

A comparative picture of the welfare impacts from the three options in absolute terms and as percentages of the GDP are summarized in table II.10. It shows that even though the overall magnitude of the welfare gains would be at nearly \$50 billion, APEA could be highly rewarding for the members participating in subregional groupings of ASEAN, SAARC, ECO and PICTA. The ASEAN plus approach could bring in up to \$85 billion worth of welfare gains with the accession of other economies. The APTA-II approach, due to its universal coverage, would generate the larger welfare gains, of \$140 billion, of the three approaches considered. In addition, countries with special needs such as least developed countries, landlocked developing countries (LLDCs) and small island developing States (SIDS), tend to have higher welfare gains as a proportion of GDP than others, corroborating results discussed in chapter one. Furthermore, the welfare gains for the countries with special needs would rise if special and differential treatment, technical and economic assistance is provided to poorer regions, as proposed in this study.

Reaching out across the region

As this chapter has highlighted, the Asia-Pacific region has steadily been integrating

its markets for trade and investment, and to a certain extent for labour is now a good time to consolidate these initiatives and build on them a broader integrated market that would unleash the huge potential of efficiency-seeking industrial restructuring for creating value for all the participating economies and subregions. A key factor supporting a successful integration is infrastructure, which is the focus of the next chapter.

ENDNOTES

¹ ESCAP, 2011a and 2011b.

² An important caveat is that this indicator does not take into account the costs of trade and transportation.

³ Among the earliest initiatives is UNCTAD's TRAINS which is accessible through the World Bank's WITS software application but it has not been regularly updated. A multiagency initiative (MAST) was started in 2006. A report on pilot studies, with new definition and classification of NTMs was issued in 2010 (see UNCTAD, 2010b; and Basu, Kuwahara and Dumesnil, 2011).

⁴ For details, see ESCAP, "Facilitating Intraregional Trade", in Asia-Pacific Trade and Investment Report 2011: Post-crisis Trade and Investment Opportunities (Bangkok, 2011a), pp. 89-100.

⁵ ADB and ESCAP, 2009.

⁶ The comprehensive trade cost estimate is an objective measure based on macroeconomic data rather than perception survey data. It is a very broad aggregate measure of international trade costs including, inter alia, direct and indirect costs related to fulfilling regulatory import and export requirements as well as costs resulting from differences in currencies, languages, culture and geographical distance. Domestic and international shipping and logistics costs associated with imports and exports are also included.

⁷ Duval and Utoktham, 2011a.

⁸ Duval and Utoktham, 2011b.

⁹ For more details on this issue, see ESCAP, 2011c.

¹⁰ Source: WTO and UNCTAD, WTO International Trade Statistics online (accessed 12 April 2012).

- ¹¹ All these numbers are underestimates because of the limited number of trading partners for which data are available.
- ¹² UNWTO, "UNWTO and Asia Pacific Ambassadors Discuss Global Tourism Issues," March 2012. Available from <http://asiapacific.unwto.org/en/news/2012-03-23/unwto-and-asia-pacific-ambassadors-discuss-global-tourism-issues>.
- ¹³ Because of the non-standardize reporting across countries, it was not possible to obtain information for all the Asia-Pacific subregions. For example, the Pacific island developing economies and the countries of North and Central Asia other than the Russian Federation were not included systematically by all reporting countries. Thus, the share of tourism arrivals originated in the region reported in the table underestimates the actual share.
- ¹⁴ Available from www.uis.unesco.org/Pages/default.aspx.
- ¹⁵ Denisenko, 2010.
- ¹⁶ Mahapatra et. al., 2011.
- ¹⁷ ESCAP, 2012.
- ¹⁸ The member States of the GCC are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates.
- ¹⁹ Regional Thematic Working Group on International Migration Including Human Trafficking, 2012; Huguet, Chamrathirong and Kerry Richter, 2011.
- ²⁰ Denisenko, 2010.
- ²¹ Ivakhnyuk, 2006.
- ²² ESCAP, 2010a.
- ²³ Hayes, 2010.
- ²⁴ Regional Thematic Working Group on International Migration Including Human Trafficking, 2012.
- ²⁵ Boston Consulting Group, "Global Challengers 2011". Available from https://www.bcgperspectives.com/content/articles/globalization_companies_on_the_move_2011_global_challengers/.
- ²⁶ Kumar, 2008.
- ²⁷ Ramamurti, 2011.
- ²⁸ ESCAP, 2011a.
- ²⁹ ESCAP calculations based on ASEAN, 2006 and 2011a.
- ³⁰ Available from www.vietpartners.com/Statistic-fdi.htm.
- ³¹ Majumdar and Verma, 2008.
- ³² Singapore has dominated South-East Asia's FDI to India. It accounted for 81 per cent of it in 2010.
- ³³ This issue may be revisited to examine if India's neighbouring countries may also use Mauritius as an intermediary to facilitate their investment to India. In addition to India, Mauritius holds the double tax treaties with four South Asian countries, i.e., Bangladesh, Nepal, Pakistan and Sri Lanka (LOWTAX, 2011).
- ³⁴ fDi Intelligence, 2011.
- ³⁵ Bangladesh, Board of Investment, 2012.
- ³⁶ IMF, Coordinated Direct Investment Survey 2011. Available from <http://cdi.imf.org/> (accessed 4 January 2012).
- ³⁷ Salidjanova, 2011.
- ³⁸ OECD, 2011.
- ³⁹ UNCTAD, 2011a.
- ⁴⁰ According to UNCTAD, 2011d.
- ⁴¹ UNCTAD, 2011a.
- ⁴² Pacific Trade and Invest, 2010.
- ⁴³ Wesley, 2011.
- ⁴⁴ Available from www.state.gov/r/pa/ei/bgn/2797.htm#econ.
- ⁴⁵ Available from www.pacifictradeinvest.com/wp/?p=278.
- ⁴⁶ ESCAP calculations based on UNCTAD, 2011a.
- ⁴⁷ IMF, Coordinated Direct Investment Survey 2011. Available from <http://cdi.imf.org/> (accessed 4 January 2012).
- ⁴⁸ Hoekman 2011; Baldwin, 2011.
- ⁴⁹ Trejos, 2005.
- ⁵⁰ ESCAP, 2011a.

⁵¹ The 15 regional trade agreements include also three plurilateral cross-continental trade agreements. For more details, see Asia-Pacific Trade and Investment Agreements Database (APTIAD), <http://www.unescap.org/tid/aptiad/>.

⁵² See Kumar, 2007a.

⁵³ See Kumar, 2007b.

⁵⁴ see Kawai and Wignaraja, 2010.

⁵⁵ For more details see Duval, 2011.

⁵⁶ SAARC Secretariat. Available from http://www.saarc-sec.org/areaofcooperation/detail.php?activity_id=47, and http://www.saarc-sec.org/areaofcooperation/detail.php?activity_id=42.

⁵⁷ The CBTA was signed by Lao People's Republic, Thailand, and Viet Nam in 1999. Subsequently, Cambodia (2001), China (2002) and Myanmar (2003) acceded to the CBTA. For a recent critical view of the degree of implementation of the CBTA, see e.g. Greater Mekong Subregion Business Forum, "Articles of Association of the Greater Mekong Subregion Freight Transport Association (GMS – FRETA)", November 2011.

⁵⁸ See chapter three for more information on cross-border and transit facilitation issues.

⁵⁹ The members of these four agreements are the following. AFTA: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam; ECOTA: Afghanistan, Azerbaijan, the Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan; PACER-Plus: Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu; SAARC: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.



Photo by R. Manowalailao

UN Photo - Kibae Park



Three

Building seamless connectivity



Economic integration depends critically on the development of infrastructure that will strengthen connectivity both within and between countries, freeing up the flows of goods and services, investment, people and ideas.

Growth in Asia and the Pacific has been strongly influenced by the quality of infrastructure. Economies that develop better infrastructure grow faster.¹ Investment in infrastructure not only increases an economy's capital stock but also broadens the reach of economic activities and trade, creating opportunities for the realization of economies of scale. This, in turn, lowers production and distribution costs, which allows more goods to reach more people across greater geographic areas. The gains appear to be greatest for large-scale civil engineering projects, such as those related to transport and utilities.² But even small, low-cost investments can have significant impacts, especially when they reach out to remote or poorer areas.

Though more difficult to quantify, countries also gain further benefits from infrastructure development through network externalities, which contribute to growth by allowing economies of specialization, encouraging the clustering of businesses and facilitating information exchanges. Moreover, in the Internet age, connectivity expands in many dimensions beyond physical links to encompass more complex and dynamic relationships that affect how networks operate.³ Even small connections between one network and another can quickly create wider, more valuable networks.⁴ That is why the issue of ICT infrastructure development is quickly gaining importance in discussions about regional connectivity. The region also has vast potential to utilize its energy resources more efficiently through the interconnection of producers and consumers of energy by oil and gas pipelines and electricity grids. Such interconnection could be cost-effective and offer opportunities in reducing the cost of energy, which is a critical input for development.

There are clearly wide disparities in the breadth and quality of infrastructure between countries of the region. From the perspective of regional connectivity, the gap between the few wealthier countries and the middle- and lower-income countries is hindering the full participation of countries in the region's economic dynamism. Improving regional connectivity will allow countries in Asia and the Pacific to take full advantage of the region's diverse natural endowments and productive capacities.

Against this backdrop, this chapter will explore issues of connectivity for three major sectors, namely transport, energy and ICT.

Transport

Transport is the backbone of economic activity and social development. Since ancient times, the availability and cost of transport have influenced both the location of trade centres and the volume of trade. Large-scale increases in production and trade have been made possible with advances in transport, such as the diffusion of containerization. Most governments recognize that the responsibility for developing transport infrastructure lies with them, and are therefore investing in ambitious medium- to long-term transport strategies and programmes. However, when it comes to improving connectivity, each mode of transport – roads, railways, maritime shipping and aviation – has its own physical and operational characteristics which require different considerations.

Aviation and maritime shipping, for example, essentially move people and goods from point-to-point without intervening infrastructure. Consequently, investment in these sectors has focused on individual airports and maritime ports. In the past century, maritime ports dominated international trade and, as a result, attracted investment from both the public and the private sector. Land-based modes and inland water transport, on the other hand, require the development of roads, railway tracks and inland waterways across vast geographic areas. The sheer scale of these networks means that the cost of maintaining them is much greater than that

for airports and maritime ports. Non-physical barriers to the movement of people and goods are also greater for overland crossings as compared with maritime ports or airports because the risk of damage and theft is higher and more difficult to monitor.

In the Asia-Pacific region, the maritime and aviation sectors are relatively well connected to their respective global networks. There is also a higher degree of private sector involvement in developing and managing infrastructures in these sectors. From a regional perspective, therefore, the priority should be given to the development and upgrading of land-based transport infrastructure. Tremendous efficiency gains could also be realized by removing non-physical barriers to transport and improving intermodal connectivity. Both of these steps would improve the efficiency of transport services and raise the utilization rates of existing infrastructure.

Maritime transport

The expansion of international trade in Asia and the Pacific has depended on building the capacity and efficiency of its major seaports, particularly container ports. For the past two decades, the region has dominated global container handling, led first by Hong Kong, China and Singapore in the early 1990s and followed by China from the mid-1990s to today. In 2011, the world's eight busiest container ports were in the ESCAP region: Shanghai (China); Singapore; Hong Kong, China; Shenzhen (China); Busan (Republic of Korea); Ningbo (China); Guangzhou (China); and Qingdao (China).⁵

Asia's most important liner routes, by volume, still run from Asia to Europe and North America. But there has been a substantial increase in intra-Asian shipping, particularly between China, Japan and the Republic of Korea, and between these countries and South-East Asia. Almost all the region's coastal countries are now linked by direct shipping services or by transshipment and transit operations through hub ports. Nevertheless, there is significant intercountry variation; shipping connectivity is still poor between many neighbouring countries.⁶ The Pacific island developing economies have the added disadvantage of

being located at a long distance from the fast-growing economies in the rest of the region. Because of their remoteness, relatively small populations and low trading volumes, it is difficult for shipping companies to maintain regular services to them.

One measure of shipping connectivity is the United Nations Conference on Trade and Development (UNCTAD) Liner Shipping Connectivity Index, which includes measures of the number and capacity of ships and the extent of services.⁷ This shows that between 2006 and 2011, shipping connectivity increased markedly in a number of the Asia-Pacific economies. The highest value of the index as of 2011 is for China, followed by Hong Kong, China; and Singapore (figure III.1). The value of the index has grown spectacularly fast in Viet Nam, which as of 2011 was ranked seventh in the region.

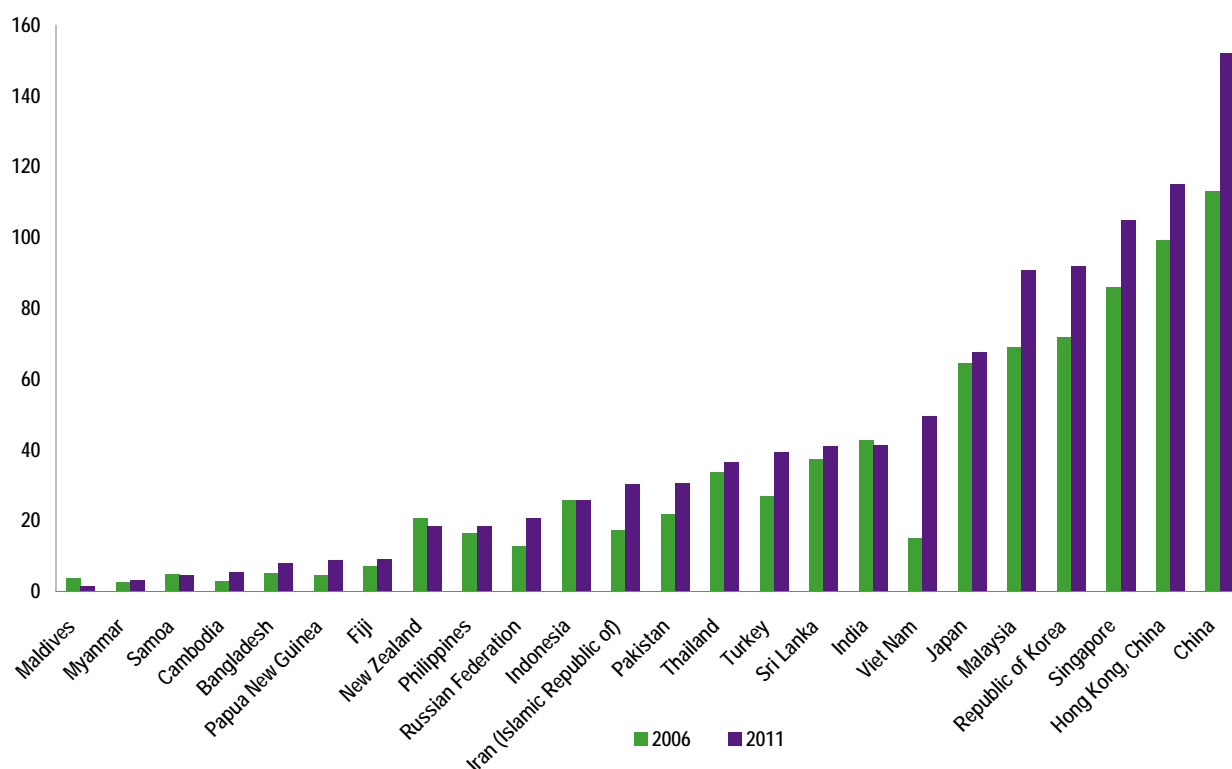
An ESCAP study which analyses differences in trade costs found that liner shipping connectivity accounts for about 25 per

cent of the changes in trade costs that are unrelated to non-tariff policies.⁸ Thus, as a country's liner connectivity index improves, the cost of shipping declines, boosting competitiveness and increasing container traffic. Data presented in table III.1 support this observation, suggesting that as liner connectivity increases, so does the volume of container traffic.⁹ Conversely, those countries which have witnessed a decline in liner shipping connectivity, such as several island developing countries in the Pacific are likely to have faced higher trade costs in 2011.

Governments can attract more ships, and a wider range of ships, by investing and maintaining their maritime ports. They may also improve competitiveness by improving the efficiency of onward land transport, particularly through railways. More ambitious programmes of upgrading and modernization could be accelerated, however, through the greater participation of the private sector in the development of ports and provision of port services.

FIGURE TITLE

III.1. UNCTAD liner shipping connectivity index, 2006 and 2011



Sources: ESCAP based on UNCTAD, *Review of Maritime Transport* (Sales No. E.09.II.D.11), *Review of Maritime Transport* (Sales No. E.10.II.D.4), *Review of Maritime Transport* (Sales No. E.11.II.D.4); and *Containerisation International, Containerisation International Yearbook 2011* (London, 2011).

Note: The index has five components: (a) the number of ships; (b) the total container-carrying capacity of those ships; (c) the maximum vessel size; (d) the number of services; and (e) the number of companies that deploy container ships on services from and to a country's ports.

Meanwhile, to address the issue of insufficient services, countries can achieve economies of scale through collective shipping arrangements. This has been piloted in the Pacific with the establishment of the Micronesian Shipping Commission, which aims at improving regulations and encouraging competition of shipping services in the Marshall Islands, the Federated States of Micronesia and Palau. In 2010, Kiribati, Marshall Islands, Nauru, and Tuvalu launched a similar arrangement called the Central Pacific Shipping Commission. While these initiatives are still relatively new, there is scope to improve connectivity, particularly for small island developing economies through practical and collective approaches.

Air transport

Despite the global economic downturn, there have been increases both in the number of

air passengers and the volume of air cargo. Between November 2010 and November 2011, for example, international passenger traffic on Asia-Pacific airlines increased by 4 per cent to 15.7 million.¹⁰ Much of this reflects strong intraregional traffic, which between 1982 and 2009 rose on average by 5.1 per cent annually to 101.7 million passengers.¹¹ For example, passenger traffic increased by 8 per cent per annum or more between 2005 and 2009 in regional routes, such as Singapore-Jakarta, Hong Kong-Seoul or Singapore-Kuala Lumpur.

Air freight has also grown substantially, especially from China, Viet Nam, Malaysia and the Russian Federation. Freight, however, has been more sensitive than passenger traffic to the global economic slowdown: between November 2010 and November 2011 demand per freight ton kilometre declined by 6.5 per cent.¹²

TABLE TITLE

III.1. Liner shipping connectivity index and container traffic for selected countries

	UNCTAD liner index			Container traffic		
	2006	2011	Growth rate 2006-2011 (per cent)	2006	2010	Growth rate 2006-2010 (per cent)
Bangladesh	5.3	8.2	9.0	902	1 350	10.6
Cambodia	2.9	5.4	12.8	..	224	..
China	113.1	152.1	6.1	84 811	128 544	11.0
Fiji	7.2	9.2	5.0	..	..	..
Hong Kong, China	99.3	115.3	3.0	23 539	23 532	0.0
India	42.9	41.5	- 0.7	6 141	8 942	9.8
Indonesia	25.8	25.9	0.1	4 316	8 960	20.0
Iran (Islamic Republic of)	17.4	30.3	11.7	1 529	2 592	14.1
Japan	64.5	67.8	1.0	18 470	..	..
Malaysia	69.2	91.0	5.6	13 419	17 976	7.6
Maldives	3.9	1.6	- 16.1	..	..	..
Myanmar	2.5	3.2	4.9	..	166	..
New Zealand	20.7	18.5	- 2.2	1 807	..	..
Pakistan	21.8	30.5	7.0	1 777	2 151	4.9
Papua New Guinea	4.7	8.8	13.6	..	268	..
Philippines	16.5	18.6	2.4	3 676	5 048	8.3
Republic of Korea	71.9	92.0	5.1	15 514	18 488	4.5
Russian Federation	12.8	20.6	10.0	2 266	3 091	8.1
Samoa	5.1	4.6	- 2.2	..	..	..
Singapore	86.1	105.0	4.1	24 792	29 178	4.2
Sri Lanka	37.3	41.1	2.0	3 079	4 000	6.8
Thailand	33.9	36.7	1.6	5 574	6 648	4.5
Turkey	27.1	39.4	7.8	3 683	5 508	10.6
Viet Nam	15.1	49.7	26.8	3 000	5 474	16.2

Source: ESCAP based on UNCTAD, *Review of Maritime Transport* (Geneva, 2009, 2010a and 2011a), and *Containerisation International Yearbook 2011* (London, 2011).

Note: Figures for 2010 container traffic are preliminary estimates.

The increase in passenger and cargo transported by air is partly due to the improvement of air transport connectivity in the region. During the past decade, more low-cost carriers have entered the market, flight frequencies have increased, and countries have invested in new and existing airports. Most countries are now linked, either directly or through hubs, and have taken progressive steps towards developing air service agreements and liberalizing their air transport markets. The most notable example from the region is the ASEAN Multilateral Agreement on the Full Liberalisation of Air Freight Services, adopted in Manila on 20 May 2009. This Agreement is one of the components of the Roadmap for Integration of Air Travel Sector and the Action Plan for ASEAN Air Transport Integration and Liberalisation 2005-2015, adopted at the Tenth Transport Ministers Meeting in Phnom Penh in 2004.

It is clear that increasing connectivity boosts traffic: one study suggests that improvements in air connectivity have resulted in a 22 per cent increase in global traffic.¹³ Nevertheless, measuring connectivity, even in a well-regulated industry such as aviation, is still challenging. One index of air connectivity suggests that the world's most connected countries in 2007 were the United States of America and Canada, while the most connected Asian countries were China, Japan, Singapore, and the Republic of Korea.¹⁴ But this index ignores connections through hubs. Even the United States, for example, has direct air links with only 101 out of 210 possible countries. A more useful indicator may be the index developed by the International Air Transport Association (IATA), which is based on flight frequency, seats per flight, number of destinations and a weighting factor to measure the importance of each airport.¹⁵

Air traffic in Asia and the Pacific is poised to continue to grow strongly. For the period 2009-2020, the International Civil Aviation Organization estimates that passenger aircraft movement will increase annually by 5.6 per cent, while between 2009 and 2014, passenger traffic on many intraregional routes is projected to increase annually by 6 to 7 per cent.¹⁶ For many countries in the region,

per capita air travel is still very low, so any improvement in connectivity that reduces the time and cost for air travel could stimulate a considerable increase. But while investment in airports is important, governments should also consider the transport infrastructure needed to link them to their production and population centres by developing their land-based transport networks.

Land transport

Maritime shipping has historically been the main mode of transport in international trade due to its ability to transport large volumes at low cost per unit of freight. As a result, land transport development patterns have tended to lead to major urban or trading centres in coastal areas. Thus, intercountry land transport linkages are particularly underdeveloped in Asia and the Pacific region. In recent decades, however, governments across the region have made considerable efforts to extend national road and railway systems and in some cases, inland waterways, both within their countries and by connecting to their neighbours.

Much of this investment has been directed into the road sector. Governments have invested in major national roads, as well as rural road networks.¹⁷ Some major rural road development initiatives have been implemented in, for example, Bangladesh, China, India and Sri Lanka. In addition, the Intergovernmental Agreement on the Asian Highway Network, adopted under the auspices of ESCAP on 18 November 2003, established technical specifications for the regional road network. The Asian Highway Network now extends through 32 member States and comprises 142,000 km of highways (figure III.2).¹⁸ Currently, about 32 per cent of the network is classified as Primary and Class I standards, the two highest categories of road class.

However, there are still 11,500 km of Asian Highway routes that need to be upgraded to meet the minimum standards. Although the network does not have "missing links", the poor quality of some road segments is a deterrent for international transport because it increases transport time and operating costs for

vehicles. Countries are also struggling to maintain their Asian Highway routes due to limited finances and institutional capacity. Furthermore, as in the case of other infrastructure networks, it is often difficult to fund cross-border projects unless such projects are part of a broader integration strategy, such as the Almaty-Bishkek Regional Road Rehabilitation project funded by ADB under the Central Asia Regional Economic Cooperation (CAREC) programme, or more recently the Northern Economic Corridor of the Greater Mekong Subregion. This underlines the critical role played by regional cooperative frameworks, such as the Intergovernmental Agreement on the Asian Highway Network, as well as the many subregional initiatives promoted by subregional organizations and multilateral financing institutions.

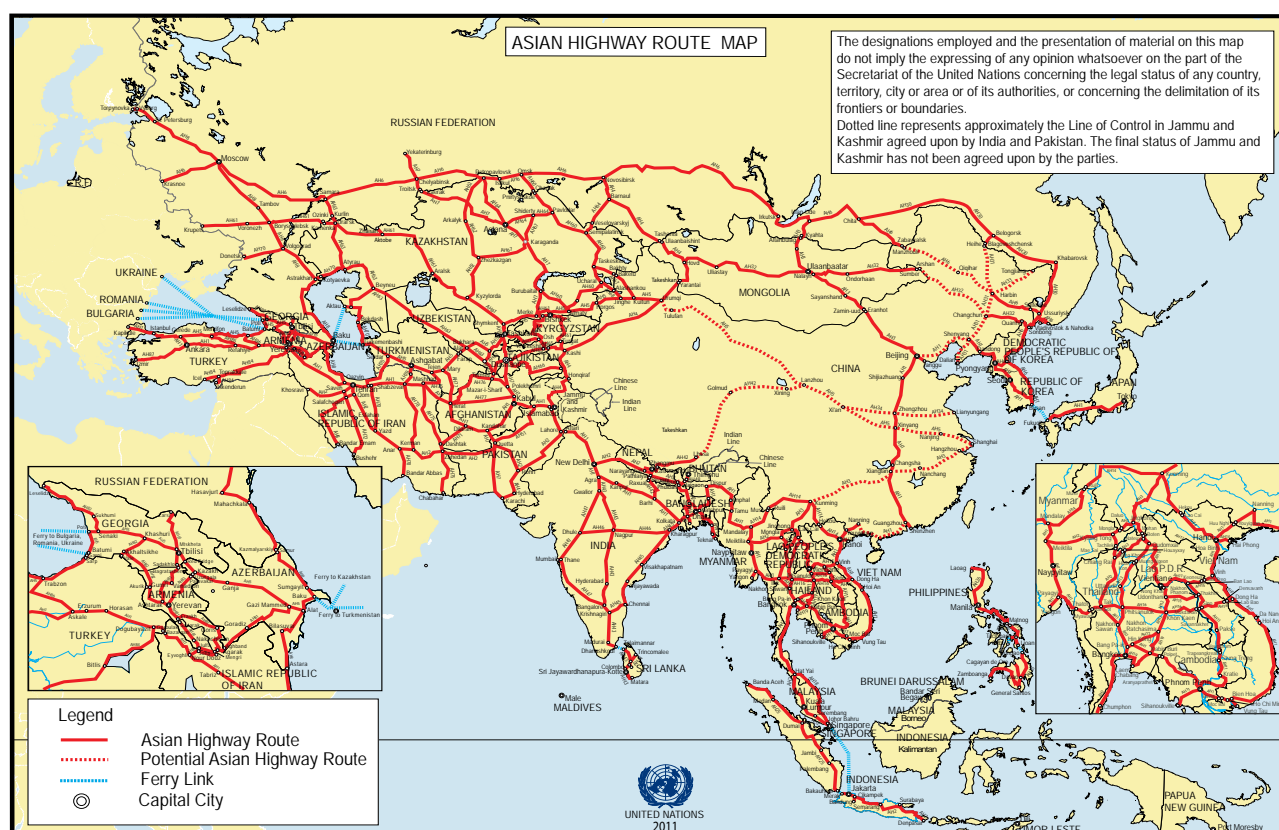
The situation is similar for railways. Some countries are expanding and improving their networks through the construction of new tracks, double tracking or electric signalling, but the region as a whole has yet to realize its rail potential. The Intergovernmental

Agreement on the Trans-Asian Railway Network, which entered into force in 2009,¹⁹ has raised the profile of the region's railways and is encouraging governments and financing institutions to increase investment in the sector. Other subregional and regional initiatives have also been catalytic in improving railway network connectivity. For example, the Master Plan on ASEAN Connectivity launched in 2010 has renewed interest in the Singapore-Kunming Rail Link (SKRL) Project. As part of this project, the towns of Thanaleng in the Lao People's Democratic Republic and Nong Khai in the north of Thailand were linked by rail, providing the landlocked country easier access to the maritime ports of Thailand.

However, railways face the challenge of missing links, which prevent the network from functioning as a continuous system (table III.2 and figure III.3). According to ESCAP estimates, these constitute about 10,500 km of rail track, mostly located in the ASEAN subregion. While these links can be filled by transshipments to trucks, shippers are discouraged from using

FIGURE TITLE

III.2. Asian Highway network



Source: ESCAP.

III.2. Missing links in the Trans-Asian Railway network, end 2011

Link	Countries concerned	Distance (km)	Estimated cost (millions of US dollars)
Central Asia and the Caucasus region, including the Islamic Republic of Iran and Turkey			
Gagarin - Meghri	Armenia – Islamic Republic of Iran	469.6	2 000.0
Tatvan – Van	Turkey	240.0	..
Qazvin - Rasht - Anzali - Astara	Islamic Republic of Iran	370.0	969.0
	Azerbaijan	8.2	12.4
	Total	378.2	981.4
Kars - Akhalkalaki	Turkey	76.0	..
	Georgia	29.0	..
	Total	105.0	420.0
Uzgen - Arpa - Torugart - Kashi	Kyrgyzstan	270.0	2 000.0
	China	..	..
Arak - Khosravi - Khaneghein	Islamic Republic of Iran – Iraq	566.0 (up to border)	820.0
Sangan - Herat	Islamic Republic of Iran	77.0	78.0
	Afghanistan	114.0	75.0
		(61.0 + 53.0)	(for 61.0km)
	Total	191.0	153.0
China/North/North-East Asia			
Thannaleng - Kunming	Lao People's Democratic Republic	570.0	1 000.0
	China	599.0	2 980.0
	total	1 169.0	3 980.0
Lashio - Dali	Myanmar	142.0	480.0
	China	350.0	2 162.0
	Total	492.0	2 642.0
Denchai - Tachilek - Jinghong	Thailand	326.0	..
	Myanmar	195.0	..
	China	141.0	..
	Total	589.0	2 138.0
Nariin Sukhait - Numrug, with links to Chaibalsan and border of China	Mongolia	2484.0	..
South-East Asia			
Sisophon - Aranyaprathet	Cambodia	48.0	80.0
	Thailand	6.0	0.5
	Total	54.0	80.5
Bat Deng - Trapeang Se / Loc Ninh - Hanoi	Cambodia	257.0	480
	Viet Nam	129.0	949.0
	Total	385.0	1 429.0
Vientiane - Mu Gia - Vung An	Lao People's Democratic Republic	450.0	2 342.0
	Viet Nam	119.0	143.0
	Total	569.0	2 485.0
Bua Yai - Savannakhet	Thailand	283.0	908.0
	Lao People's Democratic Republic	4.0	6.3
	Total	287.0	914.0
Ubonratchatani - Pakse - Savannakhet - Devsavanh - Dong Ha	Thailand	90.0	288.0
	Lao People's Democratic Republic	415.0	710.0
	Viet Nam	84.0	226.0
	Total	589.0	1 224.0
Namtok - Thanpyuzayat	Thailand	153.0	491.0
	Myanmar	110.0	246.0
	Total	263.0	737.0
South Asia			
Dalbandin - Gwadar	Pakistan	515.0	1 250.0
Dohazari - Gundum	Bangladesh	129.0	300.0
Kalay - Jiribam	Myanmar	127.0	98.0
	India	219.0	649.0
	Total	346.0	747.0

Source: ESCAP.

Note: .. indicates that data are not available.

rail because of the longer transit time and higher costs. In addition, interoperability across borders remains a problem.

Given the expected growth in intraregional trade, as well as heightened awareness about the transport sector's contribution to climate change, the railways could capture a greater proportion of intraregional transport, particularly for freight. But there is a need to demonstrate this potential, for example, through demonstration runs of container block trains. The Economic Cooperation Organization (ECO) has been particularly active in this area, starting with demonstration runs between Istanbul and Almaty in 2002, followed by Islamabad and Istanbul via Tehran in 2009.

Countries can also increase rail connectivity by developing more inland container depots and dry ports with rail connections. The Navoi inland container depot in Uzbekistan, for example, now serves as a subregional air hub with rail links to Central Asia and Afghanistan. Similarly, Nepal has developed an inland container depot at Birgunj, which is connected to the vast Indian railway network.

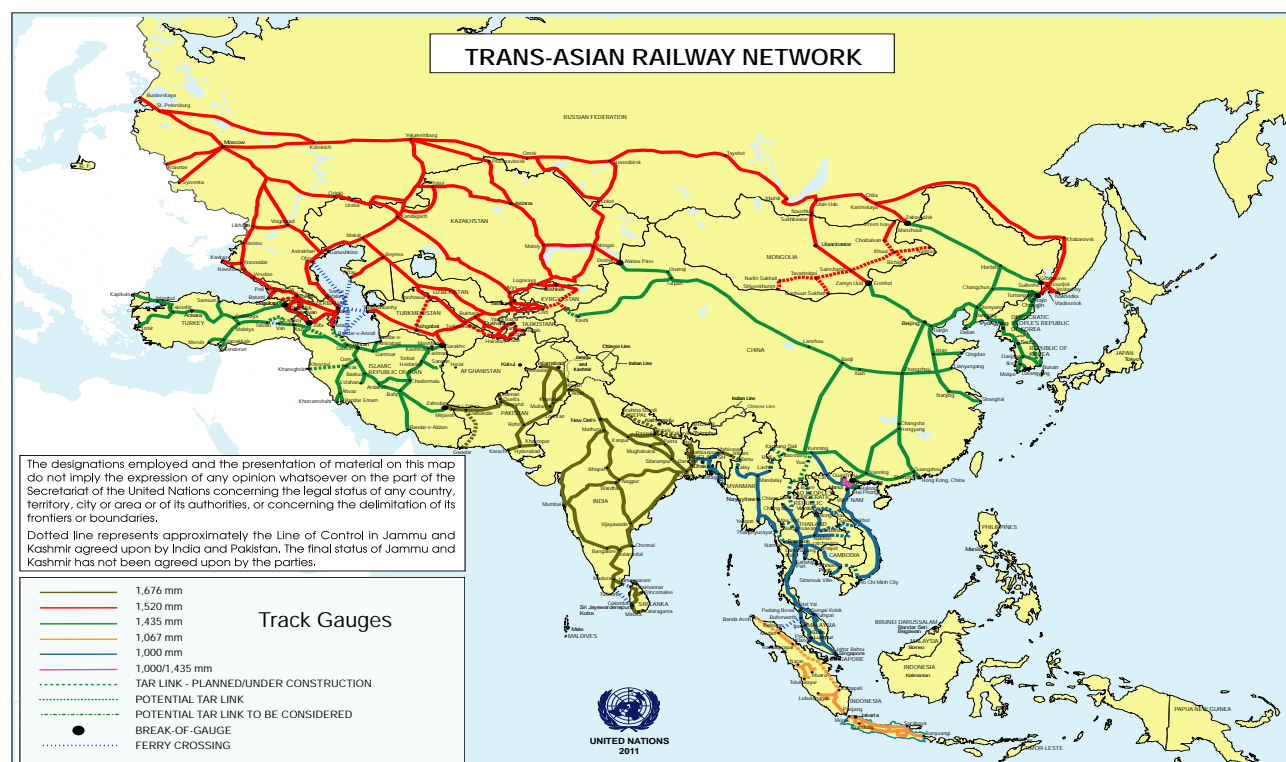
Cross-border and transit transport facilitation

Due to the increase in intraregional trade during the last two decades, countries have opened more border crossings and domestic routes for international transport, and are using bilateral and multilateral agreements on transport facilitation to improve the conditions for international land transport. Ambitious initiatives include the customs union among Belarus, Kazakhstan and the Russian Federation, joint customs controls between Georgia and Turkey and the modernization of border gates in Turkey. To deal with challenges of coordination among different agencies dealing with transport facilitation, many countries have set up national coordination mechanisms.

Nevertheless, cross-border and transit transport is still hampered by many non-physical barriers that lead to excessive delays, high costs and uncertainties. These are multiple technical standards, inconsistent and complex border-crossing procedures and excessive documentation. In addition, goods are often inspected on both sides of the borders by different authorities, and sometimes

FIGURE TITLE

III.3. Trans-Asian Railway network



Source: ESCAP.

TABLE TITLE

III.3. Status of accession of ESCAP regional members to the seven international conventions related to land transport facilitation listed in Commission resolution 48/11, as of 14 February 2012

Country or area	Convention on Road Traffic (1968)	Convention on Road Signs and Signals (1968)	Customs Convention on the International Transport of Goods under Cover of TIR Carnets (1975)	Customs Convention on the Temporary Importation of Commercial Road Vehicles (1956)	Customs Convention on Containers (1972)	International Convention on the Harmonization of Frontier Controls of Goods (1982)	Convention on the Contract for the International Carriage of Goods by Road (CMR) (1956)
Group I: Mainland Asia							
Afghanistan			x	x			
Armenia	θ		θ		θ	θ	θ
Azerbaijan	θ	θ	θ	θ	θ	θ	θ
Bangladesh							
Bhutan							
Cambodia				x			
China					x		
Democratic People's Republic of Korea							
Georgia	θ	θ	θ		θ	θ	θ
India		x					
Iran (Islamic Republic of)	x	x	x			θ	θ
Kazakhstan	θ	θ	θ		θ	θ	θ
Kyrgyzstan	θ	θ	θ	θ	θ	θ	θ
Lao People's Democratic Republic						θ	
Malaysia							
Mongolia	θ	θ	θ			θ	θ
Myanmar							
Nepal							
Pakistan	x	x					
Republic of Korea ^a	S	S	x		x		
Russian Federation	x	x	x		x	x	x
Singapore				x			
Tajikistan	θ	θ	θ			θ	θ
Thailand	S	S					
Turkey			x	θ	x	θ	θ
Turkmenistan	θ	θ	θ				θ
Uzbekistan	θ	θ	θ	θ	θ	θ	θ
Viet Nam							
Group II: Island countries							
Brunei Darussalam							
Indonesia	S	S	x		x		
Japan							
Maldives							
Philippines	x	x					
Sri Lanka							

Sources: United Nations Treaty Collection. Available from <http://treaties.un.org/Pages/Treaties.aspx?id=11&subid=A&lang=en>; and Summary list of International UNECE Transport Agreements and Conventions. Available from <http://www.unece.org/trans/conventn/legalinst.html>.

Notes: x = acceded before adoption of resolution 48/11, θ = acceded after adoption of resolution 48/11, S = signature

^a The Republic of Korea acceded to the Convention on Road Traffic (1949), while it remains as a signatory of the new version of the convention (1968).

even while in transit, rather than being inspected either at loading or unloading points. Experience has shown that unilateral measures have had a limited impact on transport facilitation, since gains on one side of the border may be lost on the other – thus, cooperation is essential.

Landlocked countries, which depend on intercountry land transport for much of their external trade, could benefit the most from multilateral facilitation; despite being connected to regional networks, they still depend on their transit neighbouring countries for their goods to reach sea ports and beyond.

Many organizations have been bringing stakeholders together to remove these barriers. ESCAP, for example, through resolution 48/11 adopted in 1992, has been

urging member countries to accede to seven international conventions related to land transport facilitation (table III.3).²⁰ To ensure that these efforts converge over the long run, the secretariat has prepared a Regional Strategic Framework for Facilitation of International Road Transport (box III.1). The framework was recently adopted by the Ministerial Conference on Transport held in Bangkok in March 2012. Its adoption by the member States will pave the way for dealing with non-physical barriers comprehensively, which is of critical importance to enhance trade and boost regional integration.

Dynamic effects of improved regional transport connectivity

Given the high cost of transport infrastructure development, governments should exercise

BOX III.1. Regional Strategic Framework for Facilitation of International Road Transport

The ESCAP Ministerial Conference on Transport held at Bangkok in March 2012 adopted the Regional Strategic Framework on Facilitation of International Road Transport. It consists of long-term, common targets as well as desirable strategies for fundamental elements of international road transport and essential facilitation approaches. This could help ensure convergence of efforts to facilitate transport by countries by avoiding inconsistencies and possible conflicts between different facilitation agreements and measures.

The framework identifies major challenges to international road transport and provides possible solutions for them. It covers road transport permits and traffic rights, visas for professional drivers and crew, temporary importation of road vehicles, third-party liability insurance, vehicle weights and dimensions, and vehicle registration/inspection certificates. It also includes measures to mitigate transport delay by promoting international conventions, coordinating legal instruments, applying new technologies, developing professional training, strengthening national coordination mechanisms, promoting joint border controls and economic zones at borders.

One of the important proposals in the framework is the establishment of a regional network of legal and technical experts to help countries upgrade the capabilities of their officials and experts, and provide professional support to the development of transport facilitation agreements, measures and projects.

Source: ESCAP.

a high degree of caution and also think strategically about the type of infrastructure they develop. The rationale for having intergovernmental agreements on the Asian Highway and Trans-Asian Railways is to allow countries to coordinate their infrastructure development, particularly for sections which lead to international borders. It is, however, not easy to assess the impact of such projects across more than one country.

Many studies have explored the impacts of changes in trade and transport costs on industrial distribution and subnational economies. An increasing number of such studies use computable general equilibrium (CGE) models to investigate the impact of various policies to improve transport connectivity within and across countries. The Institute of Developing Economies (IDE), for example, has developed a CGE model which uses data on the Asian Highway to look not only at the impact of physical infrastructure improvements on economic growth in Asia, but also at other factors which affect trade costs and therefore the choice of mode by business.

To demonstrate this approach, IDE conducted simulations on three routes which make up part of the Asian Highway network:

- AH1: Mae Sot (Thailand) – Mandalay (Myanmar) – Dhaka (Bangladesh) – Delhi (India);
- AH1 + AH2 Chiang Rai/Mae Sai (Thailand) – Mandalay (Myanmar) – North East India – Dhaka (Bangladesh) – Delhi (India) – Amritsar (India, near the border of Pakistan);²¹
- AH1 + AH14: Kunming (China) – Muse (Myanmar) – Mandalay (Myanmar) – North East India – Dhaka (Bangladesh) – Delhi (India).

The simulations consider construction and improvements in physical infrastructure, the implementation of custom facilitation measures and permitting through traffic in Myanmar and Bangladesh. Further details of the model and these simulations are included in the annex. The results are summarized in table III.4. They show that most regions included in the model are unaffected by these projects, and that these unaffected regions

tend to be the ones with the highest regional gross domestic products (RGDPs) per capita. As explained in the annex, gains and losses are defined as differences in the simulated RGDPs in 2030 between the baseline scenario and each specific project scenario. Because improvements in land routes typically create businesses and employment opportunities in the regions where these routes are located, some redistribution of economic activity and population towards these regions is possible, which, in turn, could adversely affect regions farther away from the improved routes.

Table III.4 shows that some districts are indeed negatively affected, but their average losses compared to the baseline scenario are very small, of the order of 0.3 to 0.4 per cent. In contrast, the gains of the positively affected regions are significantly larger, between 2.2 and 2.8 per cent. Interestingly, the positively affected regions have, on average, a lower RGDP per capita than the negatively affected regions, implying that these projects have positive distributional impacts, a result that is confirmed by the negative correlation coefficients between the gains in RGDP and the initial RGDPs per capita (no. 4 of table III.4).

The results of simulations using CGE models should be interpreted with caution as they depend on the assumptions and parameters of the model, but they can, nevertheless, provide a useful input for policy discussions. In principle, the results of the three simulations show that investments in the Asian Highway can have large net positive gains and favourable distributional effects, but that attention should also be given to anticipating and planning for possible negative effects in other regions.

Connectivity for energy security

Energy resources are distributed unevenly around the region. Asia and the Pacific has major energy exporters such as Australia, Indonesia, Kazakhstan and the Russian Federation along with large energy importers such as China, India, Japan and the Republic of Korea. Buoyant economic growth in the region has, therefore, been accompanied by an expansion in energy trade, which between

TABLE TITLE

III.4. Simulation model of benefits from three Asian Highway routes

	AH1	AH1 + AH2	AH1 + AH14
1. Non affected regions			
Number of regions	1 065	1 063	950
Average per capita RGDP	2 946	2 966	3 040
2. Negatively affected regions			
Number of regions	226	208	230
Average per capita RGDP	987	898	1 219
Average loss (per cent)	-0.3	-0.3	-0.4
3. Positively affected regions			
Number of regions	408	428	519
Average per capita RGDP	607	628	848
Average gain (per cent)	2.8	2.6	2.2
4. Correlation between change in RGDP and RGDP per capita	-0.099	-0.078	-0.105

Source: ESCAP based on S. Kumagai, "Geographical simulation analysis on the economic impacts of improved regional transport connectivity between ASEAN and India", background paper prepared for ESCAP, Bangkok, 2012.

Notes: Regional GDP per capita values are for the year 2005 and expressed in current US dollars. Average losses and gains are based on annual values in billions of US dollars of 2005 for the year 2030, the final one of the simulation period. The simulations use local administrative units ("regions") which differ in size and population from country to country. It should also be noted that the simulations do not take into account the cost of the infrastructure projects and only estimate percentage change relative to each other. The simulations only focused on specific sections of the Asian Highway.

2000 and 2010 grew by almost 60 per cent (figure III.4).²² The total volume of energy traded in 2010 – 3,056 million tons of oil equivalent (Mtoe) – represented almost 54 per cent of the region's primary energy consumption and more than a quarter of the world's total primary energy consumption. The largest increase, 126 per cent, was for gas, followed by coal at 106 per cent and oil at 33 per cent.

According to ADB, Asia-Pacific energy demand is projected to grow by 2.4 per cent a year during the next 20 years with the highest growth in East Asia at 4.8 per cent and South Asia at 3.5 per cent.²³ Total demand is expected to reach 7,215 Mtoe by 2030, compared to 5,380 Mtoe for total supplies, implying that the region has enormous potential for increasing energy trade.

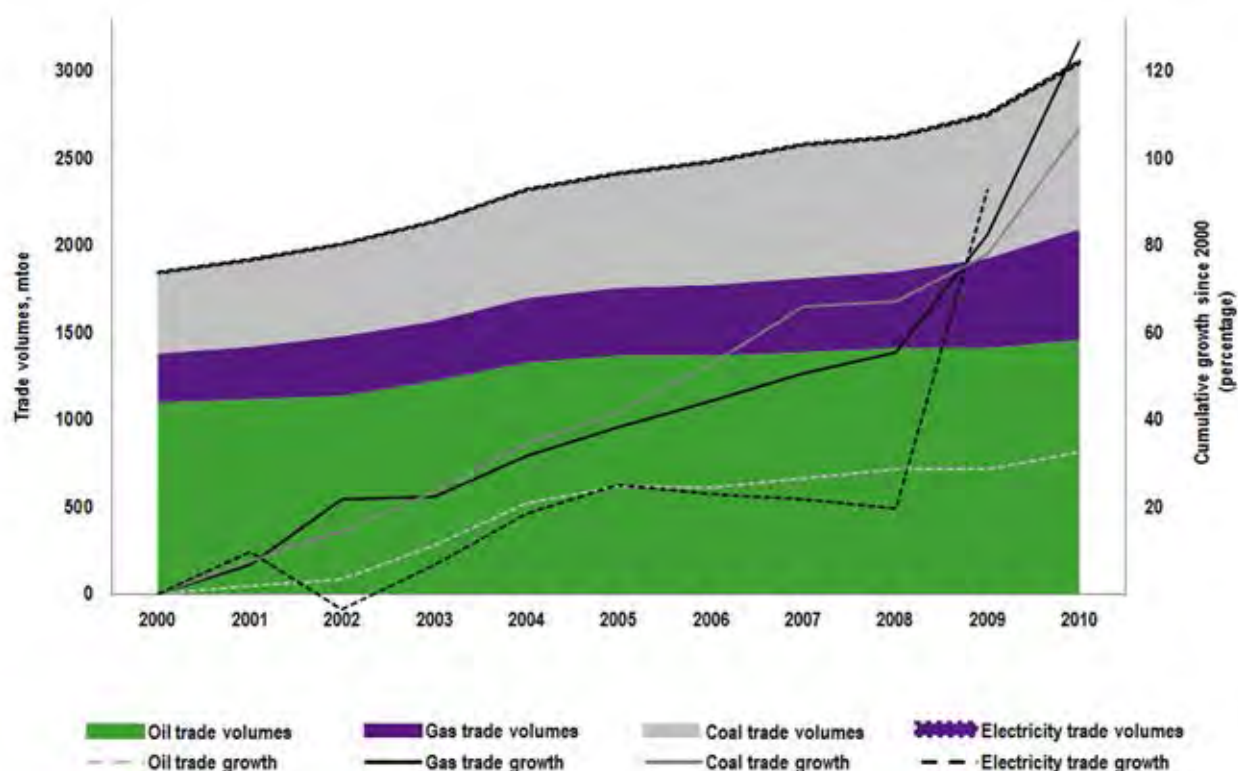
Nevertheless, intraregional energy trade faces a number of obstacles. The most important ones is the lack of energy supply infrastructure, which often prevents countries from accessing even their own domestic resources. Addressing this deficit would require vast investment; according to the International Energy Agency (IEA), between 2010 and 2035, the cumulative requirement could exceed \$32 trillion (2009 US dollars). Another impediment is the lack

of a regional agreement setting out consistent rules for energy trade. There are also geopolitical and security considerations that discourage investors from exploiting potentially profitable opportunities.

Most energy trade involves the bulk transport of products, especially by sea and particularly in the case of liquefied natural gas (LNG). However, greater economies of scale could be derived from enhancing international physical energy infrastructure, such as cross-border energy grids and pipelines.

Cross-country energy infrastructure can be bilateral, as with the Nepal-India bilateral power trade or the Indonesia-Philippines pipeline gas trade, or subregional, as with the East Siberia-Pacific Ocean oil pipeline or the SAARC power grid (see box III.2). The following is a brief overview of recent developments on subregional energy infrastructure in Asia and the Pacific.

East and North-East Asia – The East Siberian and Sakhalin reserves of hydrocarbons in the Russian Federation offer opportunities for infrastructure development. In that regard, the Russian Federation has launched several pipeline projects, including the East Siberia Pacific Ocean pipeline, which will connect

III.4. Energy trade in the Asia-Pacific region²⁴

Source: ESCAP based on data from EIA online statistical data and BP Statistical Review of World Energy.

Note: Data of electricity trade for year 2010 is not available.

fields in Irkutsk to the Pacific ocean via China by pipeline,²⁵ a joint China-Russian Federation gas pipeline project, which will connect East-Siberian gas fields with China, and the development of the Russian Sakhalin project, which already supplies both oil and gas.²⁶ It is worth to note that important agreements were signed in 2011 to build a gas pipeline from the Russian Federation to the Republic of Korea through the Democratic People's Republic of Korea. The project aims to supply 12 billion cubic meters of natural gas annually, and is expected to cut the price of gas for the Republic of Korea by one-third, as compared to the current cost of delivering LNG from Sakhalin.²⁷ This would be a prime example of international cooperation furthering physical and economic connectivity.

North and Central Asia – The western part of the subregion forms a strategic corridor for the export of Caspian and Arab States oil and gas supplies to Europe, with Turkey serving as a connecting hub. The main pipeline trade projects in the subregion include the existing Blue Stream gas pipeline, the Baku-Tbilisi-

Ceyhan Export Oil Pipeline, the Baku-Supsa oil pipeline, the Baku-Tbilisi-Erzurum gas pipeline and the Tabriz-Ankara gas pipeline. Proposed projects include the Nabucco gas pipeline, the Persian gas pipeline and the Trans-Caspian gas pipeline that will connect Turkmenistan with Europe. A planned pipeline will also enable Turkey to send oil from Samsun on the Black Sea to the Ceyhan Oil Terminal. In addition, Turkey plans to develop a network of LNG terminals to export gas to European markets.²⁸

Central Asia has about 14 per cent of the oil reserves of Asia and the Pacific as well as 11 per cent of the gas reserves and 7 per cent of the coal reserves, making the subregion a key part of the Asia-Pacific energy landscape. The subregion's five States, as former Soviet Republics, are interlinked through electricity grids and pipeline systems that lead to the core consumer, the Russian Federation. Kazakhstan, with almost 3 per cent of the world's oil reserves, currently supplies international oil market: (i) by pipeline to the

Black Sea ports through the Caspian Pipeline Consortium and the Russian mainland pipeline grid, (ii) by barge, and through the Baku-Ceyhan pipeline, to the Mediterranean, (iii) by barge and rail to Batumi (Georgia) and (iv) by pipeline to China.²⁹ In 2010, Kazakhstan provided 2 per cent of the foreign crude oil supplies sent to China. Kazakhstan also exports gas to the Russian Federation and imports it from Uzbekistan through the Central Asia – Center (CAC) gas pipeline system, connecting Kazakhstan, Turkmenistan, Uzbekistan and the Russian Federation. An agreed expansion of the Western branch and a new parallel pipeline will give the system the total capacity to carry 78 billion cubic metres of natural gas per year.³⁰

Turkmenistan, with the world's fourth-largest gas reserves, exports to China, the Islamic Republic of Iran and the Russian Federation.

Major routes are the CAC pipeline through Kazakhstan to Russian Federation; the Korpezhe–Kordkuy pipeline,³¹ and the Central Asia-China gas pipeline. Another route will be the East-West pipeline, which will boost westward exports by transporting gas from the country's Dauletabad field through the Russian pipeline system or through the prospective Trans-Caspian pipeline to Turkey. Once completed, it will have the capacity to transport 30 billion cubic metres of natural gas per year. Another major new project is the Central Asia-China gas pipeline which extends from Turkmenistan to Xinjiang in north-west China, and is designed to carry 30 billion cubic metres of gas from Turkmenistan and 10 billion cubic metres from Kazakhstan. There was also an agreement in 2010 to construct a pipeline from Turkmenistan to India through Afghanistan and Pakistan.³²

BOX III.2. SAARC Energy Ring

Asia and the Pacific remains characterized by lack of access to modern services. South-Asia, in particular, has been an unenviable symbol of this inadequacy. More than 400 million people in the subregion continue to live without access to electricity. With a growing population and strengthening economies, energy cooperation among the eight SAARC countries, namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, is gaining recognition.

In order to promote cooperation among the SAARC member States, the Islamabad Declaration of the Twelfth SAARC Summit, held in January 2004, mandated South Asian energy cooperation including the concept of an energy ring, a common regional highway of energy within and across the region for the movement of energy (including both commodity and services), in a market-based environment that all participants would benefit from. The SAARC Energy Ring, endorsed by the member states as a dynamic and evolving concept, is perceived to reduce supply disruptions and delivery constraints in a sustainable manner.

To facilitate the creation of this energy ring, ministers of the SAARC member States decided recently to finalize the SAARC Intergovernmental Framework Agreement (IFA) for Energy Cooperation by June 2012.

Sources: IEA Electricity Information database, 2011. Available from www.esds.ac.uk/international/support/user_guides/iea/iea.asp; SAARC, 2009; and Shahiduzzaman, 2012.

In addition, there are good prospects for exporting hydroelectricity, particularly from the mountainous eastern regions of Kyrgyzstan, Tajikistan and Uzbekistan to neighbouring countries within and beyond the subregion. The proposed Central Asia Power System project aims to unite the Central Asian electricity grids.

South and South-West Asia – Countries in this subregion have very different energy endowments. The Islamic Republic of Iran, for example, has almost 10 per cent of the world's oil reserves and within Asia and the Pacific exports to China and Japan, as well as to India to which it supplies 11 per cent of the country's oil demand.³³ The country is also endowed with 16 per cent of the global gas which is exported primarily to Armenia, Azerbaijan and Turkey. The Islamic Republic of Iran also exports electricity to Afghanistan, Armenia, Iraq, Pakistan and Turkey and imports electricity from Azerbaijan and Armenia.

India's reserves of oil and gas constitute less than 0.7 per cent of the world's total. At present, over 50 per cent of its energy needs are met through abundant coal reserves with much of the rest met by importing oil, gas, coal and electricity. The subregion's main energy trade corridors will continue to be between the Islamic Republic of Iran, and between India and Turkmenistan.

There are also two long-standing pipeline projects. One is the Iran-Pakistan-India gas pipeline with an ultimate capacity of 55 billion cubic metres yearly.³⁴ This has been delayed several times due to geopolitical considerations, but in January 2011 the Islamic Republic of Iran announced that most of the work on its side had been completed and Pakistan is planning to finish its part by 2014.³⁵ Another project is the Turkmenistan-Afghanistan-Pakistan-India pipeline. This could deliver 33 billion cubic metres of gas yearly from Turkmenistan but has been challenged by the continuing unrest in Afghanistan and north-west Pakistan.

In addition, there could be substantial benefits from greater trade in electricity. Afghanistan, for example, could import hydro-generated supplies from Tajikistan or from heat-based

systems in Uzbekistan, Islamic Republic of Iran and Turkmenistan. This would allow Afghanistan, at least in the short- to medium-term, to concentrate on the reconstruction of its damaged distribution system rather than trying to attract investment for energy generation plants.³⁶ Pakistan could also import electricity, especially during the summer, from Kyrgyzstan and Tajikistan, and lines could also be extended to India, which could provide both countries more opportunities to meet peak demands. Meanwhile, Bhutan and Nepal could sell more electricity to India and start supplying Pakistan as well.³⁷ Energy systems optimization and two-way cross-border trade may also be cost-effective for Nepal, which could benefit from exporting its hydropower to India during the high-water season and importing thermal energy from India during the dry season. Myanmar has hydroelectric potential of around 40 million kW of which only 5 per cent has been developed and some of which could be exported to India. Moreover, interconnection among Bangladesh, Bhutan and Nepal through India could also be feasible, with a possible underwater cable to Sri Lanka.

South-East Asia – This subregion is unevenly endowed with energy resources. Brunei Darussalam, Indonesia, Malaysia, Thailand and Viet Nam together hold about 5 per cent of the Asia-Pacific region's oil reserves. Their production of 120 million tons of oil in 2010 covered around a half of the subregion's demand. The net exporters in the subregion are Brunei Darussalam, Timor-Leste and Viet Nam while the main net importers are Indonesia,³⁸ Singapore and Thailand.

South-East Asia is better endowed with natural gas. It had 6.7 trillion cubic metres of proven reserves in 2010, of which 82 per cent of it was in Indonesia and Malaysia. The subregion's gas production is one-third higher than consumption while its largest net importers are Singapore and Taiwan Province of China. The main gas export routes for the subregion are LNG deliveries to China, Japan, Kuwait, Mexico, the Republic of Korea and Taiwan Province of China and pipeline deliveries to Malaysia, Singapore and Thailand.

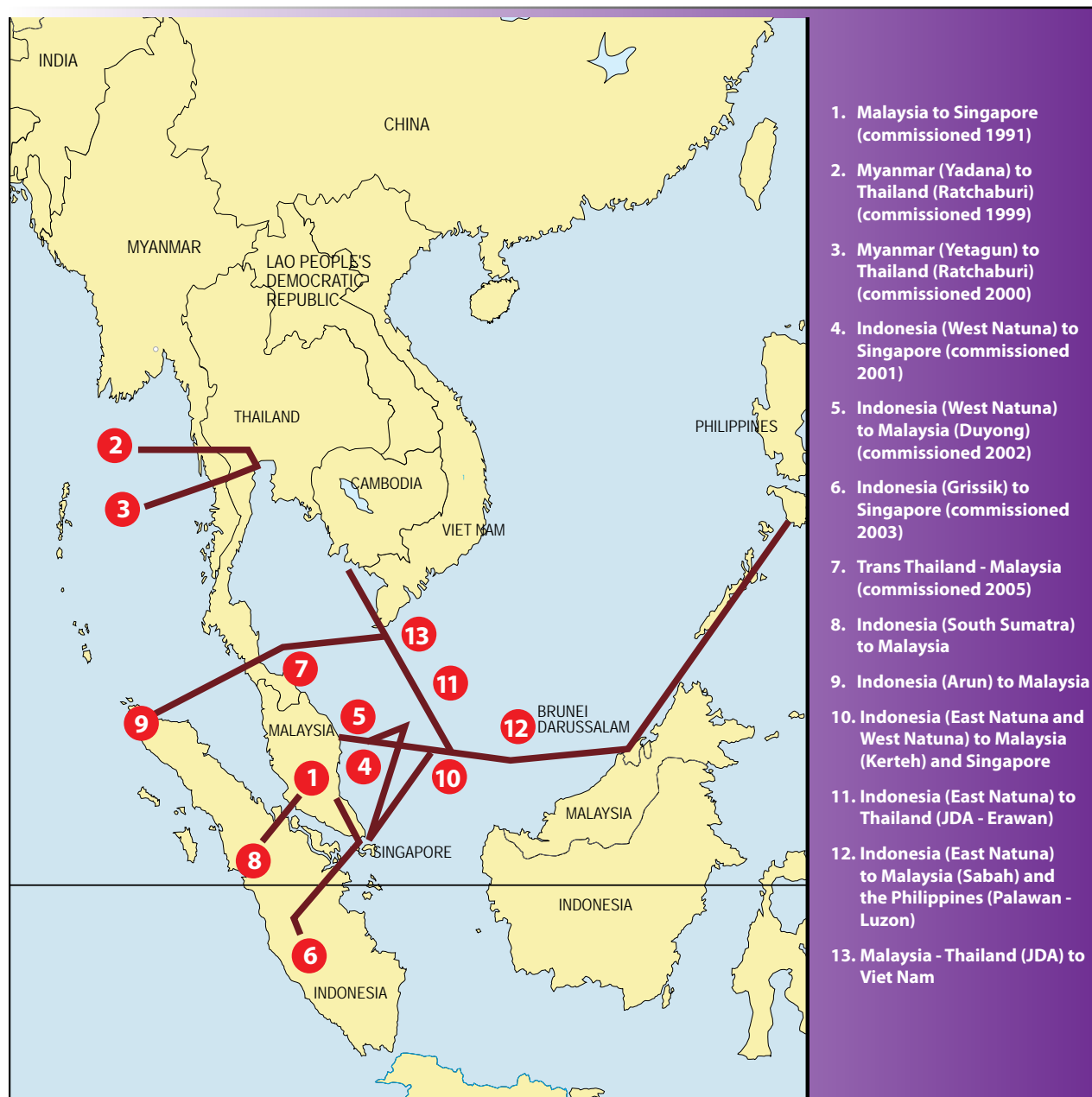
A major gas trade development project in the subregion is the Trans-ASEAN Gas Pipeline Project (TAGP). This project, which aims to link almost 80 per cent of the subregion's total gas reserves, includes the construction of 13 cross-border pipelines (figure III.5). It faces a series of technical as well as institutional and commercial challenges. The technical factors include harmonization and standardization of technical matters, gas quality specification, geo-sequestration of CO₂, and environmental regulation and standards. Institutional factors include law and regulation of cross-border trade, the title and ownership of the pipelines, the harmonization of tax systems and dispute

resolution mechanisms. Commercial factors include gas price mechanisms, demand stability, competition, commercial viability, financing transit rights, third-party access to common gas carriers and tax incentives.³⁹

In 2009, the economies of the subregion accounted for 3.2 per cent of Asia-Pacific electricity trade. The Lao People's Democratic Republic is the largest exporter of electricity while Thailand is the largest importer. The major programme promoting the interconnection of the power grids in South-East Asia is the ASEAN Power Grid, which has four ongoing interconnection projects and an additional

FIGURE TITLE

III.5. The proposed Trans-ASEAN gas pipeline grid



Source: ESCAP based on data from ASEAN Centre for Energy. Available from <http://aseanenergy.org>.

11 planned through 2015 (figure III.6). The total investment required is estimated at \$5.9 billion.⁴⁰

Australia – The country has the world's thirteenth-largest gas reserves and exports more than half its production to China, Japan, Kuwait, the Republic of Korea, and Taiwan Province of China. It is also one of the world's largest exporters of coal, accounting for over 28 per cent of the global exports; in 2010, almost 40 per cent of the value of its coal shipments went to Japan with most of the rest going to the Republic of Korea (15 per cent), China (12 per cent), India (10.9 per cent) and other Asian countries (9.5 per cent).

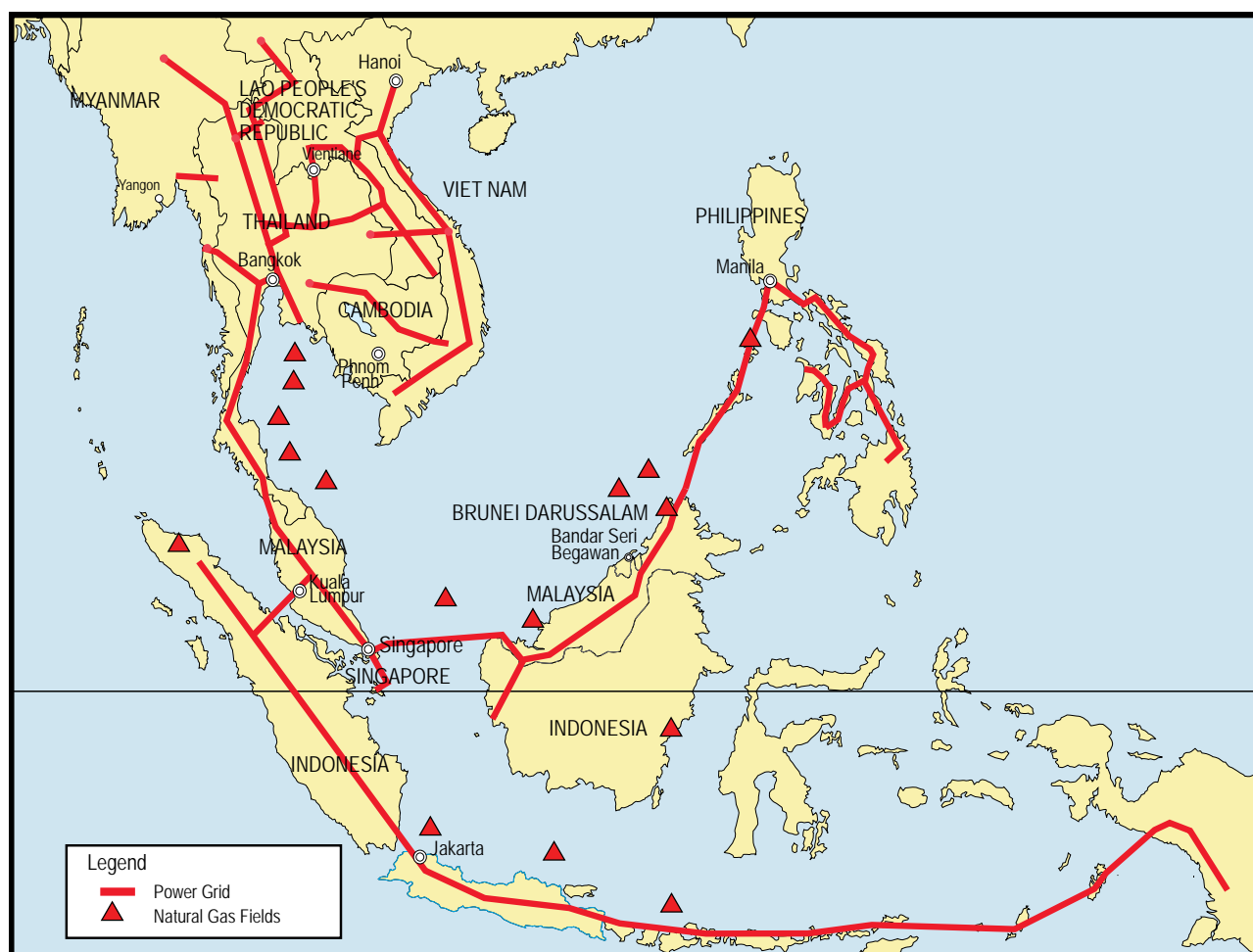
Pacific – According to an ADB study, fossil fuels accounted for 85 per cent of the total energy supply of the Pacific island Countries and Territories (PICTs) during 1990-2006, with biomass representing about 11 per cent of the total. However the subregional picture for

both supply and consumption is dominated by Papua New Guinea, which accounts for 60 per cent, and by Fiji for almost all of the remaining 40 per cent. Over the period as a whole, average energy consumption for the PICTs grew by 3.8 per cent annually, but this figure drops to only 1.1 per cent if Papua New Guinea and Fiji are excluded. For the other countries and territories, fossil fuels accounted for around 99 per cent of commercial energy use – compared with an average of 45 per cent for the Asia-Pacific region and about 34 per cent globally.

A high proportion of imported petroleum is used for transport – about 42 per cent in Papua New Guinea, 54 per cent in Fiji, and 75 per cent on average for others. The increase in the price of petroleum from 2002 to early 2008 cost most PICTs about 10 per cent of their gross national incomes, with the impacts falling disproportionately on

FIGURE TITLE

III.6. Proposed ASEAN Power grid



Source: ESCAP based on data from ASEAN Centre for Energy. Available from <http://aseanenergy.org>.

people with low incomes. Around one-fifth of petroleum consumption is used to generate electricity. Nevertheless, access is still low in some countries. The average is 30 per cent, ranging from less than 25 per cent in Papua New Guinea, Solomon Islands and Vanuatu, to more than 95 per cent in Cook Islands, Guam, Nauru, Niue, Northern Mariana Islands, Samoa, Tonga, Tokelau and Tuvalu.⁴¹

In April 2011, energy ministers of Pacific island economies endorsed the Framework for Action on Energy Security in the Pacific and its associated implementation plan. The framework promotes a "whole-of-sector" approach, based on the concept of "many partners – one team". It offers guidance to national efforts to achieve energy security and, in line with the principles of the Pacific Plan, also indicates how national plans can be complemented by regional services.

Towards a regional framework for energy connectivity

Because energy is a critical production input, and disruptions to either its availability or price can have serious economic consequences, energy security – understood as both a stable supply for importing countries and a stable demand for exporting countries – is a fundamental goal. As discussed above, the Asia-Pacific region includes both large energy-importing and large energy-exporting countries. Therefore, the region's energy security could be increased by enhancing physical connectivity and building institutions to promote cooperation between the region's energy importers and energy exporters.

While no region-wide institutions currently exist to promote connectivity, a number of subregional initiatives could serve as building blocks for a regional energy cooperation framework. A subregion that has built strong institutions over the years for cross-country energy cooperation is South-East Asia. Because, as mentioned above, this subregion includes both net exporters and net importers of energy, cooperation among them has been particularly fruitful.

The same rationale applies at the regional level, where the development of a regional

platform for energy cooperation could support the consolidation of subregional efforts to enhance energy connectivity and security. The Asian and Pacific Energy Forum organized by ESCAP (box III.3), which will meet at the ministerial level in May 2013 in Vladivostok, Russian Federation could provide the basis for institutional cooperation to harmonize policies, share knowledge and facilitate investments in physical connectivity.

Enhancing physical connectivity infrastructure across countries is one important objective of regional energy cooperation. As the number of pipelines planned or currently being constructed increases, it may be useful to identify missing infrastructure links and investment needs from a region-wide perspective, taking into account projected increases in the demand for energy within the region. In this respect, the modalities developed for the previously mentioned intergovernmental agreements on the Asian Highway and on the Trans-Asian Railway networks could provide useful models for the development of an integrated regional power grid linking multiple demand and supply sources or "Asian Energy Highway" (box III.4).

Regional cooperation could also be greatly beneficial for undertaking longer term multi-lateral projects, such as joint research on energy technologies relevant to the region, or for the formation of joint ventures of regional energy companies for joint prospecting and exploration. Further, regional cooperation could play an important role for the development, commercialization and dissemination of energy-efficient technologies, such as solar panels, wind turbines and other technologies that take advantage of renewable resources. Such an approach will be increasingly needed, given the region's economic dynamism, the imperative of making energy available to all and the expectation that the price of crude oil will continue to increase over the next two decades.⁴²

In order to promote energy cooperation and trade in the region, it is also necessary to develop a deep, liquid and transparent market for crude oil, petroleum products and gas. Building blocks of such a market include identifying a benchmark price for crude oil or marker crude that is relevant

for the region, obtaining support from key buyers and sellers to ensure adequate trading volumes, securing adequate physical storage infrastructure, establishing a conducive regulatory framework and being able to access robust financial markets to support hedging and trading.⁴³ Other fruitful areas for regional energy cooperation are sharing detailed information on demand, supply and inventory positions and building emergency response mechanisms by increasing physical supply security in Asia and the Pacific through strategic reserves and cross-border inventories.

Overall, a region-wide framework could encourage further investments in energy infrastructure with a more systematic involvement of the private sector, resulting in increasing volumes of intraregional energy trade and enhanced energy security for both importing and exporting countries.

Information and communications technology and digital connectivity

The growing importance of ICT supply chains in the region is not only contributing to increasing levels of trade and FDI but also boosting employment and the GDP. In China, for example, employment in the telecommuni-

cations sector has grown at an annual average rate of 3.7 per cent between 2002 and 2008,⁴⁴ compared to an annual average growth rate of 1 per cent for total overall employment in that country between 1995 and 2008. Similarly, Internet consumption and expenditures are estimated to contribute 4 per cent of GDP in Japan, 2.6 per cent in China, 3.2 per cent in India, and 4.6 per cent in the Republic of Korea.⁴⁵

In addition to its direct impact on trade, FDI, employment and income, the development of high-speed communication networks and improved Internet interoperability are enabling productivity gains in virtually every sector of the economy and creating demand for new services and content. In addition, ICT innovations are fuelling further connectivity and integration among economies and people, as evidenced by the increasing efficiency of logistics services and the expansion of supply chains.

Particularly significant has been the spread of mobile phones spurred by the production of inexpensive and locally adapted models. With an average of 61 subscriptions per 100 inhabitants in the region, the expansion of mobile phones is helping to empower

BOX III.3. Asian and Pacific Energy Forum

Multiple regional and subregional organisations and initiatives in Asia and the Pacific are paying close attention to energy security including ADB, APEC, ASEAN, SAARC, ECO, SCO and SPC. ESCAP as a regional body could link these subregional bodies and initiatives. In this regard, the ESCAP resolution to convene, in 2013, the Asian and Pacific Energy Forum at the ministerial level is especially noteworthy. According to ESCAP Resolution 67/2 adopted in May 2011, the scope of the Forum is “to discuss the progress achieved in the Asia-Pacific region in addressing the energy security challenges at the regional, national and household levels, and facilitate continuous dialogue among member states with a view to enhancing energy security and working towards sustainable development.”

Source: ESCAP Commission, resolution 67/2 of 25 May 2011. Available from www.unescap.org/EDC/English/AnnualReports/2011-Resolutions-E67_23E.pdf.

BOX III.4. Asian Energy Highway

Following the successful experience of the Asian Highway and the Trans Asian Railway, another intergovernmental framework could be developed for an integrated regional power grid, which could be termed as the “Asian Energy Highway”. The experience of developing intercountry agreements and addressing technical standards of the Asian Highway and Railways, could be an effective model to enhance the energy security through regional collaboration.

The proposed Asian Energy Highway could provide a system that enables countries to maximize the supply and demand of electricity by taking advantage of the broader geographical coverage by optimizing the available resources and encourage utilities to pursue clean fossil technologies and renewable energy resources. It would also provide better opportunities for smart grid including the decentralized systems to be connected to a greater system that would ensure the stability of the grid. The development of the ASEAN Energy Highway should also include the facilitation of energy trade among developing countries and stimulate investments in energy infrastructure. This initiative would connect existing subregional inter-connections under way, such as ASEAN’s planned integrated electricity grid, with the long term goal of reaching all countries in the region.

Source: ESCAP.

people hitherto marginalized and boost the productivity of small and medium enterprises, which can now use systems of communication comparable to those of large enterprises.

Equally promising has been the development of new software applications by young entrepreneurs, who are willing to take the risks and capitalize on big trends that meet the local needs of the region’s increasingly prosperous consumer base. Companies in countries such as Bangladesh, China, India, the Philippines and Viet Nam are providing novel ICT solutions through both applications developments and the provision of content to gaming, social networking, music and news websites, which are experiencing exponential increases in subscriber bases. Furthermore, content is becoming more localized and as the Internet connection becomes faster, more ubiquitous and more mobile, further increases are expected.

In addition, ICT has much potential to help businesses and consumers adopt more

sustainable and less carbon-intensive patterns of production and consumption. A case in point is the use of smart electricity grids, which allow two-way, real-time information exchanges between generators and customers, thus reducing the need for the former to hold excess capacity. In addition, videoconferencing and the sharing and exchanges of documents remotely through the Internet could significantly reduce the need for commuting and travel, allowing for savings in transport, vehicle maintenance and fuel consumption.

The digital divide

Although the information technology revolution has greatly benefitted Asia and the Pacific, such benefits have been rather unequally distributed. Beyond the growth in mobile phones mentioned above, the digital divide has actually increased in the region. At one extreme of the divide are countries such as the Republic of Korea, the world’s

most advanced country for ICT; at the other extreme, countries such as Papua New Guinea rank among the lowest.⁴⁶ Part of this divide is attributable to differences in per capita income. This is illustrated in figure III.7 in which the size of a country bubble is proportional to its per capita gross national income, and its vertical position corresponds to its value on the ICT development index devised by the International Telecommunication Union. Unsurprisingly, the largest bubbles cluster towards high ICT development, reflecting a strong correlation between ICT development and per capita incomes (correlation value of 0.885).

Figure III.7 also shows the importance of ICT usage prices, indicated here as the percentage of average income required to pay for a representative basket of ICT services – ranging from less than 1 per cent in Singapore, for example, to over 40 per cent in Cambodia and Papua New Guinea. As illustrated in figure III.7, as ICT prices rise, there is a sharp fall in the ICT development index. Furthermore, at very low levels of the development index, there is a group of countries in which the ICT price basket rises exponentially (inset countries). These are also the countries with very low per capita incomes, pointing to the fact that ICT prices absorb the highest percentages of average income in those very countries where people are least able to afford them.

On average, less than 20 per cent of people in Asia-Pacific have access to the Internet – far lower than in North America (78%), Europe (62%) and even Latin America and the Caribbean (33%).⁴⁷ However, of note, this may underestimate the extent of disconnectedness in the poorest countries. In Asia and the Pacific, only 4 per cent of the population is believed to have access to the high-speed broadband needed to exchange content-rich materials through data-intensive streaming. As a result, it is largely only the wealthier citizens who can connect and broadcast ideas, potentially magnifying socio-economic disparities and deepening divisions between the connected and the unconnected.

There are significant differences in the bandwidth available to different countries.⁴⁸

This is derived from wired connections, primarily terrestrial and submarine fibre-optic cables, terrestrial wireless transmission, or satellite-based transmission. Each type provides services at different quality and costs.

Similar to the direction of exports, most of the region's data transmitting routes link to markets in Europe and North America. In fact, around four-fifths of the high-capacity international routes in Asia are trans-Pacific. Hong Kong, China; Seoul; Singapore and Tokyo have emerged as the core global hubs of Asia where international carriers have established points of presence. The rest are mainly through the Indian Ocean/Mediterranean routes (figure III.8).

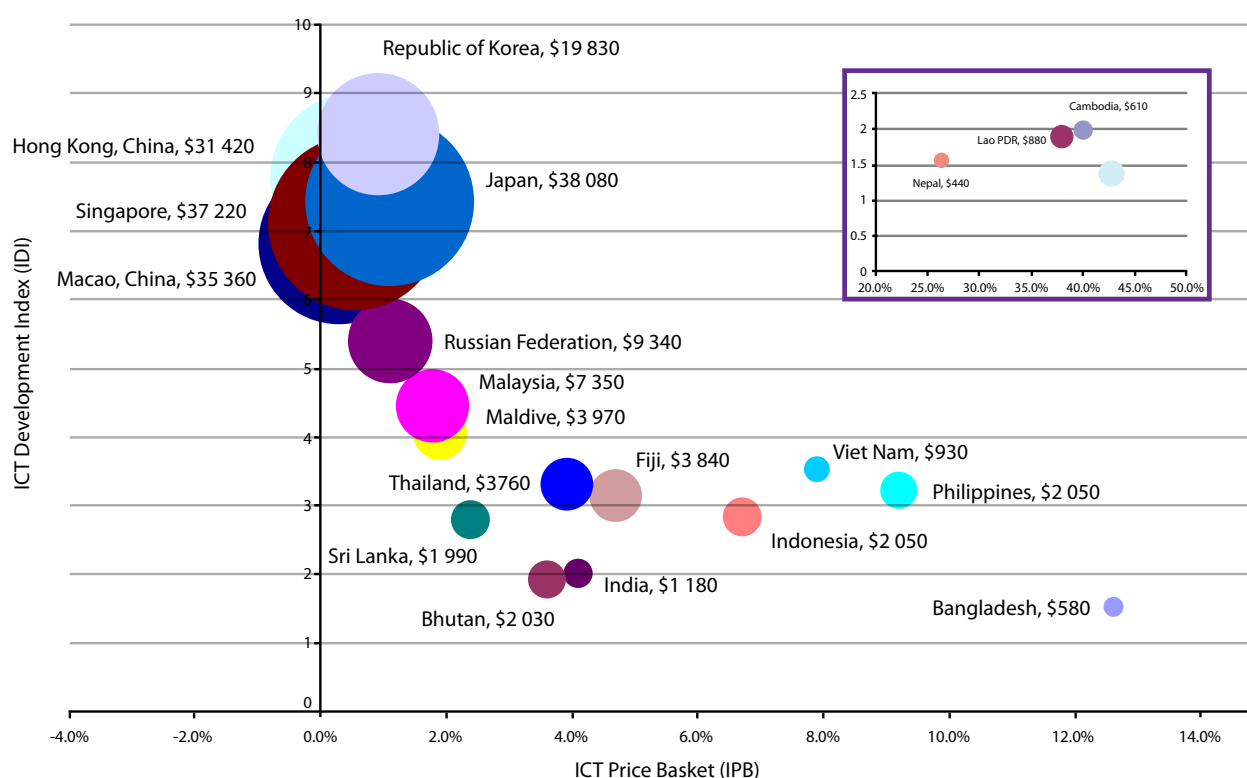
Some least developed economies in the Pacific have made progress in getting connected with submarine cables to the rest of the world. Samoa and American Samoa, for example, are connected through the American Samoa-Hawaii submarine cable. The Marshall Islands and the Federated States of Micronesia are connected via Guam through the HANTRU-1 submarine cable. Other Pacific island economies are also connected via submarine cables – such as French Polynesia through the Honotua cable to Hawaii, New Caledonia through Australia using the Gondwana-1 cable, and Fiji through the Southern Cross cable. Thus far, however, these connections are mostly confined to capitals and densely populated areas and have yet to be extended to more remote areas.

Telecommunication costs in the region are higher than in European and North American Internet hub cities. For example, while Hong Kong, China is regarded as the most competitive Internet transit market in Asia, prices are still 2.5 to 3.5 times higher than in London. Costs are even higher in cities far from major Internet exchanges, such as Bangkok and Manila due, at least in part, to the cost of transport back to the primary exchange.

Integrating regional information and communications technology infrastructure

Internet traffic volumes are expected to continue to increase exponentially both

FIGURE TITLE

III.7. Relationships between connectivity, usage prices and income, selected economies, 2009

Sources: ESCAP based on data from International Telecommunications Union, *Measuring the Information Society 2011*. Available from www.itu.int/ITU-D/ict/publications/idi/2011.

Notes: The size of the bubble refers to GNI per capita, USD, 2009. The ICT Price Basket (IPB) is a composite basket based on the user prices for fixed-telephony, mobile-cellular telephony and fixed-broadband Internet services, computed as percentage of average income level. The ICT Development Index (IDI) is a composite index combining 11 indicators related to the level of networked infrastructure and access to ICT, the level of ICT use in society, and the level of ICT skills.

within and between regions, demanding infrastructure that connects Asia-Pacific countries with each other directly and in affordable, reliable and secure ways. In fact, the landmass of Asia offers huge opportunities to provide secure broadband access. To take advantage of this, the region needs to invest in additional terrestrial fibre-optic cable routes and in the development of new Internet hub cities.

This would bring a number of development gains. For example, landlocked countries that carry telecommunications traffic would gain additional sources of revenue. It could also reduce dependence on incumbent carriers and drive down prices. These new Internet hubs need not be clustered around the region's congested megacities so to offer opportunities for a more inclusive and geographically balanced development. This is similar to the idea of building dry ports close to land transport border points. Indeed there could be cross-sectoral synergies between dry

ports and the Internet hub cities, which could enhance the commercial viability of both.

For this purpose, there have already been a number of subregional initiatives. For example, the Greater Mekong Subregion Information Superhighway Network, is an ongoing ADB-funded project to develop the backbone of telecommunications connectivity.⁴⁹ Similarly, in South Asia, ADB has funded the South Asia Sub Regional Economic Cooperation Information Highway initiative, which aims to boost data connectivity among Bangladesh, Bhutan, India, and Nepal, for which \$16 million in grants and loans have been approved.⁵⁰ This initiative may serve as a preliminary phase for the development of an extended SAARC information highway.

There have also been efforts to link research institutions. The third generation of the Trans-Eurasia Information Network, for example, provides high-capacity connectivity among

research institutions in Australia, China, India, Indonesia, Japan, the Lao People's Democratic Republic, the Republic of Korea, Malaysia, Nepal, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand, Viet Nam, Australia and Taiwan Province of China.⁵¹ This network, which was recognized at the eighth Asia-Europe Summit at the level of Heads of State and Government,⁵² is expanding to include Bangladesh, Bhutan and Cambodia. A similar initiative is the €6 million Central Asia Research and Education Network which came into operation in 2010; currently connecting Kyrgyzstan, Tajikistan and Turkmenistan, it is expected to be extended to Kazakhstan and Uzbekistan.⁵³

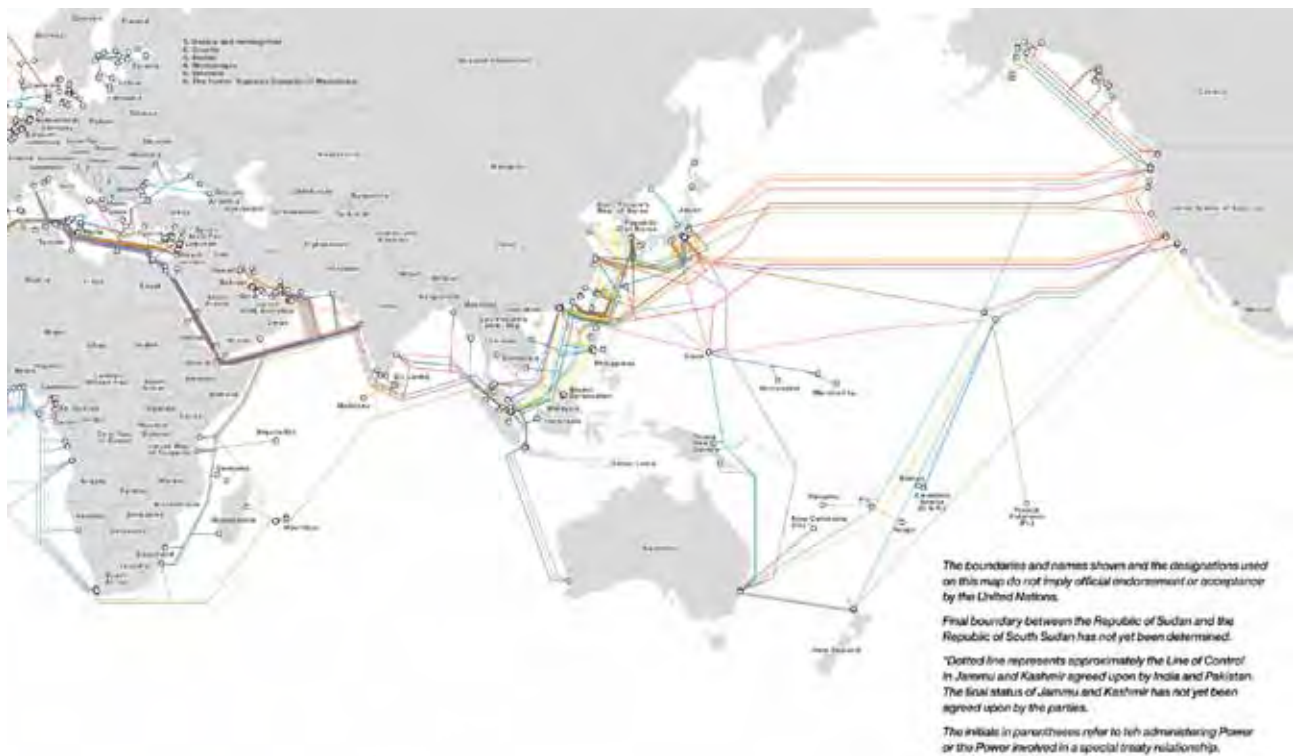
These developments have opened up more opportunities for the private sector. By the end of 2009, Asia and the Pacific had nine of the world's top 30 telecommunications service providers by revenue.⁵⁴ China and India have primarily been connected by undersea cables

through Hong Kong, China or Singapore, but 2010 saw the launch of an underground high-speed network connecting Yadong in China with Siliguri in India.⁵⁵ Other private-sector initiatives are under way; for instance, in 2011 the national Russian telecommunications operator Rostelecom and China Telecom agreed to expand the bandwidth of the terrestrial Transit Europe-Asia cable system. This provides the shortest route between Europe and Asia, running mainly over the territory of China and the Russian Federation and connecting countries in Central Asia such as Azerbaijan, Georgia, Kazakhstan and Ukraine.⁵⁶

Despite this range of private and public initiatives, the region still lacks infrastructure commensurate with its growing global influence, or its expected surges in Internet traffic. This would require more systematic intergovernmental cooperation to provide an organizing framework for expanding ICT connectivity.

FIGURE TITLE

III.8. Submarine telecommunications cables landing in Asia and the Pacific



Moving towards an integrated regional infrastructure

The Asia-Pacific region has huge potential for developing all forms of infrastructure. However, progress in cross-border infrastructure development has sometimes been hampered by socio-political differences across this very diverse region.

The need for stronger institutional frameworks for regional infrastructure

To foster deeper collaboration between governments, as well as between the public and private sectors, appropriate institutional frameworks need to be strengthened, or when missing, created. Such institutional frameworks already exist in some sectors. In the case of transport, for example, many subregional organizations have developed transport strategies and intergovernmental agreements, particularly for roads. Thus, ECO, for example, has a transit transport framework agreement, while countries of the Greater Mekong Subregion have adopted the Greater Mekong Subregion (GMS) Cross-Border Transport Facilitation Agreement for road transport. Similarly, the development of energy infrastructure is progressing in the region under various subregional and other multi-country frameworks.

Notably, subregional approaches may prove counterproductive in the longer-term if they result in a series of unaligned agreements with overlapping memberships, or with different governance structures. The final result could be small and isolated blocs of countries or subregions that fail to reap the wider benefits of larger integration. To overcome this potential problem, governments may consider acceding to existing international conventions, protocols and agreements. For example, when looking at developing subregional transport agreements, governments should be aware of the seven international transport conventions identified in ESCAP resolution 48/11, which are universal in scope.

Meanwhile, with regard to ICT infrastructure development, where there are few formal intergovernmental mechanisms at the regional level for policy coordination, countries of the

region should consider a terrestrial telecommunication network agreement that provides for an interconnected regional infrastructure. Europe, for example, has already adopted a Pan-European mobile satellite services programme which allows satellite operators to realize economies of scale from a Europe-wide network (box III.5).

Similar frameworks in Asia and the Pacific would allow countries to remove barriers to the provision of telecommunication services across borders, thus promoting competitiveness and improving services.

Integrating infrastructure across sectors

Infrastructure within different sectors is often developed independently. Instead, there should also be opportunities, for example, to piggyback ICT connectivity infrastructure with some transport and energy systems. The Republic of Korea, the region's digitally most advanced country according to the ITU, has deployed ICT fibre-optic cable infrastructure along its backbone highway network. Electricity and ICT transmission lines can also run alongside railway lines, allowing them to use established rights of way. India, for example, is using its vast railway network to extend ICT fiber optic cables (box III.6). Energy and ICT infrastructures offer potential areas for synergies as well. For example, one approach would be to provide consumers with modern energy access and basic ICT services in one package.

Similarly, at the regional level, governments could agree to extend ICT cable conduits through the Asian Highway or Trans-Asian Railway networks. This could avoid time-consuming and costly negotiations between the private sector and government, as well as between governments when borders are crossed, and enable connectivity routes to be built in a rapid, cost-effective and rationally coordinated manner. One option might be to add an ICT regional connectivity protocol to existing intergovernmental agreements on transport developed under ESCAP auspices.

Another approach, which has been piloted in several subregions, is the "corridor approach", whereby a certain route or set of routes

are designated as a corridor of economic importance, and governments focus their collective efforts in developing and upgrading the corridors. GMS and CAREC programmes supported by the ADB use this approach, particularly for transport infrastructure development and facilitation efforts. The International North-South Transport Corridor (INSTC) which stretches from the Russian Federation to the Islamic Republic of Iran is another example. Corridor approaches are advantageous from the perspective of addressing both the physical aspects of infrastructure development and institutional and regulatory aspects governing the services along the corridor. However, because they try to be comprehensive, these initiatives require a high degree of coordination and cooperation across all stakeholders, including government agencies and institutions and the private sector, which adds to the time and cost of decision-making processes and implementation.

Leveraging network externalities

Infrastructure development can result in network externalities which, even if difficult to quantify, can further enhance growth. This is most applicable to ICT, which can facilitate and improve the efficiency in the provision of many services, such as health, education or microfinance. Many of these sectors

already operate their own networks to fulfil their needs. Some examples are electrical substations, railway stations and highway toll booths. However, these could now be shared between services. In India, for example, the Ministry of Railways leveraged its infrastructure to extend the telecommunications network. Another example is the modernization of border crossings, which, if supported by an ICT network infrastructure that connects countries directly and in affordable, reliable and secure ways, allows the introduction of ICT applications for customs clearance and other processes relating to the movement of goods.

Dry ports represent an interesting microcosm of intersectoral integration. In order to maximize their efficiency and compete with maritime ports, they should offer a wide variety of services over and above storage facilities. ESCAP is currently developing a draft agreement on dry ports, which, if adopted, would establish dry ports as an integral part of the regional transport networks. The integration of these transport networks can lead to an extended market size and thus contribute to creating an environment which allows a higher level of international specialization. Dry ports have an additional value arising from network externalities: by offering services over and above transport, they can stimulate local area development.

BOX III.5. Intraregional connectivity in Europe

Countries in Europe are cooperating to improve intraregional ICT connectivity, to even the most remote areas. One initiative is the pan-European mobile satellite services programme, which aims to encourage private investment across the European Union in satellite-based systems for Internet access, television and radio, and emergency communications. To this end, the European Commission harmonized the use of radio spectrum in the 2 GHz frequency bands and authorized two private companies to act as pan-European systems providers. These measures were designed to encourage satellite operators to realize economies of scale by reaching a European-wide market with technically seamless interoperability. Similar mechanisms may be explored for this region.

BOX III.6. Sharing railway and telecommunications infrastructure in India

The Ministry of Railways of India created RailTel Corporation of India Limited India in 2000 in order to fulfil communication needs for administration, ticketing and efficient railway operations. By taking advantage of its access to railway lines, RailTel has now laid down a network of more than 34,000 kilometres of cables. In addition to modernizing the Indian Railway's telecommunications network, RailTel has become a leading telecommunications provider and is earning revenue by marketing surplus bandwidth and other infrastructure to other service providers like AirTel, Hutch, Tata, BSNL and financial entities such as the State Bank of India, Dena Bank, and Amar Ujala.

Sources: India, Ministry of Railways, *Indian Railways Year Book 2008-09* (2008-09). Available from www.indianrailways.gov.in/railwayboard/uploads/directorate/stat_econ/pdf/Year_Book_English2008-09.pdf; and RailTel Corporation of India. Available from www.railtelindia.com.

In order to be competitive, such facilities need guaranteed energy supply and good transport links as well as modern ICT infrastructure networks and equipment. By combining these sectors, new forms of regional integration can be forged. For example, Internet hubs, unlike other infrastructure hubs, do not need to be located in physical proximity to the congested mega-cities of Asia, with their high operation costs and increased exposure to disasters. Due to their virtual functions, these hubs can be located in remote areas and, as with dry ports, could offer new and cost-effective ways of decentralizing economic activities for more inclusive and geographically balanced development. Furthermore, the possibility of developing cross-sectoral synergies between dry ports and Internet hub cities could further enhance the commercial viability of both.

Involving the private sector

Building and integrating major infrastructure assets involves high capital costs and long gestation periods. Therefore, governments should embark now on broader and more comprehensive regional infrastructures in transport, energy and ICT. By participating in regional institutional frameworks, govern-

ments may be able to shape developments for their own benefit, and avoid being locked into certain technologies or conditions that do not support their development goals.

Given the rapid pace of change in the global economy, governments should also work together with the private sector to plan and implement regional infrastructure initiatives. Private businesses are already moving ahead with integration in their own spheres. This has both positive and negative effects: on the positive side, they are investing and providing the services which use the infrastructure laid down by governments, thereby creating network externalities; on the negative side, the integration of businesses into global markets can make economies more open to external shocks, as was demonstrated with the disruption of global supply chains by natural disasters in 2011. Regional cooperative frameworks can help governments plan for these possibilities and minimize the effects.

Infrastructure investment is, however, generally lumpy and has long gestation lags. The next chapter will therefore examine the potential for developing the necessary financial architecture.

ENDNOTES

¹ ADB and ADBI, 2009.

² For example, in a recent ex-ante study of the proposed Padma Bridge (a 5.8-km bridge with an estimated cost of \$1.8 billion across the Padma River) in Bangladesh, an analysis was made of the effects of the investment. It showed that the bridge would produce new demand/output in related economic sectors, generate additional factor incomes in the value chain and create new jobs. In total, the construction of the bridge was expected to raise GDP growth by 1.2 per cent through the multiplier effects. See, ADB, 2007, p. 21.

³ See, for example, Easley and Kleinberg, 2010.

⁴ A phenomenon known as Metcalfe's Law. The so-called "Metcalfe's Law" states the value of a network grows as the square of the number of users.

⁵ Containerisation International, 2011b, pp. 4-5.

⁶ Consolidation of shipping industry and increasing size of ships also contributes to this because shipping companies aim to maximize their cargo/profits.

⁷ The index is generated as follows: for each of the five components, a country's value is divided by the maximum value of that component in 2004, and for each country, the average of the five components is calculated. This average is then divided by the maximum average for 2004 and multiplied by 100. In this way, the index generates the value 100 for the country with the highest average index of the five components in 2004.

⁸ ESCAP Asia-Pacific Trade and Investment Agreements database. Available from www.unescap.org/tid/aptiad/agg_db.aspx.

⁹ The correlation coefficient between changes in the index and changes in container traffic is 0.37.

¹⁰ Association of Asia Pacific Airlines, 2011.

¹¹ ICAO, 2010.

¹² Association of Asia Pacific Airlines, 2011.

¹³ Gillen, 2009.

¹⁴ Arvis and Shepherd, 2011.

¹⁵ This connectivity index is designed to capture service improvements, route extensions and increased frequency; for instance, the value of the index increases with increases in the range of destinations and/or the frequency of services.

¹⁶ ICAO, 2010, p. 28, table 12.

¹⁷ The Agreement specifies four road classes: (i) "Primary" class refers to access-controlled highways, used exclusively by automobiles; (ii) "Class I" is 4 or more lanes with asphalt or cement concrete pavement; (iii) "Class II" is 2 lanes with asphalt or cement concrete pavement; and (iv) "Class III" is 2 lanes with double bituminous treatment pavement.

¹⁸ For more information, see www.unescap.org/ttdw/common/tis/ah/Member%20countries.asp.

¹⁹ As of March 2012, there were 17 parties to the Intergovernmental Agreement on the Trans-Asian Railway Network.

²⁰ Convention on Road Traffic (Vienna, 8 November 1968); Convention on Road Signs and Signals (Vienna, 8 November 1968); Customs Convention on the International Transport of Goods under Cover of TIR Carnets (TIR Convention) (Geneva, 14 November 1975); Customs Convention on the Temporary Importation of Commercial Road Vehicles (Geneva, 18 May 1956); Customs Convention on Containers (Geneva, 2 December 1972); International Convention on the Harmonisation of Frontier Controls of Goods (Geneva, 21 October 1982); and Convention on the Contract for the International Carriage of Goods by Road (CMR) (Geneva, 19 May 1956).

²¹ Data on Pakistan are not included in the model, so it is not possible to include the Amritsar – Lahore segment in the simulation.

²² Latest complete data available in July 2011.

²³ ADB, 2009.

²⁴ 2010 electricity trade data extrapolated.

²⁵ The project's first stage was completed in 2009, connecting Irkutsk to the Skovorodino hub, from where oil is currently transported to the Pacific coast by rail. The second stage will connect Skovorodino to the Pacific by pipeline. When completed in 2025, it is expected that the project will cover more than 5 per cent of the oil demand of Asia.

²⁶ According to Topalov, 2009, the total Sakhalin reserves are estimated to be 3.3 trillion cubic meters of gas and 900 million tons of oil. Currently, 2 out of 9 Sakhalin projects are active with Sakhalin-2 supplying nearly 8 million tonnes of oil and 12 billion cubic meters of gas.

²⁷ Chichkin, 2011.

²⁸ There are currently two LNG terminals functioning in the country: a Marmara LNG terminal (Cerrahogullari, 2006) with the yearly regasification capacity of 6 billion cubic meters and Izmir LNG terminal (Global LNG Info, 2011) with yearly regasification capacity of 7.4 billion cubic meters.

- ²⁹ EIA, 2010b.
- ³⁰ EIA, 2010b.
- ³¹ This is a 200-kilometre long natural gas pipeline from Korpezhe field north of Okarem in western Turkmenistan to Kordkuy in the Islamic Republic of Iran, complemented in 2010 by a line from the giant Dovletabad field in eastern Turkmenistan.
- ³² Newsroom Magazine, 2011.
- ³³ EIA, 2010a.
- ³⁴ Majumdar and Verma, 2008.
- ³⁵ Khan, 2011.
- ³⁶ ESMAP, 2008.
- ³⁷ ESMAP, 2008, p. 37.
- ³⁸ Indonesia is one of the largest exports of energy in the region, but most of them consist of coal.
- ³⁹ ASEAN, 2004.
- ⁴⁰ ASEAN, 2009d.
- ⁴¹ SPC, 2011.
- ⁴² Tuli, 2008.
- ⁴³ ESCAP calculations based on International Energy Agency database, 2010. Available from www.iea.org/stats/rd.asp.
- ⁴⁴ See ITU, World Telecommunications/ICT Indicators database 2011, for data on full-time telecommunication employment; and ESCAP *Statistical Yearbook for Asia and the Pacific 2011e*, p. 220, for data on total employment.
- ⁴⁵ McKinsey Global Institute, 2011, p. 15, exhibit 4.
- ⁴⁶ ITU, 2011, p. 29.
- ⁴⁷ ESCAP, 2011e, p. 238.
- ⁴⁸ International Internet bandwidth is the capacity which telecommunication operators have to carry Internet traffic internationally. It is measured as the sum of capacity of all Internet exchanges. See ITU definition, unit of measure (mega bits per second (Mbit/s). Available from www.itu.int/ITU-D/ict/material/TelecomICT%20Indicators%20Definition_March2010_for%20web.pdf.
- ⁴⁹ GMS, 2010.
- ⁵⁰ ADB, 2007c.
- ⁵¹ The third generation of the Trans-Eurasia Information Network (TEIN3). Available from www.tein3.net (accessed 3 January 2012).
- ⁵² ASEM, 2010.
- ⁵³ European Commission (2009).
- ⁵⁴ Telegeography, 2009.
- ⁵⁵ Airtel, 2010.
- ⁵⁶ Rustele.com, 2011.



Photo by Warren Field

Wikimedia Commons free photo- David Iliff



Four

Enhancing regional financial cooperation



The economies of Asia and the Pacific have been integrating rapidly in terms of trade and investment. But, they have made less progress in finance, for which regional cooperation has largely been confined to mechanisms to provide short-term liquidity support. In future Asia and the Pacific could reap substantial economic and financial returns by enhancing cooperation in multiple areas of finance, including a more effective liquidity provision, trade finance and infrastructure financing.

The Asia-Pacific region boasts large official foreign exchange reserves, exceeding \$6 trillion in 2011. Indeed, some countries are holding reserves well in excess of what is required for liquidity purposes. In addition, individuals as well as corporations in the region also hold substantial private savings outside the region. At the individual level, the Asian wealthy,¹ who in 2008 represented 28 per cent of the world's wealthy individuals, controlled \$7.4 trillion or 23 per cent of the total assets invested worldwide.² Only 6 per cent of these funds are managed in the region, mainly in developed economies.

One reason for investing outside of the region is the small size of their securities markets and their small secondary markets. The Asia-Pacific debt market in 2010 stood at \$1.14 trillion, but most of this – \$846 billion – was denominated in Chinese yuan (RMB), which is not fully traded or marketed. Investors also face capital controls and other obstacles. Bonds from the Republic of Korea, for example, have high yields and potential gains through currency appreciation but as a result of a lack of liquidity in swap markets, they are expensive to convert to hard currency. However, some progress has been made; there are now currency-linked bonds and corporate hybrids, along with a range of other high-yield, investment-grade bonds with long maturities.

Nevertheless, the markets for covered bonds and asset-backed securities are still in their infancy. As commercial banks and insurance companies issue relatively few bonds, the markets are also relatively small. In fact, Asia-Pacific bond markets are only around one-tenth the size of the region's equity markets.

The pooling of regional funds to provide liquidity, boost trade financing and increase the amount of funds available for closing staggering infrastructure gaps would be beneficial for the whole region. The extension and operationalization of existing agreements, as well as any new initiative, should seek synergies with existing schemes and be complementary to them. The deepening of integration in other areas of finance that do not involve the pooling of funds, such as the harmonization of regulatory measures or the coordination of policy changes, should also support this process.

Financial cooperation

The high degree of integration among the Asia-Pacific economies through trade and investment links makes the region vulnerable to large spillover effects stemming from global or local shocks. For instance, large external shocks or swings in capital flows could destabilize exchange rates and disrupt trade and investment flows across countries. By the same token, crises in final export destinations may disrupt production in countries integrated into global or regional supply chains. Coordination of financial and monetary policies may therefore be necessary to make regional economies resilient to such external shocks as well as to mitigate the harmful effect of heightened global risk aversion and a credit crunch. Cooperation, including in the areas of trade financing and settlement, is clearly necessary to avert these types of risks.

Cooperation, however, cannot be confined to emergency support alone. There is also a strong case for cooperation to boost long-term growth in the region, an important example of which is by pooling regional funds for infrastructure investment. Investing in infrastructure has growth-enhancing

effects coming through various channels beyond the addition to the capital stock. First, infrastructure enhances market access and reduces trade costs, allowing trade volumes to multiply and trade to reach larger areas. Better physical infrastructure could also enable middle-income countries to move up on the value chain by reducing the relocation and outsourcing costs of lower value-added activities to countries with lower labour costs, a path taken by higher-income economies in the region and which some middle-income economies may need to consider in the medium term. In addition, better physical infrastructure can foster a deeper degree of integration of economies and industries into regional supply chains, which could enhance the region's competitiveness in the global economy. Moreover, by opening up new opportunities for employment and businesses, infrastructure development could boost incomes and purchasing power in the less developed countries, speeding up their convergence to higher levels of income per capita and closing their development gaps.

As the experience of the European Union shows, channelling funds to less developed regions pays off. By linking those areas more closely to the core, new markets, new destinations for industry relocation and new efficiency gains can be realized. In the case of the European Union, funds have been channelled to less developed regions through fiscal transfers, the so-called Structural and Cohesion Funds that require matching by subnational units' own funds and through loans by the European Investment Bank (EIB).

Integration needs to proceed prudently

Although financial cooperation could be very useful to help the region meet its short-term and long-term financing needs, financial integration needs to proceed prudently. Progress in the integration of financial markets has been limited because of the painful consequences of a too rapid liberalization of the capital account in several countries of the region before the Asian financial crisis of 1997-1998. As a result, the Asia-Pacific economies are cautious about promoting financial integration. Many forms

of financial integration involve cross-border flows through the capital account and, hence, require the liberalization of the capital account. These flows include cross-border direct and portfolio investments, as well as cross-border lending by financial institutions and corporations. While a few Asia-Pacific economies such as Brunei Darussalam, Singapore or Hong Kong, China have some of the most liberalized markets in the world, others such as Bhutan, Kazakhstan or the Lao People's Democratic Republic impose controls on all types of capital transactions. In addition, the trend of lifting controls on capital account transactions that began in the 1980's experienced a reversal, first as a result of the 1997-1998 Asian financial crisis and a decade later as a result of the global financial crisis of 2008-2009.

Due to minimal availability of financial instruments and lack of confidence in those instruments, insufficient governance structures and capital controls, the bulk of portfolio investment from the region flows to other regions. As shown in table IV.1, only 15.8 per cent of the region's portfolio capital stocks was invested within the region as of 2009. However, some subregions are more active providers of portfolio capital than others.

About one-third of the portfolio securities investment made by the economies of East and North-East Asia excluding Japan, are placed in Asia and the Pacific, with almost half of the total invested in South-East Asia. At the other extreme, North and Central Asia and South and South-West Asia direct only 5 to 7 per cent of their portfolio securities investment to the Asia-Pacific region. Furthermore, the two subregions that invest intensively in Asia and the Pacific, non-Japan East and North-East Asia and South-East Asia, concentrate their portfolio investments in non-Japan East and North-East Asia, primarily in China. North and Central Asia and the Pacific are the only two subregions that do not concentrate their Asia-Pacific portfolio investments on non-Japan East and Northeast Asia, but also invest heavily in Japan and the Pacific. This latter pattern may be attributed to the larger choice of available portfolio securities in Japan and Australia and may reflect portfolio diversification motives.

Learning from the Asian financial crisis, in which foreign exchange management and capital flows were at the heart of the problem, most countries have taken a more prudent approach towards these issues. In particular, offshore markets, which had been designed for offshore transactions but ended up

TABLE TITLE
IV.1. Interdependence in portfolio capital investment in Asia and the Pacific

Originating from Invested in	Shares of portfolio capital stock assets as of 2009 (percentage)						
	Asia-Pacific	East and North-East Asia	East and North-East Asia excluding Japan	North and Central Asia	Pacific	South and South-West Asia	South-East Asia
Asia-Pacific	15.8	12.9	32.3	5.5	12.4	6.8	47.2
East and North-East Asia	8.7	7.1	24.0	2.5	7.1	4.7	26.5
East and North-East Asia excluding Japan	7.3	6.5	21.7	0.1	2.3	4.7	20.8
North and Central Asia	0.2	0.1	0.2	0.6	0.2	0.4	0.4
Pacific	4.2	4.2	4.8	2.2	3.6	0.1	5.9
South and South-West Asia	1.0	0.5	1.1	0.1	0.4	0.8	6.1
South-East Asia	1.7	1.1	2.2	0.0	1.0	0.8	8.3

Source: IMF, Coordinated Portfolio Investment Survey (CPIS) (2009). Available from www.imf.org/external/np/sta/pi/cpis.htm.

Notes: The shares in the table refer to total portfolio capital including equity and debt stocks. Data are derived from the creditor side.

intermediating large amounts of funds into the domestic economies in the wake of the 1997-1998 crisis, have been scaled back or virtually shut down.³

Since the 1997-1998 crisis, economies in the region have become increasingly wary of maturity or currency risks and have thus equipped themselves with an arsenal of tools to make their economies more resilient to any similar attacks in the future. These tools include a rapid accumulation of foreign exchange reserves and the development of hedging instruments. Foreign exchange risk is typically hedged through well-developed non-deliverable forward (NDF) markets or through forward markets, while the markets for swaps, another hedging vehicle, are relatively less developed and hence less liquid in the region.⁴ Several economies, such as China, India, Indonesia, the Philippines, the Republic of Korea and Taiwan Province of China have well developed NDF markets, while Thailand has developed an effective forward market.

Making local currencies deliverable offshore reduces the need for NDF markets, as is illustrated by China, which made the RMB officially deliverable in Hong Kong, China since July 2010. Offshore markets also reduce transaction costs. However, they could also provide a vehicle for destabilizing currency speculation. The development of such markets, thus, requires the introduction of measures to reduce such risk, including an initial limitation of the channels through which a domestic currency can flow to offshore markets, and stringent requirements of documentation of the underlying transaction.

Furthermore, the establishment of offshore markets for different products should also be gradual. As evidenced by the recent experience of China with the so-called dim-sum market for RMB denominated bond issues in Hong Kong, China, offshore bond markets can grow rapidly. On the other hand, offshore equity markets may take longer to establish because the functioning of any equity market depends on the facilitation of secondary market trading, a piece of infrastructure which has not yet been developed offshore. Finally,

to boost offshore lending in local currencies, it is crucial to enhance efficiency in the domestic banking system to make interest rates attractive compared to other currencies.

In any event, the consensus across the region is that any steps towards liberalization of capital flows should be gradual and taken with great care. There is no one-size-fits-all recipe for the process. Robust regulatory frameworks, supervisory systems and the development of deep financial markets capable of absorbing potentially large capital flows are prerequisites to move in that direction. While putting in place these prerequisites, it should be noted that the liberalization of capital flows is a long term undertaking and that there are other urgent priorities for which regional financial cooperation is much needed. These are (i) strengthening resilience to external shocks, (ii) realizing efficiency gains and (iii) using regional funds more effectively.

Financing infrastructure development

Across the region, infrastructure is financed from a variety of sources. These include governments, national, bilateral and multilateral development agencies, and financial markets. More recently, private investors have been taking a greater share, especially through public-private partnerships (PPPs) in providing financing. Notwithstanding the multiplicity of financing sources, there are large financing gaps in the Asia-Pacific region.

Direct disbursement from the budget

Governments are often the best placed to invest in infrastructure because, compared with the private sector, they can look beyond financial returns. Indeed, government financing is justified when it corrects for market failures, such as in the case of public goods, natural monopolies or externalities. Governments are also best placed to finance, for instance, rural roads which are accessible to all users and where no fees are charged. Some services such as water supplies are natural monopolies that are more appropriately delivered by central or local governments. And in several cases, it is only the government

that can account for externalities, both positive, such as network externalities, or negative, such as emissions of pollutants or other damaging environmental effects and, therefore, it is best placed to provide the financing.

However, even if governments wish to invest in infrastructure, they may have limited capacities to do so. One constraint could be difficulties in accessing funding or a desire to limit the size of the public debt. Although public debt ratios are not particularly high in the Asia-Pacific region, governments wishing to take on significantly more debt to invest in infrastructure would need to ensure that they can do so in a sustainable way in projects with high social returns. In general, government financing is desirable as long as the social return is higher than the private return. Beyond that, government expenditure can lead to an inefficient allocation of funds.

National development bank lending

Many governments invest in infrastructure through national development banks. This may help reduce governments' budget constraints because development banks are generally funded not only from government budgets but also by issuing government-backed bonds – although the guarantees still constitute a contingent liability for the government. Development banks have institutional advantages since they can employ specialized personnel to manage funding and lending activities.

In addition to funding national infrastructure projects, national development banks typically invest in other development-related activities, such as agriculture, rural development and public services, and finance small and medium-sized enterprises or micro-enterprises. Some development banks are extremely large and during the global financial crisis were used for countercyclical spending. The Brazilian Development Bank (BNDES) is the world's largest and most effective development bank. In 2010, it lent more than five times as much as the World Bank (table IV.2).

Bilateral and multilateral agencies

Poorer countries tend to rely on bilateral and multilateral agencies for investment in infrastructure. Some of these agencies offer support, especially to the neediest countries, in the form of grants, but more typically they provide long-term loans, usually co-financing with national governments, other agencies or the private sector. In Asia and the Pacific, ADB is one of the principal multilateral sources. It signs country partnership strategies with governments and subsequently offers them funding for infrastructure projects according to country allocations and sectoral priorities. Most ADB loans are on commercial terms from its ordinary capital resources (OCR), but the Bank also offers loans on concessional terms through its Asian Development Fund. The ADB also finances private-sector projects without government guarantees, though in 2010, such lending made up less than 15 per cent of its new lending. Such loans are also often accompanied by technical assistance to help design and implement projects.

In addition to supporting national governments, the ADB promotes regional cooperation in infrastructure. The CAREC programme, established in 1997, for example, focuses on infrastructure projects in the area of transport, energy, trade facilitation and customs services. Since 1991, there have also been proposals to set up a North-East Asia Bank for Cooperation and Development with the participation of China, the Democratic People's Republic of Korea, Japan, Mongolia, the Republic of Korea, and the Russian Federation, but the idea has yet to bear fruit. More recently, the leaders of Brazil, the Russian Federation, India, China and South Africa (BRICS) proposed at their March 2012 Summit in New Delhi to establish a BRICS Development Bank to finance infrastructure development in developing countries.

Private-sector funding

Infrastructure investment also comes from the private sector. Indeed, this is generally more efficient than public disbursement, particularly when the financial returns are likely to be high and investment costs

TABLE TITLE

IV.2. Comparison of selected regional and national development banks

(In billions of US dollars)

Year established	EIB 1958	EBRD 1991	WB 1944	ADB 1966	BNDES 1952	CAF 1970
Total assets	563	52	283	100	331	18.5
Total loans	482	20	120	46	218	13.9
Subscribed capital	311	28	190	144	n.a.	2.8
Paid-up capital	16	8	12	7	..	..
Equity	54	17	38	16	40	5.7
Loans disbursed 2010	79	12	29	6	101	7.7
Net income 2010	3	2	-1.1	0.6	6	0.2
Return on equity	5.3 %	10.8 %	-2.9 %	3.8 %	15.2 %	3.0 %

Source: 2010 financial statement of each institution.

Notes: The abbreviations are: EIB: European Investment Bank; EBRD: European Bank for Reconstruction and Development; WB: World Bank; ADB: Asian Development Bank; BNDES: Brazilian Development Bank; and CAF: Development Bank of Latin America. Data for EIB, EBRD and BNDES converted into US dollars using market exchange rate of 31 December 2010: US\$/Euro = 1.3412 and US\$/Real = 0.6024

can subsequently be recouped through user charges – by collecting road tolls, for example. Many governments have been keen to encourage private participation in infrastructure, seeing this as a way to reduce fiscal burdens. Consequently, since the 1980s, they have privatized some infrastructure, notably in telecommunications and power supplies. By doing this, the state, instead of being an owner and provider, serves as the regulator for privately provided public services. This has paved the way for many private-sector companies to own and manage infrastructure assets, with expectations of attractive returns.

While this model has been employed extensively in developed countries, it has been slower to get off the ground in poorer developing countries, where the private sector has more limited access to funds. Such funds come from four main sources: banks, institutional investors, bond markets and equity markets.

Bank lending

Commercial banks may be wary of lending for infrastructure since they are likely to face a maturity mismatch. Infrastructure requires long-term funding while the bank funds are primarily short-term in the form of deposits and interbank borrowing. Nor do banks necessarily have the skills to assess the risks related to such lending. Risk officers

with limited experience will find it difficult to price the risk involved in infrastructure projects in which there is often a high degree of uncertainty. In these circumstances, when funds are offered, they are likely to be expensive. As indicated in figure IV.1, in projects with lower ratings the credit spread can be higher than 20 percentage points.

Institutional investors

An alternative to bank funding is to seek other investors that take a longer-term view. Insurance companies, pension funds and other institutional investors are likely to have a more suitable asset-liability maturity structure, but this assumes that these institutions have the necessary in-house resources for acquiring, managing and disposing of infrastructure assets. The Asia-Pacific region has relatively few institutions with this capacity.

Bond markets

In many countries, privately developed infrastructure has been funded by issuing bonds. In most Asia-Pacific countries, however, bond markets are either non-existent or in their infancy. Moreover, most projects in less developed Asia-Pacific countries are likely to be rated below a single B, for which the premia charged over government bonds can be prohibitively high (figure IV.1). An alternative would be to issue bonds in international markets, though few companies in Asia and the Pacific have sufficient access

to them. In addition, international issues are often denominated in foreign currencies, raising the prospect of currency mismatches, of which many countries are very wary after the experience of the Asian financial crisis. This could be addressed by issuing bonds in domestic currency, though this would effectively pass the foreign exchange risk to foreign investors, which would require effective hedging facilities. Bond financing is likely to become more important in the future as bond markets become more efficient, though this is unlikely to happen quick enough to fund urgent infrastructure projects.

Equity markets

Similar constraints apply to equity markets. Equity funding could be attracted either through investment in infrastructure companies or through the securitization of infrastructure assets. At present, however, only a few infrastructure companies in the Asia-Pacific region are listed on stock markets. With the exception of activity in Australia and Japan,

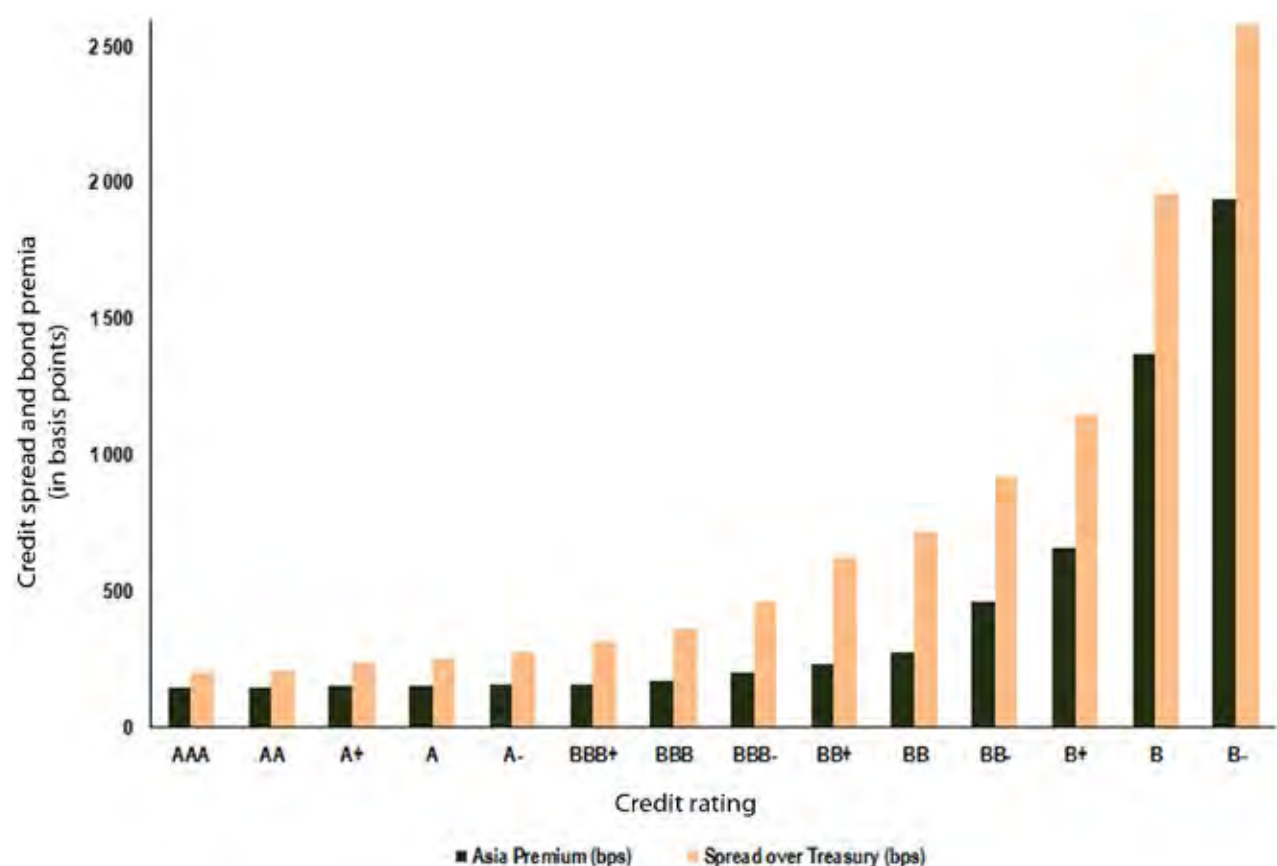
there has been relatively little securitization of infrastructure assets; globally listed Asia-Pacific infrastructure securities make up only 3 to 4 per cent of global market capitalization. At present, without the necessary market and regulatory infrastructure and improvements in corporate governance, equity funding is unlikely to finance infrastructure needs in the poorer developing countries.

Public-private partnerships

One way of addressing government budgetary constraints and opening up more opportunities for private sector participation is through public-private partnerships (PPPs). A major motivation for using PPPs is to improve the value for money of service delivery. Another is affordability. Because of their ability to relieve pressures on government budgets and improve service delivery, PPPs are a promising avenue of infrastructure financing. To make it an effective tool, a robust legal and regulatory framework must be set up. In addition, it is crucial to follow

FIGURE TITLE

IV.1. Credit spreads and bond premia for five-year term loans or issues, for different ratings of borrowers or issuers, January 2012



Source: HSBC, "Asian curve". Available from www.hsbcnet.com/research/asian-curve (accessed February 2012).

Note: One basis point is equal to 1/100th of 1 per cent. Credit spread is the difference between US treasury yields and the lending rate for borrowers with different credit rating. Bond premia are the differences between US treasury yields and those for Asian issuers with different ratings.

best practices in reporting PPPs in government accounts to avoid using them for creative accounting purposes to hide government debt. The experience of developed countries shows that this threat is indeed real: only about a third of OECD countries follow best practices in reporting, and countries that diverge from best practices appear to be active users of PPPs. Many economies in Asia and the Pacific are already active users of PPPs for infrastructure financing. PPPs have been significant contributors to gross fixed capital formation in Armenia, Cambodia, Georgia, Malaysia, Pakistan and the Philippines (figure IV.2). In terms of absolute size, India is the biggest market.

Many innovative products taking the form of PPPs tailored to specific country circumstances have been proposed and implemented recently. In Turkey, for example, infrastructure funds have been proposed that would use the legal form of real estate investment trust funds (REITs) and would operate as PPPs.⁵ The country's well-developed capital markets would facilitate the securitization of infrastructure assets and direct financing by a public offering would economize on credit cost and eliminate credit risk. Partnering between the public (mainly at the subnational level) and private sector would be crucial as public participation would allow to accelerate business procedures and ensuring land that could be provided in kind, while the private sector would engage in the delivery of the infrastructure.

Another example, which has been widely put in practice in developed and developing economies in the region, is revenue bonds. Revenue bonds can be used in any type of infrastructure project with user charges. They were designed to overcome the budgetary constraints of governments by mobilizing private funds. In comparison to standard PPPs in which private funds can come from the general public. It is the users that finance the project in the revenue bond scheme. This structure has the advantage of providing stronger monitoring incentives for investors, as they are at the same time the users, thereby increasing the success rate of project implementation. The investors' return is

linked to revenues from user charges. The co-financing share between the public and the private sectors can be determined in different ways. One possibility is to determine the share and derive the user fee revenue according to this split (figure IV.3.). Alternatively, a certain rate of return can be targeted and the public-private share derived from that.

The emergence of PPPs has been rather slow in many countries, mainly because of the difficulties in creating an appropriate legal and regulatory framework. Even in countries where PPPs are common tools for infrastructure financing, they have their limits owing to both constraints on government budgets and on the amount of available private funds. For example, India aims at meeting 50 per cent of financing needs from PPPs in the five years to come (approximately \$100 billion annually), which is an impressive share in international comparison but nevertheless falls short of meeting the country's large-scale infrastructure needs.

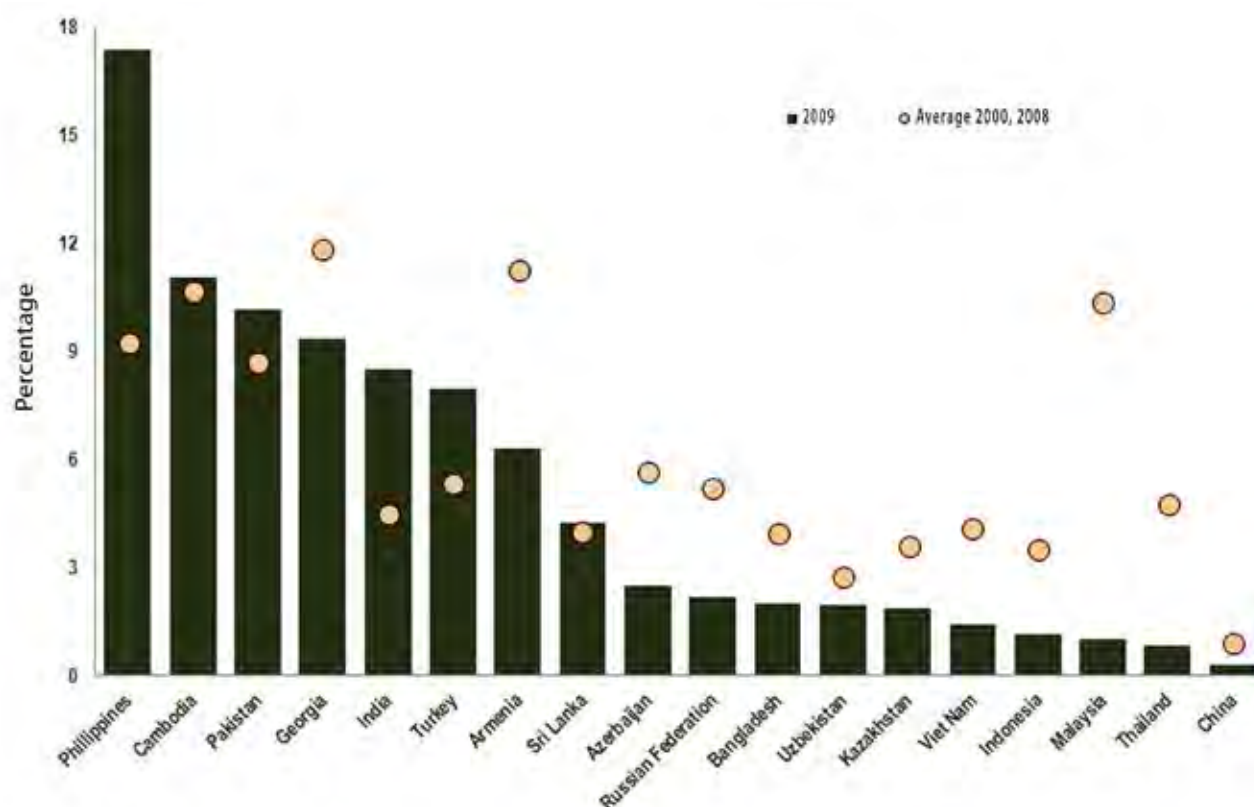
Initiatives for regional financial cooperation in Asia and the Pacific

It is widely recognized that a regional financial architecture could complement the international financial architecture. As a result, the Asia-Pacific countries have taken a number of initiatives to foster regional financial cooperation.

Early Initiatives: The Asian Development Bank and the Asian Clearing Union

The idea of establishing a development bank for Asia and the Pacific was first publicly mentioned by the Sri Lankan Premier Solomon Bandaranaike in 1959. In December 1963, the First Ministerial Conference on Asian Economic Cooperation, held in Manila under the auspices of the Economic Commission for Asia and the Far East (ECAFE), as ESCAP was known then, adopted a resolution that called for the establishment of the Asian Development Bank. In March 1965, at its twenty-first session, held in Wellington, New Zealand, ECAFE approved a resolution to set up a high-level consultative committee of experts to draft the charter of the Bank,

IV.2. Public-private partnerships as a percentage of fixed capital formation, selected countries



Source: ESCAP, based on data from World Bank, Private Participation in Infrastructure database. Available from <http://ppi.worldbank.org>.

which was subsequently endorsed by the Second Ministerial Conference on Asian Economic Cooperation, held in Manila in November 1965. A year later, in December 1966, the opening ceremonies and official commencement of operations of ADB were held in Manila, the selected headquarters site for the Bank.⁶ Another institution for regional financial cooperation, established in 1974 on the initiative of ESCAP, was the Asian Clearing Union (ACU).⁷ The objective of ACU has been to facilitate intraregional trade through the periodic settlement of debits and credits accumulated by each member against the other members using a single unit of account.

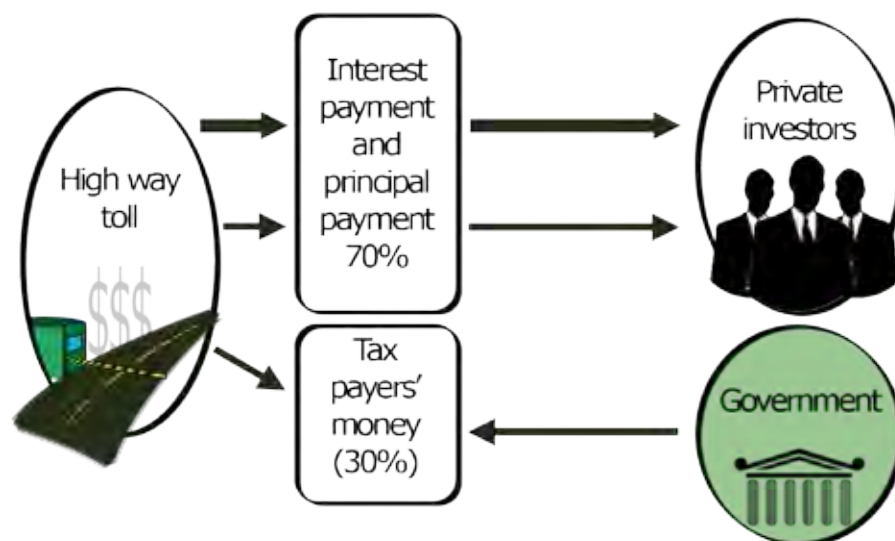
The Chiang Mai Initiative and its multilateralization

Between the mid-1970s and the late 1990s, the regional financial cooperation agenda was not very active in Asia and the Pacific. This changed as the economic disruption caused by the Asian financial crisis of 1997-1998

underlined the need for greater cooperation to provide liquidity support across the region. One of the most significant responses emerged at the ADB annual meeting in May 2000 in Chiang Mai, Thailand. This was the ASEAN swap agreement, a set of bilateral agreements which established a pool of foreign exchange reserves, starting at \$200 million and raised in 2005 to \$1 billion. In 2007, at the ASEAN+3 Finance Ministers' Meeting in Kyoto, Japan, the swap agreements were multilateralized in 2009 as the Chiang Mai Initiative Multilateralization (CMIM) Agreement, which increased the value of its multilateral swaps to \$120 billion. Of this pool, 80 per cent is contributed by the "plus three" countries – China, Japan, and the Republic of Korea – while the ASEAN countries provide the remaining 20 per cent. An independent regional surveillance office, the ASEAN+3 Macroeconomic Research Office (AMRO) was set up in 2010 and is responsible for conducting surveillance for CMIM operations.

FIGURE TITLE

IV.3. A possible scheme of revenue bonds



Source: N. Yoshino, "Raising market quality - integrated design of 'market infrastructure'", *Centre of Excellence Newsletter*, No. 11, 2011.

In 2009, the original 10 per cent ceiling of agreed amounts of currency swaps not subject to IMF conditionality was raised to 20 per cent. Nevertheless, 80 per cent of funds that could be made available are still subject to IMF conditionality. Another limitation is that participating countries need to agree to contribute on each occasion when a member requests support. This provision may allow countries not to contribute in cases when they face liquidity shortages, but at the same time it makes the system too slow to provide rapid liquidity support. Furthermore, the scale of funds available is relatively small (table IV.3).

Possibly because of these limitations, especially the link with IMF conditionality, the countries in the region needing liquidity support during the 2008/2009 financial crisis, such as Indonesia, the Republic of Korea and Singapore, approached the United States Treasury and Japanese Treasury for bilateral swaps rather than utilizing the CMIM. However, the leaders of ASEAN+3 have recently announced measures to strengthen CMIM, including (i) the doubling of the fund to \$240 billion, and (ii) allowing member countries to tap as much as 30 per cent of their own quota without an IMF aid package, a percentage that will rise to 40 per cent in 2014.⁸

Development of regional bond markets

The other initiative for financial cooperation resulting from policy discussions in the aftermath of 1997-1998 crisis has focused on the development of regional bond markets, which provide a relatively more stable source of debt financing than bank loans. Two initiatives have been taken in this regard.

Asian Bond Fund (ABF): The ABF was established by the Executives Meeting of East Asia-Pacific Central Banks (EMEAP), an association of central banks of 11 economies in the region (Australia, China, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand and Hong Kong, China). The first stage of the ABF was launched in 2003 with voluntary contributions of members to a dedicated fund with an initial size of \$1 billion, to purchase regional bonds denominated in United States dollars and managed by the Bank for International Settlements (BIS). The second ABF issue was denominated in member currency funds. Overall, the main goal of the ABF has been to further enhance the underdeveloped bond markets of member countries by enhancing the efficiency of financial intermediation and promoting financial stability.⁹

IV.3. Access to funds under the Chiang Mai Initiative Multilateralization and short-term liabilities, 2010

Country	Contribution (billions of US dollars)	Borrowing multiplier	Available funds (billions of US dollars)	Available funds as percentage of short- term liabilities, 2010
Brunei Darussalam	0.01	5.0	0.05	24.45
Cambodia	0.12	5.0	0.60	118.51
China	38.40	0.5	19.20	8.71
Hong Kong, China	4.20	2.5 ^a	10.50	8.78
Indonesia	4.77	2.5	11.93	62.90
Japan	38.40	0.5	19.20	6.21
Republic of Korea	19.20	1.0	19.20	51.72
Lao PDR	0.03	5.0	0.15	..
Malaysia	4.77	2.5	11.93	213.46
Myanmar	0.06	5.0	0.30	103.84
Philippines	3.68	2.5	9.20	73.44
Singapore	4.77	2.5	11.93	32.26
Thailand	4.77	2.5	11.93	58.47
Viet Nam	1.00	5.0	5.00	81.45

Sources: C. Sussangkarn, "The Chiang Mai Initiative Multilateralization: origin, development and outlook, Working Paper, Series No. 230 (Tokyo: Asian Development Bank Institute, 2010); and IMF BOP Statistics. Available from <http://elibrary-data.imf.org/>.

^a The borrowing of Hong Kong, China is limited to the IMF delinked portion as Hong Kong, China is not a member of IMF.

Asian Bond Market Initiative (ABMI):

Launched by ASEAN+3 in 2003, the ABMI aims to develop local-currency bond markets to make private savings available for regional investment needs. Efforts are being made to promote the demand for and issuance of such bonds. The relevant infrastructure and regulatory framework also needs to be put in place. In this connection, ASEAN+3 has recently endorsed the establishment of a \$700 million Credit Guarantee and Investment Facility (CGIF) that will provide guarantees on local currency denominated bonds issued by companies in the region. It is expected that such initiatives will help channel money into regional investment needs and also reduce the currency and maturity mismatches which made the region more vulnerable to external shocks in the past.

As a result of these and other efforts, Asian bond markets have expanded. Since 1997, the size of bond markets has increased 30-fold, but there is still a long way to go. Given, however, the slow progress in the adoption of the necessary national legislation and regulation, it will be some time before Asian bond markets offer a substantial source of financing for infrastructure development.

The Association of Credit Rating Agencies in Asia

Both credit and bond markets rely on rating agencies to ensure an efficient flow of information and as a common yardstick for measuring credit risk. Similarly, a regional bond market benefits from cross-national cooperation between rating agencies. For this purpose the Association of Credit Rating Agencies in Asia (ACRAA) was established in 2001. At present, the ACRAA encompasses 28 members from 14 countries in Asia and the Pacific. The members represent different accounting standards, legal frameworks, domestic capital market developments and business cultures. Owing to these discrepancies, however, the attitude of members towards the whole process also varies, with some countries promoting a more rapid harmonization process while others taking a more cautious approach.

In 2003, under the aegis of the ABMI, the ACRAA was tasked with strengthening domestic credit rating agencies and embarking on a process to harmonize their methodologies, criteria, definitions, benchmarks, policies and disclosures.

Subregional Infrastructure Investment Funds

ASEAN and SAARC have set up investment funds to finance infrastructure projects.

SAARC Development Fund (SDF) – The SDF was set up in 2010 as a part of SAARC financial cooperation, with an authorized capital of one billion SDRs and paid-up capital of \$300 million. The fund will finance infrastructure projects in the region, including the preparation of feasibility studies. It has three windows for financing: the social window for poverty alleviation and social development projects; the infrastructure window for projects in the energy, power, transportation, telecommunications, environment, tourism and other infrastructure areas; and the economic window devoted to non-infrastructure economic projects. The Secretariat of the SDF has been established in Thimphu, Bhutan.

ASEAN Infrastructure Fund (AIF) – The AIF was created as a part of an ASEAN initiative to mobilize resources for infrastructure development in 2010 with an initial equity base of \$485 million, of which \$335 million is provided by ASEAN members and the remaining \$150 million from the ADB. Malaysia and Indonesia are the major contributors of the equity capital of AIF, providing \$150 million and \$120 million, respectively. Based in Malaysia, the fund functions as a limited liability company and strives to have a total lending commitment of \$4 billion by 2020, which will be co-financed by the ADB to the tune of 70 per cent. Therefore, it expects to catalyze more than \$13 billion in investments in realizing the Master Plan on ASEAN connectivity adopted in 2010. The AIF will be administered by the ADB in terms of due diligence of the projects identified for funding.

Trade finance

The Asian financial crisis also highlighted the need to cooperate in trade financing, particularly in refinancing, rediscounting and reinsurance. The first step in this direction was taken in 2000 with the signing of bilateral memoranda of understanding on letter-of-

credit confirmation and risk sharing. These bilateral agreements were multilateralized two years later in Kuala Lumpur. In 2003, in Manila, three bilateral agreements were signed between India and Malaysia, India and Thailand, and Malaysia and the Republic of Korea. The 10th Annual Meeting of the Asian Exim Banks Forum held in Beijing in 2004, discussed the idea of a regional export credit agency for Asia to enhance credit, mitigate risks and finance exports.¹⁰

The recent global crisis has also spurred a number of initiatives. Among them is a trade finance programme set up by the ADB, which provides financing and guarantees through more than 200 banks for up to three years. In 2010, the programme supported 783 trade transactions worth \$2.8 billion with Bangladesh, Nepal, Pakistan, Sri Lanka and Viet Nam as the largest beneficiaries. Asian exporters are likely to need such a facility even more in the near future, since the European banks that traditionally finance about one-third of world trade, need to build up their capital bases to meet Basel III requirements, and thus are likely to provide less credit in Asia. A recent, novel initiative under the ADB programme involves a private insurance company that guarantees exporters' and importers' financing risks.

At the same time, to encourage trade within the region, a number of settlement procedures are being eased. As part of its strategy to internationalize its currency, China now encourages the use of local currencies (either currency of the two sides in bilateral trade) instead of United States dollars or other international currencies. This should help boost trade since smaller enterprises find it difficult to manage foreign-exchange transactions and to hedge against risk even though most currencies are convertible on the current account. In addition, the Asian Exim Banks Forum, formed in 1996, is comprised of the export credit agencies of Australia, China, India, Indonesia, Japan, the Republic of Korea, Malaysia, the Philippines and Thailand. Apart from sharing information and training resources, the Forum has fostered mutual cooperation among its members by facilitating lines of credit on a reciprocal basis.

Cooperation between stock exchanges

In pursuit of economies of scale and reductions in costs, stock exchanges across the world have been merging. Two examples are the formation in 2003 of Euronext through the merger of the Paris, Amsterdam and Brussels exchanges and the ongoing merger of the exchanges in New York and Frankfurt. Mergers, however, should proceed with care, as they can transform national monopolies into regional ones. This would not reduce costs for consumers as there would be less competitive pressure to pass on the realized cost advantages to them. The conditions for successful mergers between stock exchanges appear to be location in the same region and small pre-merger scales. Mergers, therefore, should not be considered as the only route for achieving integration. The ASEAN model for regional integration, for instance, has a cross-sectoral approach covering equity, bonds, derivatives and collective investment schemes. The pace of integration in each sector is tailored to the absorptive capacity of each sector and where relevant major regional players, such as Australia, China, Japan and the Republic of Korea, are also consulted. The main vehicles of integration of the seven ASEAN markets are harmonization of listing rules, creation of products favoured by ASEAN investors and joint promotional activities. The ASEAN Trading Link, which creates a single access point for ASEAN stocks, will become operational in mid-2012. Linking stock markets has great potential. The ASEAN area itself boasts over 3,600 listed companies. An important issue for cooperation between stock markets should be to enable cross-border listings and facilitating initial public offerings by companies of neighbouring countries. This could be extremely helpful for enterprises of the least developed countries to raise capital within the region.

Other initiatives

In addition to the above, there are several initiatives taking shape for regional co-operation in the fields of finance and macro-economic policy. Within the framework of groupings such as ASEAN, SAARC, ASEAN+3, the East Asia Summit and the Asian

Cooperation Dialogue (ACD), finance has been identified as an area of cooperation. Cooperation takes the form of periodic meetings of finance ministers and central bank governors (as in ASEAN and SAARC), as well as exchange of information and expertise. Central banks of the region have four groupings or cooperative associations with different permutations of membership, namely South-East Asia, New Zealand, and Australia (SEANZA), Southeast Asian Central Banks (SEACEN), the Network of Central Bank Governors and Finance Secretaries of the SAARC Region (SAARCFINANCE) and EMEAP, all of which promote cooperation between members with a focus on capacity-building and sharing of expertise. Finally, in December 2011 Japan and India instituted a bilateral swap arrangement worth \$15 billion.

Towards a development-friendly regional financial architecture for Asia and the Pacific

Although a number of initiatives have been taken in the area of financial cooperation in the region, most are in their early stages and have limited scope and coverage. There is a lot of room for enhancing cooperation in the region to exploit the opportunities. Possible elements of a regional financial architecture to support the region's development needs include, in addition to liquidity support, trade finance and capital markets cooperation, the creation of a large-scale facility for infrastructure financing. These elements are further elaborated below.

A large infrastructure financing facility

The region needs to further develop its financial architecture for development financing, which would include systems of intermediation between its large savings and its unmet investment needs. Lack of an appropriate mechanism is the reason why the bulk of the region's foreign exchange reserves have been invested in securities issued by Western governments, such as United States treasury bills. Infrastructure development in the Asia-Pacific region has been falling short of needs and often constitutes a bottleneck to growth. For the period 2010-2020, it has

been estimated that Asia and the Pacific will need to spend about \$8 trillion on infrastructure.¹¹ This projection is based upon estimates on how infrastructure investment has increased in each country of the region in line with a number of variables, including income per capita, agriculture value added, manufacturing value added, the extent of urbanization and population density using data for the period 1960-2005.¹² However, this assumes that countries will maintain their historical investment patterns. It does not estimate the true scale of the need. Most developing countries in the region have been underspending on infrastructure, so if they continue as before they will not be investing enough to close their infrastructure gaps. Hence, the real funding requirements of funds for closing these gaps may be larger than \$8 trillion. For instance, India alone is projecting a \$1 trillion requirement for infrastructure investment in its twelfth five-year plan (2012-2017), that is \$200 billion a year.

Experience shows that investing in infrastructure is highly profitable in economic and financial terms, justifying cooperation. Infrastructure assets offer stable and predictable cash flows, long-term income streams, low default rates and opportunities for socially responsible investing.¹³ In Asia and the Pacific, they will offer higher returns than those from developed country sovereign bonds. This observation is based on the performance of existing infrastructure securities, which although still on a modest scale, offer yields far above those of United States Treasury bonds (figure IV.4). For instance, Standard and Poor's Asia Infrastructure Index, which incorporates the 30 largest listed infrastructure firms in the region, has been outperforming the Global Infrastructure Index by a large margin; it registered (annualized) returns of 19.8 per cent versus 5.7 per cent for the Global Infrastructure Index at the end of 2010 after one year and 16.1 per cent versus 6.8 per cent after five years.

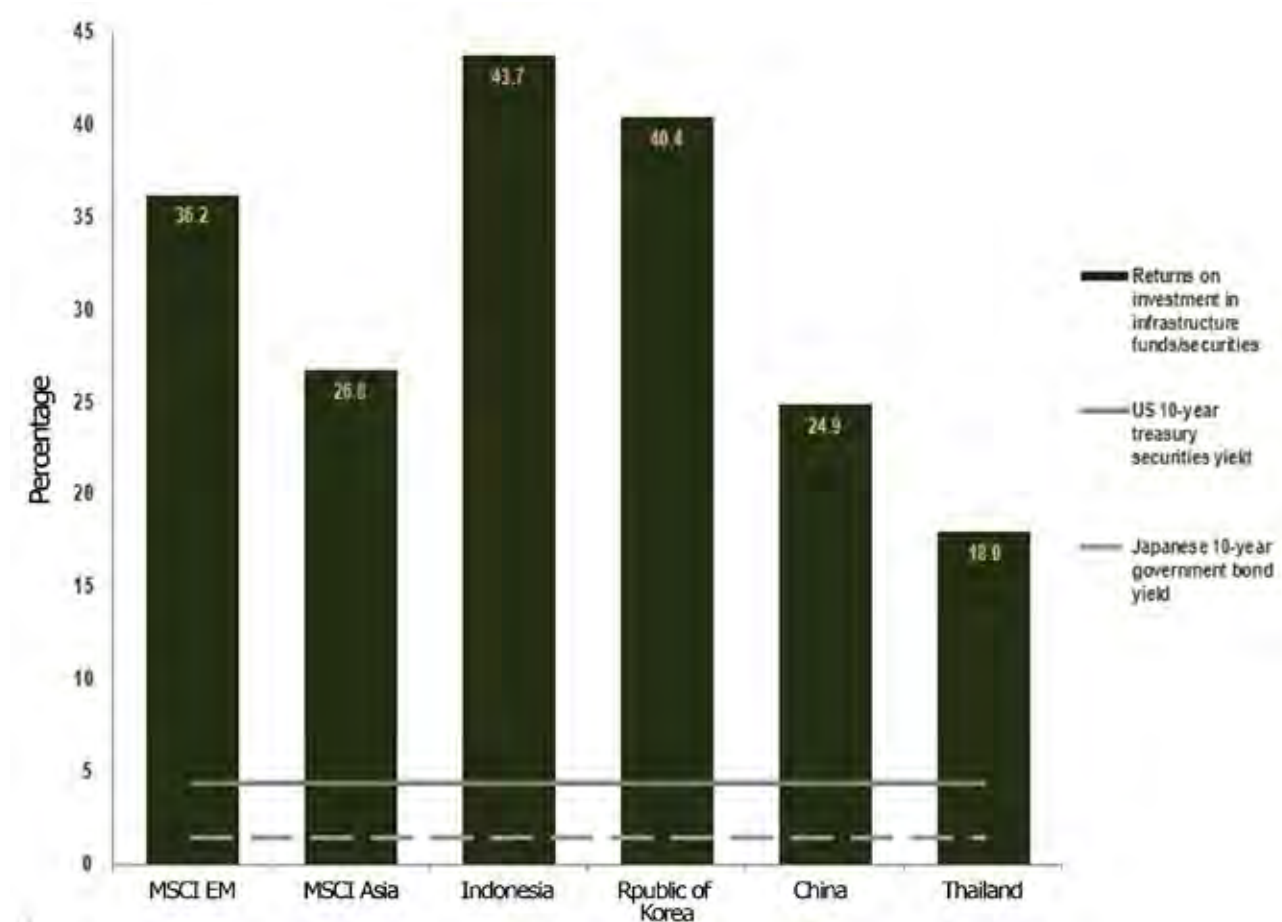
Investing in infrastructure across the Asia-Pacific region also offers risk diversification opportunities. Due to the local nature of demand for and supply of infrastructure

investment, infrastructure markets are not very well correlated, thereby offering an opportunity to diversify risks across economies/subregions and types of infrastructure. In addition, the infrastructure capital endowment of economies/subregions differs widely, providing another opportunity for diversification.

The two main methods of investing in infrastructure assets – infrastructure funds and listed assets (table IV.4) – exhibit different liquidity and access conditions as well as offer different degrees of diversification and risk profiles. Consequently, they target different types of investors. Infrastructure funds seek larger investors, in particular institutional investors. They carry low risk, but entry costs are high and liquidity is low. They provide a promising avenue for insurance companies or pension funds that need to match their long-term liabilities with long-term assets and that may not require liquid assets, but rather security of investments. Asia and the Pacific, faced with ageing populations and the consequent extension of systems of social protection, is likely to boost insurance companies and pension funds. These institutions will need more long-dated assets to match their portfolios with their liabilities and be required to do so on a marked-to-market basis as dictated by recent regulatory changes.¹⁴ Listed infrastructure assets, in contrast, may be better suited for individual investors as expenses are low and liquidity is high, though risk is also high.

To realize these financial and economic returns, existing forms of cooperation could be complemented with a new large-scale lending facility, as proposed in this study, to finance regional infrastructure with an initial paid-up capital of no less than \$100 billion. The actual financing triggered by such a new facility would be of a much larger scale as it could also issue bond securities and would attract private investment into the projects it participates in. The facility would benefit from low-funding costs as it would be backed by highly rated countries, as is the case of the largest multinational issuer, the EIB, which has a triple-A rating.¹⁵ Unlike many of its competitors, by issuing long-term securities,

IV.4. Returns on selected infrastructure assets and major treasury bonds over 2002-2007



Source: ESCAP calculations based on data from CEIC Data Company Limited. Available from <http://ceicdata.com/>; and MSCI, available from www.msci.com/products/indices/thematic/infrastructure/performance.html.

Notes: MSCI Emerging Markets Infrastructure Fund, annualized returns 2003-07 (i.e. 5-year returns as of 31 December 2007). MSCI Asia Infrastructure Fund, annualized returns 2003-07 (i.e. 5-year returns as of 31 December 2007). Country-specific returns reflect the compound aggregate growth rates of infrastructure-related stock market indices in each country during 2002-2007.

the facility would not face maturity issues. In addition, it can mitigate currency risks by issuing in local currencies and could use swap markets for hedging. Credit risk is expected to be skewed towards the initial phase of projects and to decrease disproportionately thereafter.

Given the underdeveloped bond markets in the poorest countries, the best option for financing infrastructure development would be direct lending. Nevertheless, the new large-scale facility to finance infrastructure in Asia and the Pacific could also buy infrastructure securities and thus help spur the development of a market for such securities – debt or equity – in the region.

Any new forms of cooperation should seek synergies with existing efforts. The proposed new facility would focus on projects with

identifiable revenue streams. It would complement lending activities by the ADB, owing to its large scale. Available lending facilities in the region tend to be small and tailored to national needs and incapable of meeting the financing requirements of infrastructure megaprojects with regional dimensions.

The new facility could also help coordinate different potential financial institutions such as multilateral and bilateral development agencies as well as private-sector sources. If needed, it could head a consortium of lenders. Its backing for infrastructure projects could also signal opportunities to private investors, which could help tap some of the \$7 trillion of personal wealth market.

As a regional body, the facility would also be in a position to take into account intraregional

TABLE TITLE
IV.4. Investing in infrastructure through funds and listed assets

	Infrastructure Funds	Listed Infrastructure Assets
Nature of investments	Active investment in a few projects	Exposure to the broad infrastructure market
Expenses	Moderate - typically 0.7-1% plus performance fees	Low - typically 0.5% to 0.6%
Liquidity	Low – investments usually locked up for a certain period	High – investments trade on an exchange and can be liquidated easily
Access	Low – funds usually open only to qualified or institutional investors	High – securities can be bought on the open market
Diversification	Low to moderate – funds can diversify, but there are due diligence and time constraints	High – a basket may encompass different infrastructure clusters and countries
Beta Risk	Low	High

Source: Standard & Poor's, "Listed Infrastructure Assets - A Primer", 18 March 2009.

spillovers. The facility would therefore target cross-border projects, from which it would be able to take fuller account of externalities. For a similar reason it should also seek investments in the region's less developed parts, as improving infrastructure in the periphery can benefit the entire region. In order to diversify risk, the facility would avoid concentrating on particular countries, subregions or industries. The proposed facility would also be well placed to support green priorities. This should attract a large pool of funds from both within and outside the region for investments in green infrastructure. The facility could also enhance resource, energy and eco-efficiency, help diversify energy sources and foster infrastructure that is climate smart. It could achieve this by applying criteria distinct from those of other investors, taking into account not just immediate financial returns but also broader economic, social and environmental consideration that could bring long-term benefits. In this way, it could, for example, reduce the damage from disasters that can result from, or be exacerbated by, myopic infrastructure planning.¹⁶

As with the EIB, the proposed facility could also finance research and development, which could enhance the region's competitiveness and help boost its long-term growth potential. One of the benefits of national infrastructure spending is that it can be used countercyclically to protect employment during periods of economic downturn. In addition, because of the large scale of its pooled resources, the facility could be able to

provide liquidity support in coordination with the CMIM.

In addition to financing infrastructure, the facility would ideally also provide advisory services and technical assistance. This could cover a project development facility and advisory services on financing from different sources, the instruments best suited for the particular project, risk assessment and mechanisms for mitigation.

The facility's governance should be independent. This would ensure that it would make decisions that were viable, both in terms of the quality of the projects and the sources of finance. Such decisions should be based solely on net present value and cost-benefit principles. Contributing governments, investing their foreign exchange reserves, would need to know that these funds were being used for secure, viable investments. It should therefore be operationally independent and be able to rely on high-quality experts. The facility would not operate with government guarantees, so its lending would not imply any contingent liability that could be transferred into public debt.

A large-scale regional mechanism would thus be able to help coordinate the development of regional infrastructure and enhance network effects, boost efficiency and achieve economies of scale while signalling profitable opportunities for private investors.

Development of bond and capital markets:

The development of regional bond markets and cooperation between the region's stock exchanges would also facilitate investment flows within the region. A framework needs to be developed to enable cross-border listings in the region to allow corporate entities of countries with relatively underdeveloped capital markets to raise capital in other regional markets.

Enhancing financial resilience and crisis management:

In the area of crisis prevention and response, it is important to scale up and build further on the pioneering CMIM to expand its scope and coverage. More importantly, the decision-making mechanism needs to be simplified so that funds can be mobilized within a short time. Furthermore, to make the facility popular with countries it needs to be delinked from IMF conditionalities and have its own surveillance and monitoring facility and its own conditionalities that are countercyclical and development oriented, unlike IMF conditionality that is procyclical. While the size of CMIM funds is being doubled and a surveillance and monitoring office is being set up, its coverage needs to be extended beyond ASEAN+3 to other systemically important countries in the region, such as Australia, India, the Russian Federation and any other country interested in participating. If this enhanced facility could be able to provide a rapid disbursement of funds, it would become a regional lender of last resort to deal with financial emergencies and gradually assume the functions of a regional monetary fund. The importance of a well endowed truly regional crisis response facility cannot be over-emphasized as it could reduce pressure on governments to build large foreign exchange reserves for protecting their economies against speculative attacks and liquidity crises. Hence, it could assist in reducing the need for running current account surpluses for the countries in the region. Enhanced regional cooperation for crisis response and management should not, however, be regarded as an alternative to full participation in global economic relations. Instead, it should be seen as a complement, filling in the gaps and establishing the building blocks for global multilateral cooperation.

Cooperation in trade finance: Trade financing is another area with room for enhancing cooperation to ensure an undisrupted deepening of trade interdependence in the region. Extending the coverage of bilateral and multilateral agreements is crucial to achieve this. In addition, the idea of a regional agency with a high rating to provide export credit and risk mitigation mechanisms could be operationalized. Strengthening these mechanisms would limit the risks related to developments in global trade financing markets. Settlement procedures should be further simplified. Foreign exchange risks can be mitigated by settling in the currencies of the trading parties instead of international currencies. Offshore markets, however, should only be developed once there is a consistent regulatory and supervisory structure. This way offshore-related financial volatility and arbitrage could be minimized. Also, the Asian Exim Banks Forum, which has been active since 1996 as a regional body, could move forward to create an apex regional trade finance institution, for which it has developed an initial concept, to facilitate cooperation in trade finance.

Closer cooperation between central banks and financing institutions:

As observed earlier, a number of cooperative bodies of central banks have been set up in the region, such as SEANZA, EMEAP, SAARCFINANCE and SEACEN, facilitating the coordination, exchange of information and cooperation in training and capacity building between them. However, there is need for a broader regional body that could facilitate region-wide information sharing and to assist in closing the capacity gaps.

Capacity-building in public-private partnerships:

The enormity of resource requirements in Asia and the Pacific for infrastructure development makes it clear that a strong contribution from the private sector is requisite for this endeavour. In addition to bridging funding gaps, the private sector can help overcome the public sector's limited delivery capacity and bring efficiency and advanced technology to the operation. For this purpose, governments are increasingly turning to public-private partnerships (PPPs)

to develop and operate both economic and social infrastructure. Some governments have made considerable progress in the areas of institutional development, capacity-building, streamlining administrative processes and financing and approving new projects. Important steps have included: formulating PPP policy frameworks (Bangladesh, India, Indonesia, the Republic of Korea); enacting new laws or amending existing ones to create a PPP-supportive environment (Cambodia, Fiji, Indonesia, the Philippines, Republic of Korea, Turkey, Viet Nam, and many states in India); establishing institutional mechanisms to provide government grant/support to PPP projects (Bangladesh, India, Republic of Korea); establishing special infrastructure financing institutions (Bangladesh, India, Indonesia, the Russian Federation); creating special PPP units in government (Australia, Bangladesh, Fiji, India, Indonesia, Malaysia, Pakistan, Republic of Korea, Sri Lanka, Turkey); streamlining administrative processes (India, Republic of Korea), among others. As a result there has been a considerable increase in PPPs for infrastructure. Between 2005 and 2009, some 826 projects worth around \$204 billion reached financial closure. However, a few countries, namely China, India, the Russian Federation and Turkey accounted for a bulk (82 per cent) of these projects.

In the aftermath of the global financial crisis, some governments have been reinvigorating PPPs as a part of stimulus packages sometimes through policy and fiscal measures, such as debt guarantees, direct financial stakes, tax free bonds, lower equity capital requirements and sharing interest rate risks. International financing institutions have also considered various measures. For example, the International Financial Corporation (IFC), the private-sector arm of the World Bank, created a global \$300 billion equity fund and a loan financing trust to support PPPs.

There is need for building capacity for fuller exploitation of PPPs for infrastructure development in the region. This would include a better understanding about PPPs at the policymaking level with a clear policy on risk sharing, capacity for developing bankable projects and managing contracts, standardized administrative processes and

project documents, clear legal and regulatory regimes and availability of long-term finance. In these areas, regional cooperation for sharing of development experiences and capacity-building drawing upon expertise of countries that started earlier may be fruitful. Regional organizations, such as ESCAP and the ADB, may assist in building such capability in the region.¹⁷

Regional cooperation to reform the international financial architecture:

The development of a regional financial architecture would also enable the region to coordinate its policies and develop a regional perspective on the reform of the international financial architecture, including on issues such as an SDRs-based global reserve currency, a global tax on financial transactions to moderate short-term capital flows and international regulations for curbing excessive risk taking by the financial sectors. The Asia-Pacific region has eight members in the G-20, namely Australia, China, India, Indonesia, Japan, the Republic of Korea, the Russian Federation and Turkey. This is more than any other region and highlights systemic importance of the region. With effective coordination of their positions, these countries will have greater influence in shaping the reform of the international financial architecture, so that it is best tuned to their developmental needs. In these and a host of other areas, the Asia and Pacific region has the opportunity to further integrate and coordinate its actions, thus not only ensuring its recovery and future dynamism but also supporting the global economy to the greatest extent possible.

The ESCAP Commission at its 66th Session held in Incheon, Republic of Korea in May 2010, adopted a resolution seeking a task force to elaborate the elements of a regional financial architecture that could assist the Asia-Pacific region with increased capital availability for infrastructure development.¹⁸ As per the request, the secretariat is engaged in further work on the subject that will hopefully feed into the policy agenda of the region in the coming years.

ENDNOTES

¹ Wealthy defined as individuals with net worth that exceeds \$1 million.

² International Financial Services London, 2009.

³ For instance, Thailand's Bangkok International Banking Facilities (BIBF) has been significantly scaled down and Malaysia's Labuan International Offshore Financial Centre is no longer available as an offshore market for MYR-foreign currencies after the imposition of capital controls in 1998.

⁴ A non-deliverable forward (NDF) is a contract in which counterparties settle the difference between the contracted NDF rate and the prevailing spot rate by an agreed notional amount. In contrast to a forward contract, where the full value of the amount contracted is delivered at the time of settlement, in NDF contracts only the difference between the NDF rate and the spot rate is delivered, which reduces counterparty risk considerably.

⁵ Erol and Ozuturk, 2011.

⁶ UNESCO, "Archives of international organizations: Asian Development Bank". Available from www.unesco.org/archives/sio/Eng/presentation.php?idOrg=1002 (accessed May 2012).

⁷ Asian Clearing Union, "History". Available from www.asianclearingunion.org/History.aspx.

⁸ "Asean+3 to double Chiang Mai Initiative safety net to \$240 Bln", *Wall Street Journal*, 3 May 2012. Available from <http://online.wsj.com/article/BT-CO-20120503-703698.html>.

⁹ Rajan, 2008.

¹⁰ See www.asianeximbanks.org/meeting10.asp.

¹¹ ADB and ADBI, 2009.

¹² Bhattacharyay, 2010. See also Fay, 2001; Chatterton and Puerto, 2005; Yepes, 2004.

¹³ Inderst, 2009.

¹⁴ Bodie and Briere, 2011.

¹⁵ CAF has also been successful in tapping the United States, European and Japanese markets owing to its investment grade, though the costs are significantly higher as it is rated at A+.

¹⁶ For instance, it is well known that investing in climate-smart infrastructure would also reduce the frequency or size of disasters, but the lack of sufficient investment in such infrastructure results in more disasters, adding to higher costs altogether.

¹⁷ ESCAP, 2011b.

¹⁸ See E/ESCAP/66/L.11, 19 May 2010.



Photo by Salapol Ansusinha





Five

Economic cooperation for addressing shared vulnerabilities and risks

Greater regional integration can not only help countries capitalize on their strengths but also assist them to address shared vulnerabilities such as food and energy insecurity, disasters, pressures on natural resources, social exclusion and rising inequalities.

Regional economic integration has enormous potential for boosting economic growth and narrowing development gaps across countries, but countries can also cooperate to protect themselves against a range of current and future threats. As with the opportunities, these too cut across national boundaries. This chapter shows how these issues are currently being addressed through bilateral, subregional or regional cooperation. In addition, it argues that in the light of the interrelations between food insecurity, disasters and pressures on natural resources, and energy security (discussed in chapter three), an integrated approach to regional cooperation encompassing all these areas would be the most efficient way to reduce their risks and cooperate to articulate the most effective policy responses.

Food security

In the past half-century, Asia and the Pacific has made tremendous progress in food security.¹ Across the region, farmers have boosted agricultural productivity and output, especially of rice and wheat, making food available at affordable prices and lifting millions of people out of hunger. The Green Revolution improved seeds, fertilizers and pesticides and dramatically increased crop production. Although the world population increased by 60 per cent between 1970 and 1995, food production rose faster, resulting in a nearly 30 per cent increase in cereal and calorie availability per person. By increasing the supply of food and reducing prices of food staples in Asia, the Green Revolution benefited poor people's nutrition and helped reduce poverty, with the absolute number of poor people declining by 28 per cent between 1975 and 1995.²

In spite of this progress, the region continues to face persistent poverty and hunger and is still home to about 65 per cent of the people suffering from hunger. Of particular concern is the situation in South Asia, where nearly 43 per cent of children are malnourished.³

It may seem surprising that a region that has in many ways been so successful should still experience serious problems with something as basic as food.⁴ The main obstacle is not an overall lack of food. The region produces enough food to enable everyone to be properly nourished and lead a healthy and productive life.⁵ The problem is that many people are not consuming enough of that food.

They are prevented from doing so by a wide range of factors – including poverty, natural disasters, conflict and war, poor access to resources, lack of employment opportunities, a lack of education, and underinvestment in agriculture, as well as instability in the world food and financial systems.⁶

Food security is a situation in which “all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”.⁷ It has four dimensions: availability, access, utilization and stability. Availability is affected by the levels of food production and stocks, and net trade. Access depends on the ways in which the available food is distributed, as well as on incomes, expenditures, markets and prices. Utilization refers to the way in which the body uses food, which is affected by feeding and child-care practices, food preparation, dietary diversity, and on how food is shared within the household. Stability involves taking into account potential disruptions, as a result, for example, of bad weather, political instability or economic crisis.

Too often, food security is considered a problem of availability through production, and one that is best dealt with through national policies, including those that aim to achieve food self-sufficiency. However, food security also has strong regional dimensions. For instance, the High Level Task Force on the Global Food Security Crisis pointed to “strong intraregional complementarities between ecological, production and consumption areas and the need for shared management of commonly held transboundary resources – such as rivers and river basins, aquifers, pastoral lands and marine resources”.⁸ In addition, the availability of food can be affected by trade policies of exporting countries. What follows is a review of selected cooperation efforts pertaining to food security across Asia and the Pacific.

Policy coordination

Some policies related to food security can be coordinated at the regional or subregional level. The ASEAN, for example, began

addressing food security in 1998 with a Strategic Plan of Action on ASEAN Cooperation in Food, Agriculture and Forestry. Since 2008, it has implemented the ASEAN Integrated Food Security (AIFS) Framework and the Strategic Plan of Action of Food Security (SPA-FS).⁹ The SPA-FS, while addressing increased food production, also articulates common objectives related to the reduction of post harvest losses, market promotion, trade for agricultural commodities and inputs, and ensuring food stability. It specifies five priority commodities: rice, maize, soybean, sugar and cassava. The framework has four components: food security and emergency relief; sustainable food trade development; an integrated food security information system; and agricultural innovations. The ASEAN-United Nations Meeting on Food Security in 2008 developed a Convergence Matrix of Programs and Activities to allow international organizations and countries to coordinate individual activities within the framework.¹⁰

South Asia has made similar efforts at policy coordination. The SAARC Agricultural Vision 2020 emphasizes the importance of programmes on technology, seed quality, and incentives to producers; sustainability in the use of natural resources; food safety; the availability of rural non-farm employment opportunities; and capacity-building.¹¹ To translate this vision into reality, the SAARC Regional Strategy and Programme for Food Security, in partnership with the Food and Agriculture Organization of the United Nations (FAO), has identified a range of projects, which address agricultural productivity, the protection of natural resources, technology, bio-security, food safety and agricultural trade.¹² Five of these projects are being developed with technical assistance from the ADB.¹³

In 2010 regional leaders met to endorse the Framework for Action on Food Security in the Pacific. The Framework has a number of ‘themes’ covering such issues as leadership and cooperation, regulatory frameworks, enforcement and compliance, and public-private sector collaboration. It aims to enhance the production, processing and trading of safe, nutritious local food. At the same time,

the framework is designed to protect infants and vulnerable groups while empowering consumers.¹⁴ Implementing this plan requires a broad-based partnership among national, regional and international agencies.¹⁵

Regional food reserves

A good example of successful regional cooperation aimed at promoting stable access to food is the development of regional food reserves. Throughout human history, households and communities have tried to maintain food stocks that could be drawn upon at times of scarcity. However, doing so on a larger scale, at a national level, can be costly. As the High Level Task Force on the Global Food Security Crisis pointed out, excessive stockpiling to build national food reserves can exacerbate food shortages and inflate prices.

One option is to establish global stocks. The first effort of this kind took place in 1975 when the United Nations aimed to establish an International Emergency Food Reserve under the World Food Programme, with initial stocks of rice and wheat of 500,000 tons and a final target of 30 million tons. However, it did not develop in the way originally intended and currently survives as a voluntary facility to provide emergency relief either from food stocks or budgeted funds.

Another option is to provide facilities at the regional level. Such schemes should be able to address the most common food contingencies, frequent supply-demand imbalances and various emergencies and disasters. These schemes can take the form of real or virtual stocks of food reserve agreements, financial instruments or weather risk insurance or bonds.

Within Asia and the Pacific, the first steps in this direction were taken in 1979 when ASEAN leaders signed the agreement on the ASEAN Food Security Reserve, proposing a rice reserve of 50,000 tons, to increase by 1997 to 67,000 tons and by 2004 to 87,000 tons. This initiative failed, due mainly to a lack of funding and poor administrative arrangements but also as a result of cumbersome procedures on

prices, terms and conditions of distribution. In 2004, the ASEAN ministers agreed to relaunch the scheme as the East Asia Emergency Rice Reserve, initially on a pilot basis. Established with clearer stock release guidelines, the reserve facilitated the transfer of 10,000 metric tons of rice from Viet Nam to the Philippines in March 2010, and developed programmes to help disaster victims in Cambodia, Indonesia, and Myanmar.

In October 2011, based on this successful pilot, the ASEAN countries, plus China, Japan and the Republic of Korea (ASEAN+3) agreed to establish a permanent mechanism in which they would earmark a quantity of rice on a voluntary basis. This forms the ASEAN+3 Emergency Rice Reserve (APTERR), which includes both earmarked and physical stocks. The current earmarked reserve is 787,000 tons, of which 89 per cent is to come from the plus three countries. Although the agreement stipulates a physical stock, the system mostly operates through financial stocks, given that rice is a commodity with high storage costs. Contribution to the stock is voluntary. Japan stated its willingness to provide 250,000 tons, China 300,000 tons, the Republic of Korea 150,000 tons and ASEAN member states 87,000 tons. Thus, the addition of the plus three countries has helped ASEAN countries raise the scheme's level of earmarked rice reserves, removing a stumbling block identified in the pilot that the reserve was too small for the scheme to function optimally.

In emergencies, the reserves are made available according to tiers. Tier 1 involves releasing earmarked reserves under special commercial transactions. In this case, the APTERR management team effectively serves as a mediator between provider and recipient countries – as happened in 2010 under the pilot East Asia Emergency Rice Reserve when the Philippines obtained 10,000 metric tons of rice from Viet Nam. Tier 2 offers support through loans or grants agreed bilaterally between countries. Tier 3, which is triggered in acute emergencies, involves using rice stockpiles donated free of charge by member States. During the pilot phase, a similar mechanism distributed nearly 3,000 tons of rice, mostly procured through cash

donations, from the Government of Japan, for distribution in Cambodia, Indonesia, the Lao People's Democratic Republic and the Philippines. In addition, in 2009, Thailand sent 520 tons of rice to the Philippines to assist the victims of Typhoon Ketsana.

There have also been efforts to establish regional food reserves in South Asia. In 1988, the SAARC established a food security reserve, which aimed to collect 243,000 tons of rice and wheat. This was never utilized, even in 2007 in the aftermath of Cyclone Sidr which devastated much of Bangladesh. An important reason was that the system lacked a mechanism for effective negotiation or for the delivery of emergency supplies and also entailed burdensome border formalities. After much debate, the SAARC leaders agreed in 2007 to relaunch the system as the SAARC Food Bank. This specifies guidelines on withdrawals and negotiations, defines what is meant by food shortages and establishes food-grain quality standards. Even so, the system still has structural weaknesses, lacking a clear mechanism for releasing stocks and failing to identify storage facilities or border points to which stocks can be delivered.

Food reserve systems need to operate with clear guidelines and on a sufficient scale, and they should establish ways of transferring stocks speedily across borders without unduly relaxing safeguards for plants, animals and humans. The ASEAN system, by clarifying questions related to prices, terms and conditions of commercial transactions, is a good example of how to address these issues effectively.

Information systems

Monitoring food security and taking the necessary action requires a solid information base. This should include statistics on demand, supply, prices, and household income and expenditure patterns, along with vulnerability assessments, food insecurity mapping, livestock diseases and information on climate and weather patterns. Regional bodies can provide value added in monitoring food security by facilitating the establishment

of information systems related to agriculture and rural statistics, thus enhancing standards of transparency and comparability.

There is also scope for regional cooperation to help build national systems and technical capacity for identifying food insecurity hotspots and groups that face food insecurity, as well as for tracking, collecting, analysing and disseminating statistics at national and local levels. These systems should include vulnerability mapping that combines information on food security statistics with other socioeconomic data. They should also form the basis for early warning mechanisms for food security, including better weather forecasting and timely notifications of impending disasters. An important institution for this purpose is the Asia and Pacific Commission on Agricultural Statistics, a statutory body of FAO that brings together officials from the Asia-Pacific region to review agricultural statistical systems and exchange ideas on food and agricultural statistics.¹⁶

There are also subregional initiatives. ASEAN, for example, has set up a food security information system.¹⁷ Phase I, which ran from 2003 to 2007, concentrated on building human resources and an information network, while Phase II, 2008 to 2012, has been developing early warning systems and publishing commodity outlooks. Another subregional initiative is the Pacific Agriculture and Forest Policy Network, which aims to facilitate communication, disseminate information, build capacity and enhance awareness on issues related to agriculture and forest policy.

Cooperation in agricultural research

Agricultural research is a key driver for enhancing agricultural productivity through technological change.¹⁸ Regional cooperation on research is critical when countries face common risks, such as climatic variability, reduced water supplies, loss of biodiversity and effects of mycotoxins and microbial hazards on food quality. It is also critical to address research needs related to opportunities embedded in transboundary resources.

One of the key organizations for sharing scientific information and knowledge is the Asia-Pacific Association of Agricultural Research Institutions (APAARI). Established in 1991, the Association works to support national agricultural research systems in about 20 economies, and also works with centres affiliated with the Consultative Group on International Agricultural Research and regional organizations. It aims to promote cooperation on priority programmes, exchange scientific and technological knowledge, improve research capacity and strengthen linkages between national, regional, and international partners.¹⁹

SAARC has also been making efforts to coordinate regional research in agriculture. In 2005, for example, it adopted the Global Framework for Containment of the Priority Trans-boundary Animal Diseases to establish laboratories to contain three priority diseases: highly pathogenic avian influenza, foot and mouth disease and peste des petit ruminants, a highly contagious viral disease of small ruminants. In addition, the SAARC agriculture ministers have called for meetings among scientists and institutions for research and extension, and for exchange visits among extension specialists. This could pave the way for regional projects and joint ventures. The SAARC Agricultural Centre is another effort which aims to strengthen regional cooperation in agricultural research and technology by fostering the exchange of regionally generated technical information.

Agricultural biodiversity is indispensable for plant stability, and therefore, sustaining crop production, food security and livelihoods.²⁰ The sustainability of such systems depends on the health of all – plants, animals, land, water and soil. An activity carried out in one place or one sector can have far-reaching implications on everything else in the system. Difficulties may arise when systems are shared by many countries, as in the Ganges or the Greater Mekong river basin. Ensuring stability is more difficult when resources are spread across different countries. In such situations, regional cooperation would be most beneficial.

One example is the Greater Mekong Subregional Initiative, launched by Cambodia, China, the Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam, with financial assistance from ADB.²¹ This initiative has innovated programmes that address common resources and facilitate cross-border agricultural trade and investment.²² Another example is the Pacific Agricultural Genetic Resources Network, which works with countries in the Pacific to conserve their crop genetic diversity by stimulating collaboration among researchers.

Promoting further regional cooperation for food security

Asia and the Pacific is very diverse and thus full of opportunities for collaboration in food security: China and India are the two largest countries in terms of food production and consumption; Asia houses the largest rice exporter – Thailand – as well as the largest importer, namely the Philippines. The region is also home to one of the largest rainforests and biodiversity hotspots in the world and blessed with some of the most spectacular and resource rich river basin systems, such as the Mekong and the Ganges-Brahmaputra, and large marine ecosystems, such as the Bay of Bengal. The challenge is to harness these assets through programmes that go beyond political boundaries and the mere availability of food to arrive at a cohesive strategy based on the core factors underlying food insecurity.

Regional mechanisms, including regional economic integration organizations, such as ASEAN and SAARC, can facilitate national efforts towards achieving food security through their active involvement in four interrelated areas: (i) improved management of shared financial and human resources and natural and physical capital; (ii) harmonization and coordination of national agricultural, food and other supporting policy frameworks, including macroeconomic policies, so as to ensure national policies that do not circumvent regional efforts; (iii) assuring the availability of regional risk management mechanisms so that regional food supplies and resources are utilized effectively to manage food insecurity

in times of crises; and (iv) facilitation of regional food and agricultural commodities so as to ensure that overriding national compulsions do not destabilize long-term regional food security.

Notwithstanding the role that regional efforts can play in achieving food security, national efforts and programmes, including those to increase agricultural investment, empower women and marginalized groups and improve access to quality and nutritious foods. Therefore, regional programmes must find innovative approaches to support these national efforts through sharing knowledge, accurate and timely information and technologies available for enhancing food production, and capacity building. For this purpose, the United Nations and its affiliated agencies can play a useful role. As the example discussed above, the innovative collaboration between ASEAN and the United Nations in preparing the AIFS and SPA-FS can be replicated in other areas. Similarly, FAO has collaborated with SAARC in identifying a more integrated food security strategy.²³

Food systems comprise many groups – producers, consumers, processors and distributors – that are linked through trade across national borders. At both national and international levels, food production involves many ecological and social costs which are not reflected in the price of food and agricultural commodities. These include inappropriate farming, fisheries and livestock-rearing, the use of high doses of pesticides and chemical fertilizer and concerns about food safety, processing and storage.

In these circumstances, the jurisdiction of national governments often becomes irrelevant. The most appropriate forum is therefore a regional or subregional organization. Proposals have been mooted to establish a common food security policy for East Asia, with the ultimate objective of developing it into a common agricultural policy for Asia. In addition to enhancing regional food security, such a policy could also ensure that food and agricultural commodity prices reflect their true cost by including positive and negative regional externalities

in the production and distribution of food and agricultural commodities. This will be a prerequisite for ensuring the minimum safety and quality standards of food available in markets. The United Nations and other regional entities need to recognize the existing national efforts so as to develop a truly regional and comprehensive approach to food policy.

There are also opportunities at the regional level to spread the benefits of advanced technology. Some countries, for example, use satellite technology for monitoring weather and food production patterns while others lack this capacity. Regional bodies, including ESCAP, are ideally positioned to facilitate negotiations on technical, institutional and policy-level issues that facilitate food security at the regional level.

Dealing with disasters

The world seems to be increasingly affected by natural hazards, such as droughts, floods, storms, volcanic eruptions, earthquakes and tsunamis. In 2011, two mega-disasters in the Asia-Pacific region alone, the great Eastern Japan earthquake and tsunami and the South-East Asia floods caused an estimated \$267 billion in combined economic losses and resulted in over 18,000 deaths. Estimates of the global economic losses of the disaster in Japan amount to as much as \$366 billion.²⁴ In the light of these large losses, it seems necessary to re-examine current strategies and accelerate the implementation of measures to reduce the risk of future disasters. Such strategies should also involve regional cooperation for setting standards, pooling resources and sharing knowledge.

Overall disaster risk depends on three factors: (i) hazards – the occurrence of events such as earthquakes, storms or droughts, (ii) exposure – the number of people and the scale of assets exposed to such events, and (iii) vulnerability – the capacity to cope with and recover from hazard events.

According to ESCAP estimations, all Asia-Pacific subregions have experienced a reduction in their vulnerability to disasters

V.1. Deaths and economic damages and losses due to recent mega-disasters in Asia and the Pacific

Disaster	Number of people affected (million)	Number of people killed	Number of people missing	Number of people injured	Economic damages and losses (billion of US dollars)
South-East Asia floods (late 2011)	25.9	2 735	..	..	46.6
Great Eastern Japan earthquake and tsunami (March 2011)		15 845	3 380	5 894	210
Wenchuan earthquake China (May 2008)	45.6	69 227	17 923	..	85
Indian Ocean tsunami (December 2004)	5	184 167	45 752	..	10

Sources: Asia Pacific Disaster Report 2010; Office of Civil Defense (OCD), Philippines; Department of Disaster Prevention and Mitigation, Royal Irrigation Department, Thailand; National Police Agency, the Cabinet Office, Japan; Department of Hydrology and River Works, Cambodia; Hydro-Meteorological Services of Viet Nam; Department of Meteorology and Hydrology, Lao Peoples' Democratic Republic; Relief and Resettlement Department, Myanmar.

over the past two decades.²⁵ This suggests that policymakers can improve a country's resilience to disasters through early warning systems, infrastructure investments and strengthening disaster preparedness and response efforts. However, in spite of the region's reduced vulnerability, exposure to disasters has been on the rise because, as populations grow, more people live in disaster-prone areas. As a result, the number of those affected by disasters tends to rise. Furthermore, the region's poor continue to be the most exposed. This suggests the need for disaster risk reduction policies to focus especially on the most vulnerable groups, such as the elderly, women, children and persons with disabilities.

The highest average annual damages and losses in Asia and the Pacific during the period 1990-2010, \$30 billion, were the result of floods and earthquakes. However, this average is expected to be surpassed in 2011, as the estimated economic losses caused by that year's floods in South-East Asia alone amounted to more than \$47 billion. In recent years, a relatively small number of mega-disasters have caused disproportionate economic and human losses (see table V.1). The frequency and intensity of extreme

weather events, such as heat waves and heavy precipitation, is likely to increase in future as a consequence of climate change (see box V.1).

Disasters affect all countries, but can be particularly destructive in smaller and lower income countries. In Fiji, for example, they have resulted in marked fluctuations in GDP (figure V.1). Within countries, disasters generally hit hardest at the poorest groups who live in high-risk environments, vulnerable, for example, to flooding and landslides – and who have fewer ways to shield themselves. Women and the elderly too are also disproportionately affected. An estimated 70 to 80 per cent of those who died during the 2004 Indian Ocean tsunami, for example, were women. And the elderly were disproportionately affected in the earthquake and tsunami that hit Japan in 2011.²⁶

Regional impact of disasters

Some disasters have a regional impact simply because natural phenomena extend across wide geographical areas. The 2004 Indian Ocean tsunami, for example, killed more than 184,000 people in 14 countries across Asia and the Pacific. Large explosive volcanic eruptions can also cause widespread economic and

BOX V.1. Climate change and disasters

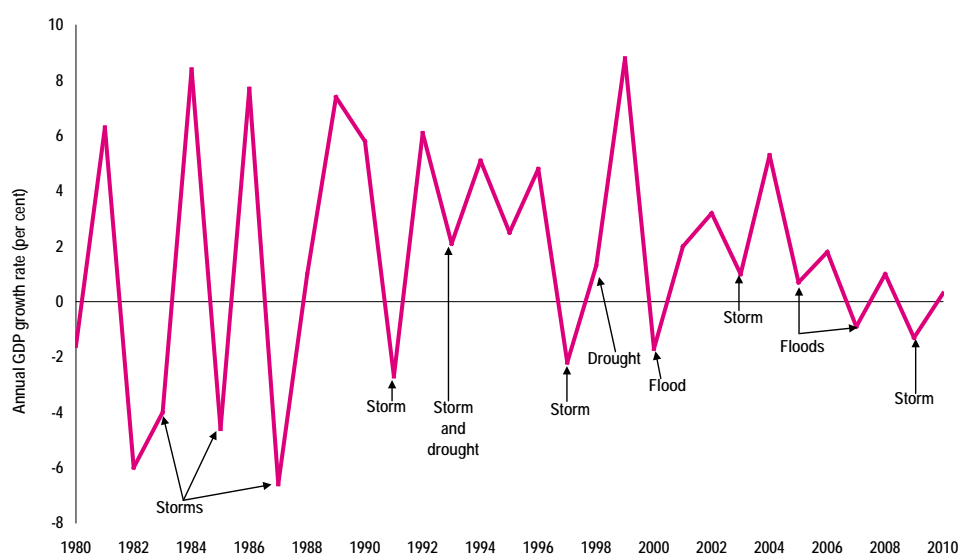
Disasters are often caused by extreme weather events, such as heavy downpours, heat waves and droughts, which have increased in frequency, intensity and duration in recent decades. The year 2010, for instance, tied with 2005 as the warmest year on record globally, with 19 countries setting national high-temperature records and the Russian Federation losing one third of its wheat crop. That year also recorded the highest global precipitation since 1900, which led to devastating floods. For instance six million people were displaced in Pakistan as a result of record floods that year. On average, such extreme weather events, when aggregated over decades, show an increasing trend. Over the past 50 years, global rainfall has increased by 7 per cent, and the occurrence of record high temperatures has become much more common than that of record low temperatures.

Although individual weather events cannot be attributed to climate change, it is possible to attribute changes in the *risk* of certain categories of extreme weather to climate change. Risks are represented by probability distributions, which describe what we should expect on average over a long period of time. A good understanding of such risks is crucial to properly assess the vulnerability of people and assets to extreme weather events and to implement policies to reduce their impact.

The recent Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation published by the Intergovernmental Panel on Climate Change (IPCC) argues that global warming increases the risk of four categories of extreme weather events – extreme heat, heavy downpours, drought and drought-associated wildfires. For such events, the historical evidence is consistent with both the science and simulations of the impacts of higher green house gas concentrations. The relationship between global warming and other extreme weather phenomena is weaker, as in the case of hurricanes, or nonexistent, as in the case of tornadoes.

Despite the progress made in understanding the relationship between climate change and extreme weather events, much more work is needed to refine risks assessments in the Asia-Pacific region. For that purpose, it will be necessary to improve substantially the collection of data, especially at the local and regional levels. With improved data and quantitative models with high resolution, it would be possible in future to prepare more precise analyses of the impacts of climate change at the national and subnational levels, which, in turn, would enable policymakers to improve their planning for disaster mitigation and assist farmers, for example, to plant crops that would be more suitable for weather conditions in the future.

Sources: Huber and Gullede (2011); IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, Fact Sheet. Available from http://ipcc-wg2.gov/SREX/images/uploads/IPCC_SREX_fact_sheet.pdf.

V.1. Fiji, annual fluctuations in GDP relative to the incidence of disasters, 1980-2008

Source: ESCAP based on data from www.databank.worldbank.org and International Disaster database, www.emdat.be.

human losses. For example, the costs to aviation of the 1991 Mount Pinatubo eruption in the Philippines exceeded \$10 billion. In addition, this eruption led to a significant drop in temperatures worldwide of close to four degrees for about a year. The Asia-Pacific region has many active volcanoes in countries such as Japan, Indonesia, Papua New Guinea, the Philippines, the Russian Federation and Vanuatu. Although, during the past 20 years, volcanoes have caused smaller losses than earthquakes or floods, they can have enormous destructive power. Volcanoes can also affect food security in the light of their potential to halt agricultural activities, as was the case with the Mount Tambora eruption of 1815 in Indonesia and the El Chichon, Mexico eruption in 1982.

The socioeconomic impacts of disasters can be further amplified as a result of growing economic interdependence. For instance, the 2011 floods in Thailand affected 3.1 million people and cut the country's rate of growth of the GDP to 0.1 per cent from an earlier projection of 3.2 per cent,²⁷ but the impact spread far beyond Thailand. The floods inundated factories, major highways, and rural roads, disrupting global production for a number of goods. Thailand has the world's twelfth largest automobile industry, which is highly integrated into the global supply chain. Factory closures were felt as far as

North America, as missing parts forced major manufacturers to curtail operations. Thailand also produces about one-quarter of the world's hard-disk drives. Factories belonging to one of the world's largest manufacturers, which produces more than 60 per cent of its output in Thailand, were submerged, severely affecting global computer supplies.

Similarly, the 2011 earthquake and tsunami in Japan caused economic damages and losses of \$210 billion in this country, but it also affected severely the Tohoku region, which produces \$322 billion worth of intermediate goods and services that feed into global supply chains.

Disaster risk reduction

Disasters are no longer perceived simply as extreme events created entirely by natural forces but rather as manifestations of unresolved problems of development. Policies have evolved from largely top-down relief and response efforts to intersectoral approaches of risk reduction with greater emphasis on early warning and mitigation. Even so, local, national and international resources are still predominantly used for emergency response.

Most countries in the region have established national policies, legislation, frameworks, strategies, or plans to prepare for and cope

with disasters. At the multilateral level, the Hyogo Framework for Action, a global blueprint for disaster risk reduction for the period 2005-2015, was adopted by 168 United Nations member states at the World Conference on Disaster Reduction. Within the United Nations, the focal point for disaster risk reduction is the International Strategy for Disaster Reduction, which also manages a biennial forum, the Global Platform for Disaster Risk Reduction.

Thus far, however, much less attention has been paid to the opportunities for regional responses. One important forum is the Asian Ministerial Conference on Disaster Risk Reduction. This biennial conference organized since 2005 has allowed ministers in charge of disaster management to reaffirm their commitment to the implementation of the Hyogo Framework for Action.

An example of subregional cooperation is the ASEAN Agreement on Disaster Management and Emergency Response, which entered into force on 24 December 2009. This aims to promote subregional cooperation, and has a range of components: provisions on disaster risk identification, monitoring and early warning; prevention and mitigation; preparedness and response; rehabilitation, technical cooperation and research; mechanisms for coordination; and simplified customs and immigration procedures.

There are other subregional cooperation mechanisms. Under the auspices of SAARC, the SAARC Disaster Management Centre, set up in 1996 in New Delhi, administers the South Asian Disaster Knowledge Network. ESCAP and the World Meteorological Organization (WMO) manage the Typhoon Committee, which covers Cambodia, China, Democratic People's Republic of Korea, Japan, Lao People's Democratic Republic, Malaysia, Philippines, Republic of Korea, Singapore, Thailand, Viet Nam, United States of America, Hong Kong, China, and Macao, China. ESCAP and WMO also manage the Panel on Tropical Cyclones, which covers Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand. The Pacific Islands Applied GeoScience Commission operates

Pacific Disaster Net, a comprehensive web-based information resource for disaster risk management.

Other initiatives include the Regional Space Application Program for Sustainable Development, the Central Asia Disaster Risk Reduction Knowledge Network, the International Strategy on Disaster Reduction Asia Partnership, the Asian Disaster Preparedness Center, the Mekong River Commission, the International Centre for Integrated Mountain Development, and the Asian Disaster Reduction Center.

Asia and the Pacific would, however, benefit from more comprehensive regional agreements and cooperation. Better management of transboundary river basins, for example, can prevent floods in the countries that share the basin. Tsunamis also raise the need for regional cooperation to develop effective early warning and communication systems. Obstacles faced during bilateral discussions and agreements could be better addressed through multilateral approaches where neutral parties can reduce sensitivities and pave the way for cooperation. Resolutions passed by the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO) resulted in the establishment of the Indian Ocean Tsunami Warning and Mitigation System with an intergovernmental coordination group set up to govern it.

Regional early warning systems

The greatest challenge in implementing regional early warning systems is that similar patterns of natural hazards may result in widely differing impacts in different countries. The impacts vary based on levels of development, the size of economy and other socioeconomic influences. After the 2004 Indian Ocean tsunami, for example, Thailand experienced lower-than-expected economic growth while the rate of growth in Indonesia exceeded expectations. Another challenge is that National Disaster Management Authorities/Organizations are still in their early stages of development.

An example of sound regional cooperation is the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), a regional tsunami early warning provider for the Indian Ocean supported by ESCAP. It includes the following elements: collecting data and undertaking risk assessments; monitoring hazards and early warning services; communicating risks; and building national and community-level response capabilities (see box V.2).

An important intergovernmental forum for improved regional cooperation is the ESCAP biennial Committee on Disaster Risk Reduction, which provides opportunities for ESCAP member States to discuss and share experiences on disaster risk reduction policies. The joint ESCAP/UNISDR publication, the *Asia-Pacific Disaster Report*, which is published every two years, looks at regional trends, linkages between disasters and development, and possible approaches to

reduce risks. The Asia-Pacific Gateway for Disaster Risk Reduction and Development is an online platform aimed at assisting disaster management authorities and relevant ministries in efforts to mainstream disaster risk reduction into development planning.

Fostering regional cooperation

Regional and transboundary cooperation in developing risk reduction and adaptation strategies can bring mutual benefit to all countries, for example, by reducing uncertainty through exchanges of data and information. Cooperation can also widen the knowledge and information base, increasing the set of options available for prevention, preparedness and recovery, and thereby helping to find better and more cost-effective solutions. Priorities should include:

- Strengthening the One UN approach for disaster risk reduction through the Regional Coordination Mechanism

BOX V.2. Regional cooperation on early warning systems for disaster risk reduction

An important recent initiative in the area of early warning systems has been the establishment of the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES). RIMES is an international and intergovernmental institution dedicated to the generation and application of early warning information. It evolved from the efforts of countries in Africa and Asia, in the aftermath of the 2004 Indian Ocean tsunami, to establish a regional early warning systems within a multi-hazard framework for the generation and communication of early warning information, and capacity-building for preparedness and response to transboundary hazards. RIMES, which operates from its regional early warning centre, located at the campus of the Asian Institute of Technology in Pathumthani, Thailand, was established on 30 April 2009. Its current members are Bangladesh, Cambodia, Comoros, India, Lao People's Democratic Republic, Maldives, Mongolia, Mozambique, Papua New Guinea, Philippines, Seychelles, Sri Lanka and Timor-Leste.

Source: RIMES. Available from <http://www.rimes.int>.

- Strengthening specialized regional centres, including those for training, research and capacity-building;
- Promoting social and economic analyses on disaster risk reduction in the region
- Producing regional studies, baseline assessments and periodic reviews;
- Sharing disaster data and statistics in the region
- Using satellite technology for disaster risk reduction;
- Promoting technical cooperation and developing standards;
- Facilitating the cooperation of various research and policy communities and creating synergies between technical, practical, and political counterparts.

Pressures on natural resources and sustainability

Rapid economic growth in Asia and the Pacific has placed increasing pressure on natural resources. With limited endowments of natural resources, the region is particularly vulnerable to disruptions associated with

volatile energy and resource prices, land use changes and climate change, which are becoming increasingly interconnected.

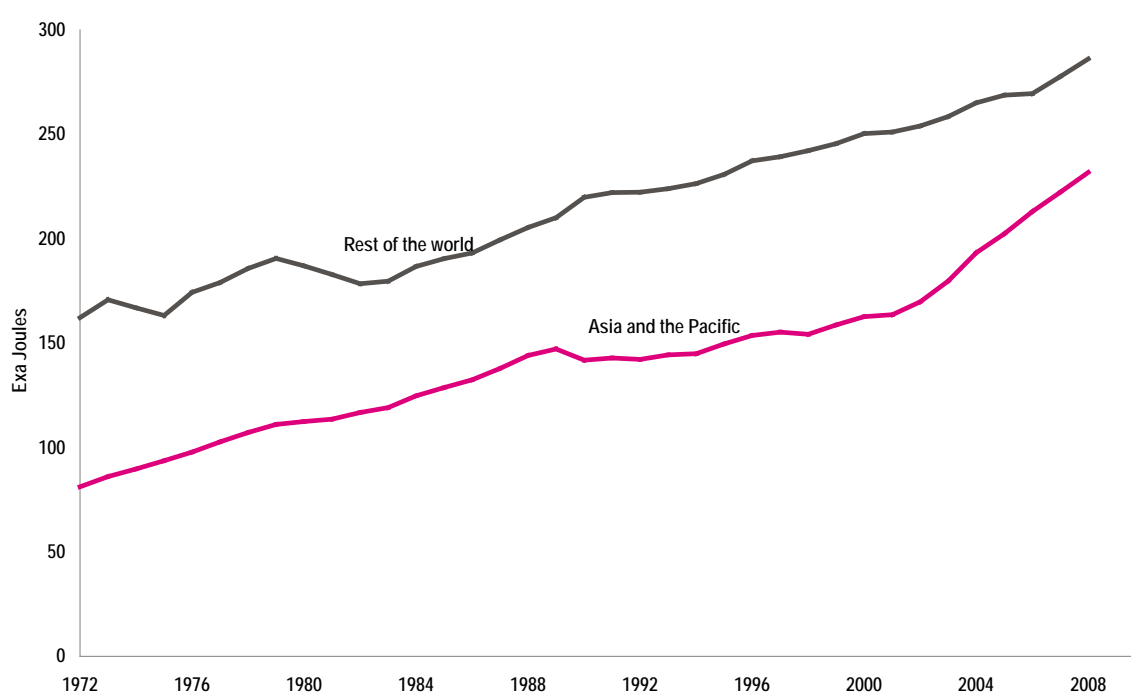
Some of the most significant pressures arise from the rising demands for energy, which is projected to increase by about 34 per cent over the next decade.²⁸ This will pose particular problems for countries that rely heavily on imported energy sources, which are facing rising and volatile prices.²⁹ Although investment in renewable energy is a critical response to meeting energy demand, there is a rising concern about the social and environmental costs caused by two key renewable energy sources, hydropower and biofuels.³⁰

There will also be pressure on water and other ecosystem services. The region already has the world's lowest per capita availability of water resources (see figure V.3). If current trends and management practices persist, by 2025, a significant proportion of the region's population will live in water-stressed river basins.³¹

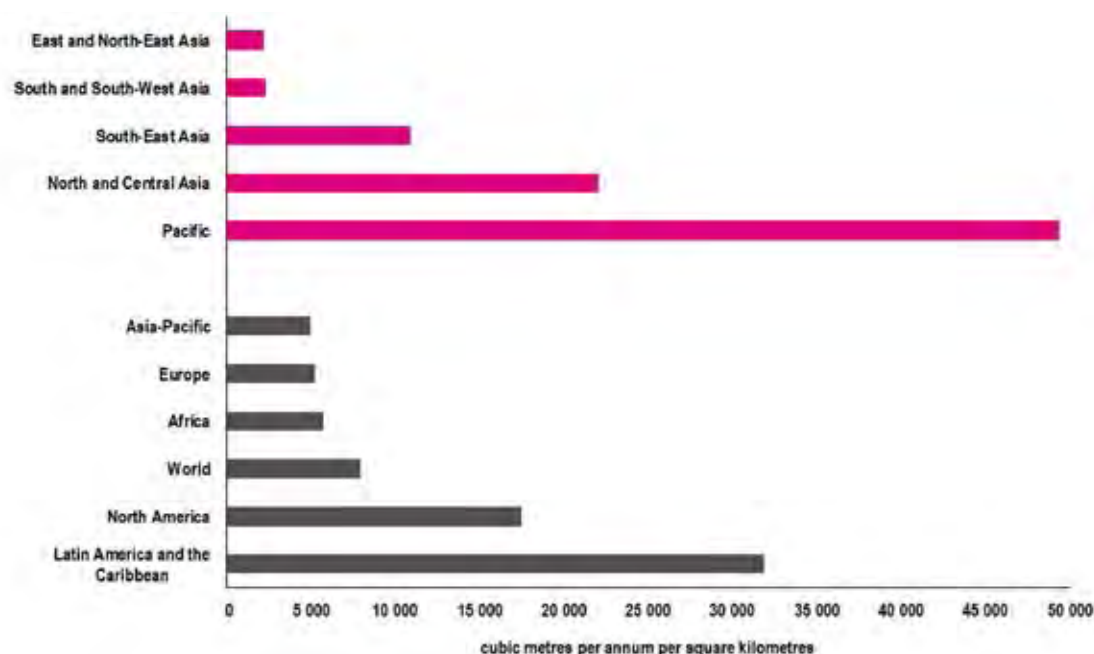
In addition, there are threats to biodiversity. Asia and the Pacific is a biologically rich region,

FIGURE TITLE

V.2. Primary energy use in Asia and the Pacific and the rest of the world, 1971-2008



Source: ESCAP.

V.3. Availability of water resources per capita, by region and subregion, 2008

Source: FAO, AQUASTAT, Information system on Water and Agriculture (accessed 8 February 2012).

with about 60 per cent of the world's species. However, as of 2010, nearly one-third of all threatened plant and animal species are found in the region.³² Forests too are being degraded, with many primary forests being replaced by plantations based on non-native species, in some cases to produce biofuels. With the laudable exception of Bangladesh, mangrove forest cover has been reduced in most Asian countries, increasing the risks of flooding in coastal areas. Changes in forests are not only leading to further environmental degradation but also resulting in additional carbon emissions and increasing vulnerabilities to disasters and water insecurity.

Other environmental concerns that threaten the sustainability of economic growth include increasing sulphur dioxide emissions, the rapid accumulation of solid waste, and the increasing prices and scarcity of many natural resources. Indeed, by 2005, Asia and the Pacific had become the world's largest resource user, consuming 35 billion tons per annum of key materials, such as biomass, fossil fuels, metal ores and industrial and construction materials. This represents 60 per cent of the global use of resources (see figure V.4).³³

At the same time, the composition of materials used in the region's economies has also changed significantly. In 1970 the biomass category accounted for 47 per cent

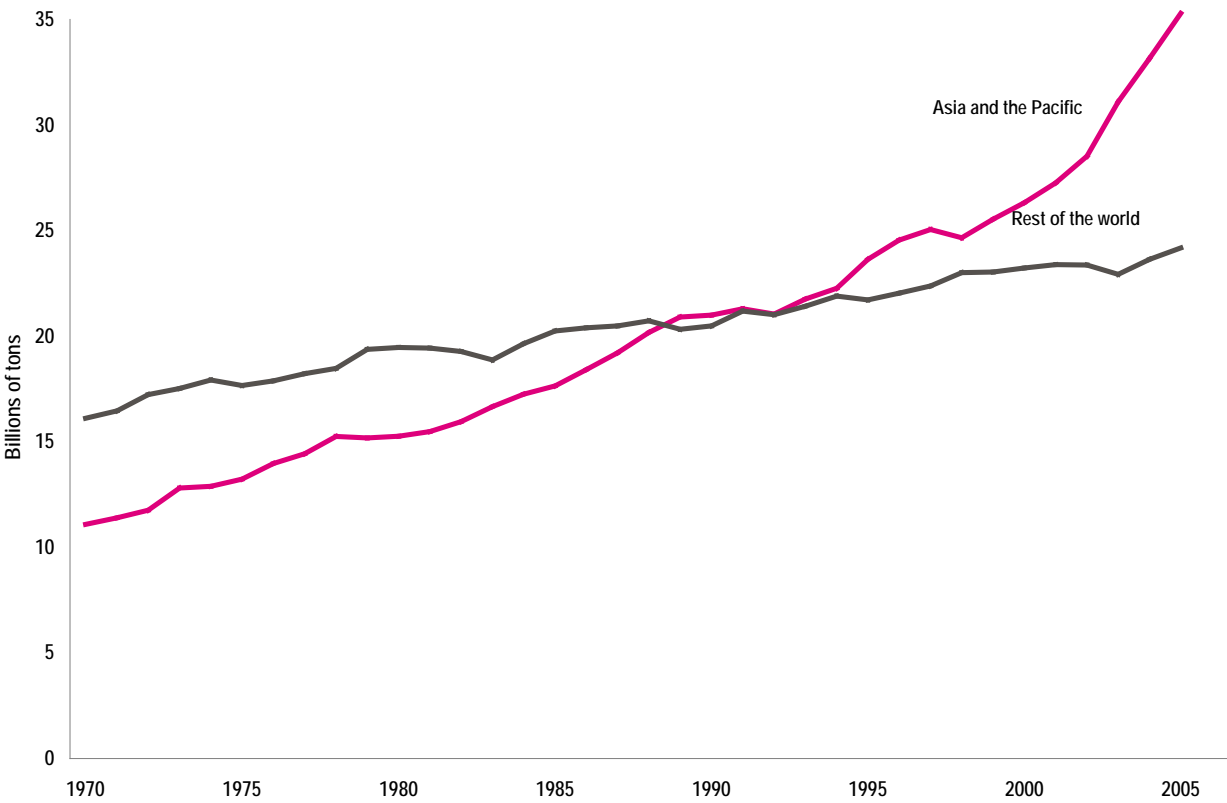
of materials used in the region, but by 2005, construction materials, such as sand, gravel, concrete and steel, had become the largest category, representing 49 per cent of the total. The price volatility of these commodities increases uncertainty and creates new risks and limits to the growth of certain sectors (see figure V.5).

Regional responses

Recognizing that pressures on natural resources and many other related environmental problems pose threats to economic growth and poverty reduction, the region's leaders have been developing regional responses. One of the important approaches involves the promotion of green growth, as discussed at the Fifth Ministerial Conference on Environment and Development in Asia and the Pacific held in Seoul in 2005 and the Sixth Asia and the Pacific Ministerial Conference on Environment and Development held in Astana in 2010.

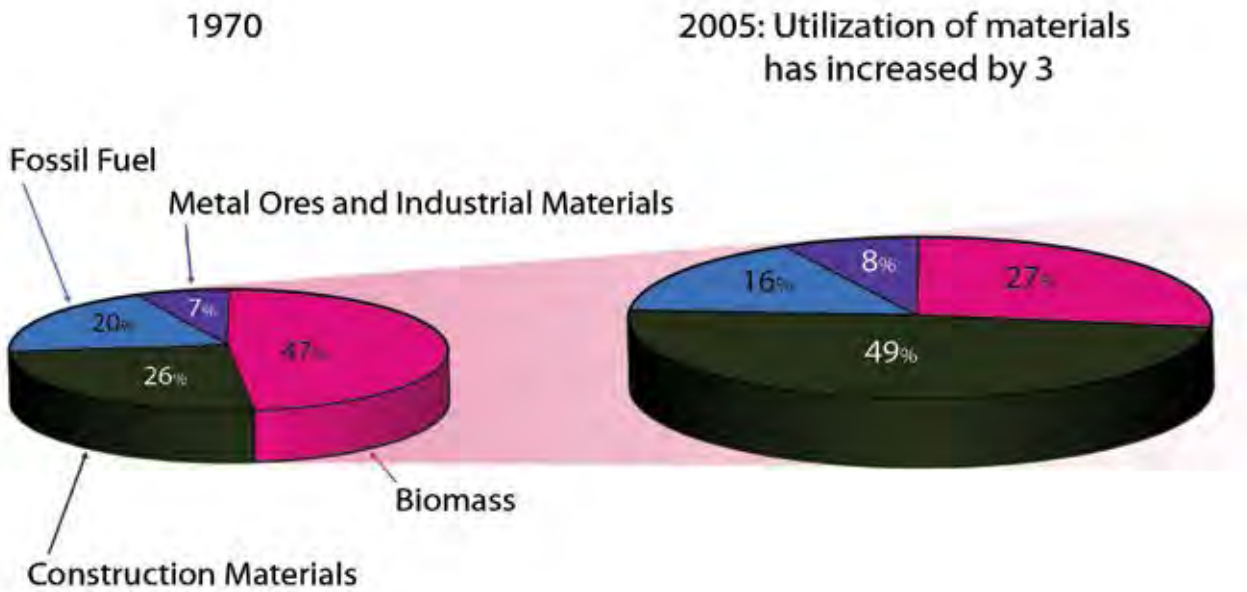
Economic policy system changes are required to enable technological innovations and research and development to improve eco- and resource efficiency. This will further create important economic and financial savings and gains, which can be invested in poverty reduction and social welfare programmes. The Asian and Pacific Regional Preparatory

FIGURE TITLE
V.4. Domestic material consumption in Asia and the Pacific and the rest of the world, 1970-2005



Source: CSIRO and UNEP Asia-Pacific Material Flow database. Available from www.csiro.au/AsiaPacificMaterialFlows.

FIGURE TITLE
V.5. Shares of main material categories in Asia and the Pacific, 1970 and 2005



Source: CSIRO and UNEP Asia-Pacific Material Flow database. Available from www.csiro.au/AsiaPacificMaterialFlows.

Meeting for the United Nations Conference on Sustainable Development (UNCSD) – Rio+20, held in October 2011, underlined, among other key sustainable development priorities for the region, the need for regional cooperation to “facilitate technological innovation and transfer and promote access to green technologies at affordable costs.”³⁴ A recent review of country submissions to the UNCSD secretariat confirms that technology transfer and capacity building are among the top priority issues.³⁵

Among the most effective means of technology transfer are regional and inter-regional partnerships (see box V.3). In Asia and the Pacific they have included the Kitakyushu Initiative for Clean Environment,³⁶ and the Seoul Initiative Network on Green Growth.³⁷ The Astana Green Bridge Initiative³⁸ is evolving as another driver fostering regional and intraregional cooperation for technological innovation and transfer of green technologies.

How can countries in the South launch the necessary initiatives to leapfrog into these

BOX V.3. Innovation and technology transfer

ESCAP has been supporting the widespread sharing of knowledge and transfer, adaptation and replication of environmentally sound technologies, with the support of its Asian and Pacific Centre for Transfer of Technology (APCTT) and its subregional offices, particularly in the Pacific. ESCAP has also been building regional cooperation for transferring low-cost, low-tech, locally affordable and applicable technologies throughout the region. One of its activities was to conduct a regional study on the promotion of publicly funded environmentally sustainable technologies (EST) in the Asia-Pacific region, initiated in 2007.^a The study recommended that national systems of innovation be enhanced and called for boosting regional cooperation through the creation of a regional network of national innovation centres or agencies closely involved in the full cycle of EST development and transfer.

Since its inception in 1977, APCTT has been helping to upgrade capacity in technology transfer and innovation management. Its experience suggests that while certain countries have developed sophisticated insights into the structuring and operation of national innovation systems others lack this capacity. The Centre has also worked extensively on identifying barriers to the transfer of green technologies, in particular low-carbon technologies.

In general, national efforts in building capacity to plan and implement technology transfer activities in SMEs are weak in many developing countries. As a result, ESCAP has implemented a number of projects to support them. For example, a training centre in Samoa has developed low-cost, locally appropriate technologies for capturing biogas for cooking and heating from human sanitation units and animal husbandry.

Similarly, local adaptations and improvements of technology applied in Viet Nam with the assistance of Thai experts were successfully replicated in Fiji and Vanuatu. Another example has been the use of solar renewable energy in Cambodia, where Sunlabob, a Lao People's Democratic Republic-based

BOX V.3. Continued

private company, set up local cooperatives to provide solar lantern rental systems in floating villages of the Thonle Sap lake area.

In 2011, APCTT organized a business-to-business forum on “Fostering Business Partnerships to Promote the Adoption and Utilization of Renewable Energy Technologies” in Colombo, Sri Lanka. It was organized in association with the National Engineering Research and Development Centre of Sri Lanka, the National Cleaner Production Centre of Sri Lanka (NCPCSL), and the Ceylon Chamber of Commerce. As part of the forum, one-to-one meetings were set up between renewable-energy business firms and technology transfer intermediaries in Sri Lanka and firms from six other participating countries, namely Fiji, India, Mongolia, Nepal, the Philippines and Thailand. One outcome of this meeting is negotiations between a company in the Philippines and NCPCSL on transferring solar-assisted air conditioning technology to Sri Lankan companies.

Source: ESCAP-APCTT.

^a Van Berkel, 2008.

new areas? For this purpose, it would be invaluable to have an ICT-based South-South network to share information on, for instance, national policies, the technologies available for sale, the nature of intellectual property protection and the institutions working in each area. Another useful step, to avoid wasteful duplication of efforts and resources, would be to form a South-South network of research and development institutions. The intellectual property thus generated could be owned jointly, and disseminated over a wider range of SMEs as proposed later in this study. Countries of the South should not of course work only among themselves. They also need to work with the developed countries in the North to strengthen other business-oriented technology transfer efforts.

Another option for SMEs, in particular, is through public-private partnerships (PPPs).³⁹ Such initiatives are not new; they were used, for example, to promote the Green Revolution in agriculture. One proposal currently under discussion is to develop “climate innovation

centres” to build local capacity and finance the acquisition of relevant low-carbon technologies through buyer-friendly business processes.⁴⁰ Another, in the health sector, involves the search for new drugs. In 2008, the Council of Scientific and Industrial Research of India launched the Open Source Drug Discovery programme,⁴¹ which aims to attract the brightest minds worldwide to be part of the drug discovery movement.⁴²

Setting priorities

In conclusion, regional cooperation could help promote environmentally sustainable technologies in SMEs in the following areas:

Skills – Creating a critical mass of skills to help firms, especially SMEs, plan and implement technology transfer with a business focus, particularly those for which there are no intellectual property constraints. This could provide opportunities for PPPs.

Supply chains – Enabling the growth of effective supply chains and marketing

networks, which can manufacture, market, and service low-carbon technologies.

Research and development – Encouraging international collaboration in research, design, development and deployment. This should aim to reduce the risks associated with capital costs through government demonstration activities,⁴³ and would help prevent innovations lying dormant without being commercialized.

Available technologies – It is important to identify, for SMEs in particular, the potential of mature low carbon technologies for which there are no intellectual property issues. Such information can be publicized widely through government and international agencies and through private-sector participation.

Intellectual property – Introducing guarantees for strong intellectual property enforcement while also developing locally appropriate versions.⁴⁴

Innovation hubs – Establishing regional hubs, based on the “open innovation” principle for instance, in the ASEAN or SAARC regions, to develop critical low carbon technologies.

Financial incentives – Designing market transformation incentives to overcome costs that prevent firms from switching to low carbon technologies.

Clean development mechanism – Providing comprehensive information on the Clean Development Mechanism with respect to eligibility criteria and potential emission reduction opportunities.⁴⁵

Microfinance – This currently appears to be operating only in niche markets. Scaling up its use will require management of transaction costs and credit risk, and offering low-cost, long-term financial resources.⁴⁶

Bank finance – Building capacity in the finance and banking sector, in areas such as low-carbon energy finance, including models for the effective use of available finance and economic and feasibility analysis.⁴⁷

Addressing sustainability risks through technological cooperation

The case for regional cooperation to meet the challenges considered in this chapter – food and energy insecurity, disasters and pressures on natural resources – is based on two facts: that their impact often cuts across national boundaries and that national capabilities to reduce risks and mitigate impacts are unevenly distributed across countries in the region. As a result, cooperative efforts could both be in the best interest of all countries and make the overall regional response to these challenges more effective.

A critical element for regional cooperation in the three areas is the production and dissemination of accurate information to facilitate the preparation of diagnoses and risk assessments and to help national governments plan and implement the most effective policy responses. In addition, it is very important to help all countries in the region build sufficient capacities in the areas of data collection and analyses, diagnoses and risk assessments, and policy planning and implementation.

As mentioned earlier in the chapter, a large number of subregional, regional and global institutions and initiatives aim at fostering cooperation to address the challenges of food insecurity, disasters and pressures on natural resources. The majority of these cooperative arrangements are highly specialized and cover a limited number of countries in the region. Subregional organizations, such as ASEAN and SAARC, play very important roles as umbrella organizations that encompass various institutional mechanisms with the same membership.

However, as highlighted in previous chapters of this study, subregional approaches to cooperation are not the most effective. For instance, in the case of trade, a key reason for a broader approach to regional integration was given by the widespread distribution of export opportunities, which are not limited to the confines of each subregion. In the case of transport, energy and ICT infrastructure investment, the existence of network

externalities provide a strong economic case for aiming to build the broadest possible networks, encompassing the whole Asia-Pacific region.

A similar argument can be made for a region-wide response to the challenges of food insecurity, disasters and pressures on natural resources. Because the three challenges pose potentially large economic costs to countries in the region, it is important to seek ways to minimize these costs. For this purpose, region-wide cooperative mechanisms could be the most effective, because of their effectiveness in disseminating knowledge, sharing good practices and supporting the build-up of capabilities across all countries in the region.

The three challenges of food insecurity, disasters and pressures on natural resources are fundamental aspects of sustainability, and are interrelated. The concept of sustainability implies that, at a minimum, the same degree of access to food, protection from disasters, and natural resources must be ensured for future generations. To meet this enormous challenge, it is critical to build capacities and promote technological innovations and research and development to improve eco- and resource efficiency. Technological innovations are also needed to ensure food security through the development of sustainable agriculture practices and to enhance the effectiveness of monitoring and early warning systems to reduce disaster risks.

To maximize the effectiveness of the region's response to these interlinked challenges, the creation of a region-wide body named "Asia-Pacific Technology Development Council" (APTECH), could be considered. APTECH would serve as a regional apex body of national innovation institutions. Its main functions would entail fostering innovation that addresses shared problems and promoting cooperation in pre-competitive research and development. For that purpose, it could establish a regional innovation fund to finance joint innovation proposals, the intellectual property of which would be owned by APTECH and shared among members. Such intellectual property could be subsequently made available to national and regional enterprises for competitive research.

The funding of a potential regional innovation fund would come from one of the regional development funds proposed below.

Addressing social risks

Despite the region's economic dynamism, the number of people living in extreme poverty, suffering from hunger and lacking insufficient access to sanitation, education, health and financial services is still enormous.⁴⁸ While economic growth is creating vast opportunities, growth alone is insufficient to correct the region's huge socioeconomic and developmental disparities within and between countries, and such disparities could pose serious threats to national economic, social and political stability.

The fast economic growth of the last two decades has been accompanied by rising inequalities, with the population-weighted mean Gini coefficient for the entire region increasing from 32.5 per cent in the 1990s to 37.5 per cent in the mid-2000s.⁴⁹ These rising income inequalities are a manifestation of deeper inequalities in the access to fundamental resources, such as sanitation, education, health services, food security and electricity. Such access has tended to be more widespread in urban areas, where most of the region's development has been taking place, leaving rural areas behind. At the same time, persistent disparities have continued between women and men, and between different social and ethnic groups.⁵⁰

While it might appear that economic growth, like a tide that lifts all boats, would eventually provide employment opportunities for all, even the poorest and most deprived segments of society, this is not necessarily the case. Trickle down cannot be taken for granted. First, economic growth in the twenty-first century places a premium on educated individuals who are not only literate but also able to take advantage of modern ICT effectively. When professionals and skilled workers are scarce in rapidly growing economies, their real wages tend to increase significantly faster than average, contributing to increased income inequalities. Second, there is much evidence that poverty and social deprivations, such as the lack or insufficient access to basic sanitation, education or health

services, play a large role in determining health outcomes – and, thus, the potential to engage fully in employment activities – across the population.⁵¹

Persistent poverty and inequality in the world's most dynamic region represents, as argued in chapter one, a missed opportunity. If the "bottom one billion" inhabitants of Asia and the Pacific had similar access to sanitation, health, education and social protection as the "top three billion", they would be able to enhance the size of what is already the largest and most rapidly expanding market, contributing to sustaining growth in decades to come. Moreover, social justice considerations make the exclusion of a quarter of the region's population from the fruits of its growing prosperity morally unacceptable. Furthermore, social exclusion creates downside risks to stability and growth itself.

Studies on the relationship between poverty and violent conflict usually find that causality runs from conflict to poverty, but the reverse relationship is not as clear. However, when poverty coincides with ethnic, religious, language or regional boundaries, underlying grievances can explode into open conflict, often triggered by external shocks, such as a sudden increase in the price of food or other necessities. The potential for conflict is more likely when basic human needs, such as the need for physical security and well-being, communal and cultural recognition, participation and distributive justice are repeatedly denied, threatened, or frustrated, especially over long periods of time.⁵² According to the Commonwealth Commission on Respect and Understanding, remembered injustices, including those that occurred decades, even centuries before, play an important role in justifying and sustaining many conflicts.⁵³

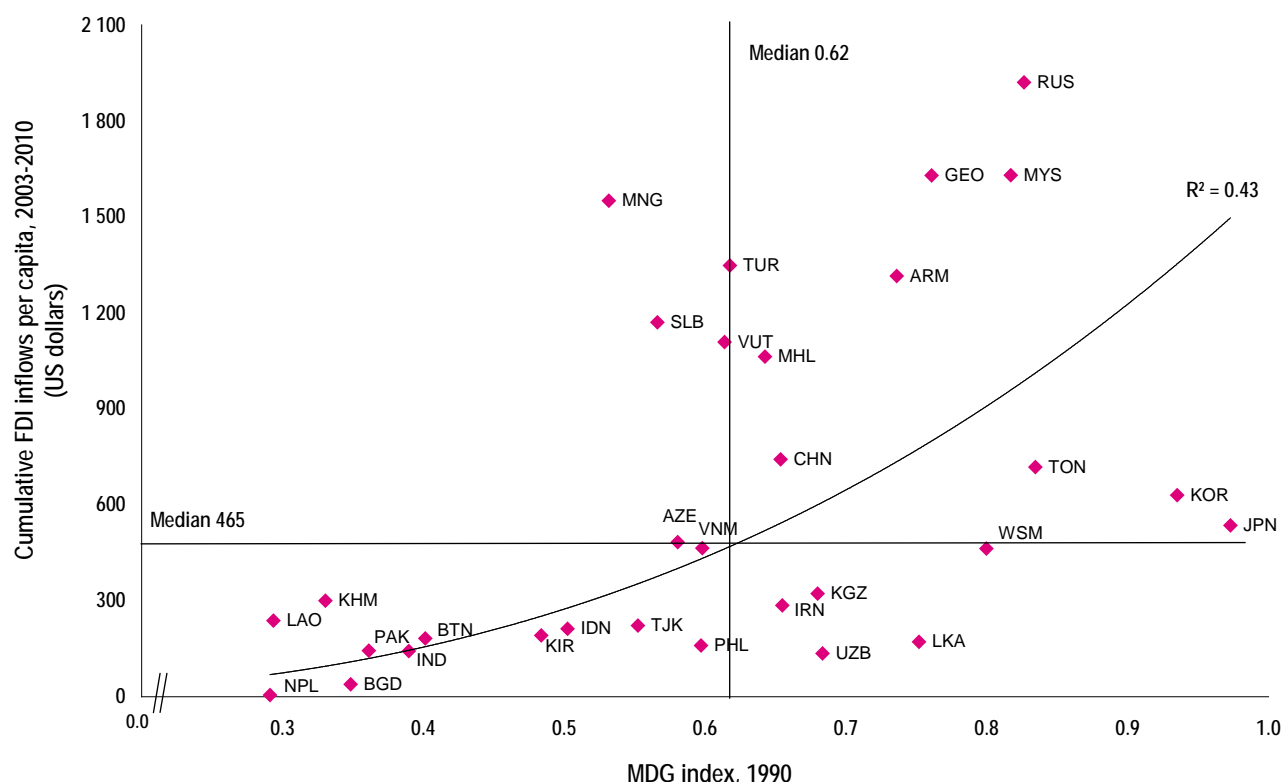
As shown in figure V.6, social exclusion appears to have an adverse consequence on foreign direct investment. The horizontal axis shows a Millennium Development Goals capabilities index developed by ESCAP for the year 1990.⁵⁴ It measures the levels of country's capabilities to provide services in the areas of health and education. The vertical axis shows cumulative

inflows of foreign direct investment per capita during the period 2003-2010. The relationship between these two variables is positive and statistically significant. The countries in the bottom half of the distribution of the index have an average cumulative foreign direct investment (FDI) per capita of \$415 over the period 2003-2010, compared to \$1,065 for those in the upper half of the distribution of the Millennium Development Goals capabilities index. The relationship between social exclusion and FDI could be explained by two possible factors: (i) the reduced size of the domestic market resulting from the lower purchasing power of the excluded; and (ii) potential risks to social and political stability which could affect the return of FDI.

An important objective of regional economic integration schemes is to narrow development gaps and bring about convergence in the levels of economic development of different participants through the optimal deployment of the region's resources. The objective of achieving a balanced and equitable regional development also creates conditions for a more enthusiastic participation of all partners, including those with scarce productive capacities. Some studies suggest that increased trade by itself, even if balanced, does not ensure economic development. Thus, growth in trade must be accompanied by complementary development policies to promote investment in infrastructure, education and research and development in lower-income countries and less-developed regions.

Many existing regional trading arrangements include balanced regional development and social cohesion policies.⁵⁵ For instance, the European Union has extensive programmes, to support lagging regions through structural funds under the social cohesion policy. The Southern Common Market (MERCOSUR) is considering proposals for a regional social fund. SAARC has created the SAARC Development Fund which includes a social window to fund poverty alleviation programmes and projects, an infrastructure window to finance infrastructure projects, and an economic window to fund other non-infrastructure commercial projects.

FIGURE TITLE

V.6. Social exclusion in 1990 and foreign direct investment over 2003-2010

Source: ESCAP based on data from the United Nations Statistics Division, Millennium Development Goals Indicators database.

Notes: The Millennium Development Goals capabilities index is a measure of the level of country's capabilities to provide MDG-related services in the areas of health and education. For details on the construction of the index see Clovis Freire, "Measuring progress towards the MDGs: a capability-based approach", Working Paper (Bangkok, ESCAP forthcoming).

Therefore, apart from special and differential treatment provisions in favour of developing and least developed countries, which are normally incorporated in any trade liberalization scheme, a broad and comprehensive regional economic integration scheme for Asia and the Pacific should include other measures to assist lower-income countries, as well as lagging regions in all countries. Regional development funds similar to the examples mentioned above could be set up with contributions from member countries based on an agreed proportion of their GDP. With a combined GDP of about \$20 trillion, even a 0.1 per cent share would yield a sum of \$20 billion per annum. Such an amount could be used to create three funds: the Asia-Pacific Regional Development Fund, the Asia-Pacific Regional Integration Fund and the Asia-Pacific Technology Development Fund. The proportion of the total to allocate to which of the three funds could be 65, 20 and 15 per cent.

The Asia-Pacific Regional Development Fund could be earmarked for uplifting lower-

income countries as well as less-developed regions of all member countries by investing in physical and social (education, training and health care) infrastructure. The fund could also offer subsidies, incentives and technical support to producers based in these regions and promote technology transfer to enhance their competitiveness. The fund could also facilitate the provision of social safety nets to groups adversely affected by regional trade liberalization. Among many socially desirable areas, investments promoted by this fund could aim at enhancing connectivity, developing rural communities and agro-based industries, increasing agricultural productivity, and supporting SMEs. The less developed regions, the main intended beneficiaries of the fund, should be identified on the basis of a measurable criterion, such as having a GDP per capita below certain threshold of the average GDP per capita for all the economies participating in the regional integration scheme. In addition, it is important that specific projects supported by the fund be co-financed by local or national governments in order to give them a financial

stake in the outcome of the projects, creating incentives for their effective implementation.

The Asia-Pacific Regional Integration Fund could provide financing to enhance connectivity between lower-income countries and the main markets in the region by linking highways, railways, and ports. This fund could also provide financing in areas related to ICT, broadband, the use of satellites, trade facilitation, electronic data interchange and radio frequency identification (EDI/RFID), harmonization of customs and conformity procedures. Financing from the fund should normally stimulate private investments in the beneficiary countries. Thus funding from the fund should be limited to a maximum of 30 per cent of the total project cost.

The Asia-Pacific Technology Development Fund could provide assistance to joint research and development programmes of Asia-Pacific enterprises based in a least two countries, one of which should be a developing country. The fund would be administered by APTECH, as proposed above. An important objective of this fund could be to assist enterprises based in relatively lower-income countries of the region in accessing modern technologies and developing productive capacities. The assistance from the fund could be limited to 50 per cent of the total project cost.

With these steps accompanying the programmes of regional economic integration, regionalism in Asia and the Pacific would hopefully become a model of an inclusive, balanced, equitable and participatory development process for other regions to emulate.

ENDNOTES

¹ Asia Society and International Rice Research Institute, 2010.

² Hazell, 2009.

³ United Nations, 2011.

⁴ ESCAP, 2009b.

⁵ United Nations, "Hunger: Who are the hungry?". Available from www.un.org/en/globalissues/briefingpapers/food/whoarethehungry.shtml.

⁶ Ibid.

⁷ FAO, 1996.

⁸ United Nations, 2009, p. 27.

⁹ ASEAN, 2009a.

¹⁰ United Nations, 2009.

¹¹ SAARC, 2009.

¹² FAO and SAARC, 2008.

¹³ SAARC, 2011.

¹⁴ Food Secure Pacific, 2010.

¹⁵ Cokanasiga, Keil and Sisifa, 2011.

¹⁶ As of February 2010, the 25 members of the commission were Afghanistan, Australia, Bangladesh, Bhutan Cambodia, China, Fiji, France, India, Indonesia, the Islamic Republic of Iran, Japan, the Lao People's Democratic Republic, Malaysia, Myanmar, Nepal, New Zealand, Pakistan, the Philippines, the Republic of Korea, Sri Lanka, Thailand, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Viet Nam.

¹⁷ ASEAN, 2011b.

¹⁸ Alene and Coulibaly, 2009; Timmer, 2005; World Bank, 2008; ESCAP, 2012.

¹⁹ APAARI, 2010.

²⁰ World Business Council for Sustainable Development and the International Union for Conservation of Nature, 2008.

²¹ ADB, 2007b.

²² Ibid.

²³ FAO and SAARC 2008.

²⁴ UNISDR, 2012.

²⁵ ESCAP and UNISDR, 2010, p. 36; ESCAP, 2012.

²⁶ ESCAP, 2011f.

²⁷ See Thailand, Office of the National Economic and Social Development Board, 2012; Thailand, Ministry of Finance, 2011.

- ²⁸ ESCAP, based on International Energy Agency, 2011.
- ²⁹ ESCAP, 2012.
- ³⁰ ESCAP, ADB and UNEP, 2010.
- ³¹ UNEP, 2011.
- ³² ESCAP, 2011d.
- ³³ UNEP, 2011.
- ³⁴ UNCSD, 2011.
- ³⁵ ESCAP review of official submissions of member states to the UNCSD secretariat.
- ³⁶ ESCAP, 2001, part three.
- ³⁷ ESCAP, 2005, annex III.
- ³⁸ ESCAP, 2011d, chapter I, section C.
- ³⁹ Brenner, 2009.
- ⁴⁰ Ibid.
- ⁴¹ Available from www.osdd.net (accessed 1 February 2012).
- ⁴² Chesbrough, 2003.
- ⁴³ Ockwell, Watson and Macherron, 2008.
- ⁴⁴ Global Climate Network, 2009.
- ⁴⁵ Schneider and others, 2008.
- ⁴⁶ Parthan and others, 2010.
- ⁴⁷ Ibid.
- ⁴⁸ ESCAP-ADB-UNDP, 2012.
- ⁴⁹ ESCAP, 2012.
- ⁵⁰ ESCAP-ADB-UNDP, 2012.
- ⁵¹ Commission on Social Determinants of Health, 2008.
- ⁵² Ocampo, 2004.
- ⁵³ Commonwealth Commission on Respect and Understanding, 2007.
- ⁵⁴ The ESCAP MDG capabilities index is calculated by considering different levels of MDG attainment as different deliverables requiring specific capabilities to be produced and by applying the method proposed by Hidalgo and Hausmann, 2009, to measure the level of capabilities available to countries to produce them. For details see Freire, 2012.
- ⁵⁵ See Yeats and Deacon, 2006, for a review of different RTAs.



Photo by John Isaac



Six

Towards an inclusive and sustainable Asia-Pacific century



A compelling case exists for deepening and broadening economic cooperation in the Asia-Pacific region and to move forward towards the formation of an economic community of Asia and the Pacific as a long-term goal. The four-pronged action agenda outlined in this study covers trade and investment, connectivity, financial cooperation and cooperation for addressing shared risks. The region will need an elaborate institutional architecture to move ahead with this ambitious agenda.

In the preceding chapters, it was argued that fostering regional economic integration would be critical to sustain growth in Asia and the Pacific because, burdened by huge debts and global imbalances, the advanced economies of the West are no longer able to play the role of engines of growth for the region that they played over the past 60 years. However, the region does not need to look very far to find new sources of aggregate demand. Regional developmental challenges, such as poverty and wide disparities in social and physical infrastructure, can be turned into opportunities for sustaining growth in the future. The region's "bottom billion", if lifted out of poverty and allowed to join the mainstream of the region's consumers, could help sustain growth in Asia and the Pacific – and the world at large – in decades to come. In addition, if all countries of the region were connected seamlessly by closing development gaps in physical infrastructure and adopting best practices in trade and transport facilitation, lagging economies would be able to access the largest and most dynamic markets in the world, boosting their business and employment opportunities.

The four-pronged action agenda for enhancing regional economic integration in Asia and the Pacific proposed in this study could contribute not only to sustaining the region's dynamism, but also to making its development process more inclusive and sustainable. The agenda entails: (i) the formation of a broader integrated regional market; (ii) seamless physical connectivity across the region; (iii) financial cooperation for closing the development gaps; and (iv) economic cooperation for addressing shared vulnerabilities and risks. This agenda could be instrumental in the realization of an inclusive and sustainable Asia-Pacific century, in which the region would not only be free from poverty and hunger but also continue to prosper in a sustainable manner, meeting its needs without compromising the interests of future generations. A dynamic, inclusive and sustainable Asia-Pacific region could become an effective locomotive to support economic growth in the rest of the world, contribute to fostering peace, and exercise influence in global economic governance to a degree that is commensurate with its rising economic weight.

To be sure, the proposed agenda is ambitious, and it would require an extensive institutional architecture for decision-making, consensus building, operationalizing it across sectors, and implementing it throughout the region. The following is an outline of a possible institutional architecture, which draws upon the experiences of various regional economic integration schemes from across the world.

Institutional architecture

The institutional architecture could include the following elements:

The Asia-Pacific Economic Summit (APES): As the highest level body, APES would be tasked with setting up the region's agenda and providing direction for its implementation among member countries. It would adopt a long-term vision for an economic community of Asia and the Pacific and its contours, reflect on global challenges and global affairs and the region's response, cooperate with other agencies and international organizations, and meet annually.

Ministerial councils on trade and investment, finance, transport, energy, food security and agriculture, environment, disaster risk reduction and technology: These ministerial councils would develop specific agendas of work for each sector. In a number of cases, the ministerial councils would actually replace the ad hoc ministerial conferences that ESCAP organizes on some sectors such as the environment (every five years), transport (every two years) and disaster risk reduction (every two years). In addition, these ministerial councils would give direction and operative instructions to respective senior officials meetings.

Committees of Senior Officials: In each sector, there would be Committees of Senior Officials to implement the mandates given by the respective ministerial councils.

A Consultative Committee of Subregional Associations: It will bring together all subregional bodies, such as the Association of Southeast Asian Nations (ASEAN), the South Asian Association for Regional Cooperation (SAARC), the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), the Economic Cooperation Organization (ECO) and the Pacific Islands Forum (PIF), of the region to facilitate mutual learning. It would meet annually at the sidelines of APES.

People-to-people contacts: The programme of regional economic integration would not be able to exploit its full potential without the people of the region coming together with their peers. Regional professional associations are needed to organize such interactions for all different professions. Two proposed associations that would be very critical are:

- i. An *Asia-Pacific business advisory council*, which would help mobilize the business community to exploit the full potential of regional economic integration, and
- ii. An *Asia-Pacific network of think tanks*, which would bring together research institutes across the region that conduct studies and recommend evidence-based policy alternatives to maximize the benefits from regional economic

integration in Asia and the Pacific. These groups would meet annually at the sidelines of APES.

Secretariat

The elaborate institutional architecture proposed above would need a secretariat to service it. The ESCAP secretariat, in view of its multidisciplinary nature, could play that role and should be strengthened for that purpose to provide secretariat services to APES, ministerial councils and their senior officials level operational bodies.

In addition, the ESCAP secretariat should work closely with other regional and subregional organizations, such as the ASEAN Secretariat, the SAARC Secretariat, the ECO Secretariat, the PIF Secretariat and the to be opened BIMSTEC Secretariat, among others, to coordinate the programmes of regional economic cooperation and integration. It should also strengthen its partnership with the Asian Development Bank, which is another regional development organization with overlapping membership and which is committed to regional economic integration, especially in areas such as financial cooperation, infrastructure development and connectivity, trade facilitation, environment and technology development.

The way forward

In December 1963, the First Ministerial Conference on Asian Economic Cooperation, held in Manila under the auspices of the Economic Commission for Asia and the Far East (ECAFE) as ESCAP was known then, endorsed a proposal to establish a regional development bank for Asia to supplement World Bank activities aimed at assisting the countries in the region in their efforts to rebuild their economies as they came out of the yoke of colonialism and the Second World War. Three years later, the Asian Development Bank was born.

Nearly half a century later, the Asia-Pacific region is once again at such a juncture in its evolution. In the aftermath of the global economic and financial crisis it has become clear that business as usual is no longer an option and that it is necessary to look for alternative ways and means to sustain the region's dynamism. The ESCAP Commission should seize this moment to convene the Asia-Pacific Ministerial Conference on Regional Economic Cooperation and Integration in 2013 not only to celebrate the fiftieth anniversary of the earlier conference but also to review and consider possible ways to implement the recommendations contained in the present study and chart out a road map to grow together for shared prosperity and for an inclusive and sustainable Asia-Pacific Century!



UN Photo



Photo by Farzana Hossen Mipu

Annex: Technical notes

i. Estimates of regional trade flows

The forecast trade flows for the period 2011-2016 shown in figure II.1 are based on estimates of regional trade flows using the gravity equation. The upper forecast is based on a model that includes a time trend, namely

$$x_{ijt} = \beta_{ij} + \beta_1 y_{it} + \beta_2 y_{jt} + \beta_3 t + \varepsilon_{ijt} ,$$

where x_{ijt} are the logarithms of exports from region i to region j in year t , y_{it} and y_{jt} are the logarithms of the GDPs of regions i and j in year t , and ε_{ijt} is a non-observable error term. The coefficients β_{ij} capture unobserved and time-invariant factors unique to exports from region i to j , such as geographical distance or trade costs. This model was estimated for the period 1993-2010 using data from the International Monetary Fund, Direction of Trade Statistics and the United Nations Statistical Division, National Accounts Main Aggregates database. The upper forecasts were calculated using the estimated equation

$$\hat{x}_{ijt} = \hat{\beta}_{ij} + 0.4374y_{it} + 0.8013y_{jt} + 0.1821t ,$$

for the years 2011-2016 based on GDP forecasts from the International Monetary Fund, World Economic Outlook database.

It is important to keep in mind that the estimate coefficient for the time trend 0.1821, or 1.8 per cent, per year, is based on trade data for a period of fast-increasing commodity prices. If these trends continue during the forecast period, the forecasts will be accurate, but this is uncertain. For that reason a more conservative, lower forecast was also considered in order to provide a range of possible future trade values. The more conservative forecast is based on the following model

$$x_{ijt} = \beta_{ij} + \beta_1 y_{it} + \beta_2 y_{jt} + \beta_t + \varepsilon_{ijt} ,$$

which includes time effects instead of a time trend, and was estimated as

$$\hat{x}_{ijt} = \hat{\beta}_{ij} + 0.4031y_{it} + 0.7670y_{jt} + \hat{\beta}_t$$

For the forecast period, the estimated time effects $\hat{\beta}_t$ were set to zero, which is their average value during the estimation period. In other words, these lower forecasts assume no time effects (neither positive nor negative) for the period 2011-2016.

ii. Export opportunities indicator

The export opportunities indicator is a type of overlap indicator designed to measure the degree to which competitive exports of one country match the expanding import markets of another. A higher degree of export opportunity indicates more favourable prospects for trade expansion given the past rate of growth of the import markets and the revealed comparative advantage of the export country. The indicator is scaled so that it can be interpreted as the potential annual increase in the size of the export market – measured in billions of United States dollars – of each country vis-à-vis each of its trading partners.

The indicator is defined as
$$I_{sd} = M^{t_1} \sum_i \left[\left(\frac{m_{id}^{t_1}}{M^{t_1}} - \frac{m_{id}^{t_0}}{M^{t_0}} \right) / (t_1 - t_0) \right]$$

for all i such that $RCA_{is}^{t_1} > 1$ and zero otherwise, where s is the source country, d is the destination country, i represents industries, m represents imports in billions of United States dollars, t_0 is the base period and t_1 ($t_1 > t_0$) is a more recent period, M represents global imports by all countries in all products in billions of United States dollars, and $RCA_{is}^{t_1}$ is the indicator of revealed comparative advantage of country s in industry i in the period t_1 . The latter is defined as the share of industry i in the exports of country s divided by the share of industry i in global exports. The export opportunities indicator was calculated for 40,940 pairs of export/import countries involving 231 economies and using trade data from the United Nations Commodity Trade database (COMTRADE) for the periods 1996-2000 and 2006-2010. The trade data used were classified according to the Standard International Trade Classification (SITC) rev2 at the 4-digit level.

The export opportunities indicator captures the recent dynamics of specific export markets from the perspective of each exporter. If imports of industry i expand significantly in country A and if country B has a revealed comparative advantage in industry i , this means that country B has potentially profitable export opportunities in country A. The indicator adds up the estimated annual increase in imports of country A for all the industries in which (i) the share of imports in total world imports has increased between the two periods and (ii) country B has a revealed comparative advantage. Of course, this increase in export opportunities is not going to exclusively benefit country B because there are other countries with a revealed comparative advantage in some of the same industries as country B. Nevertheless, it is easier for exporters to enter and expand sales in a growing market than in a stagnant or declining market. Thus, the indicator provides useful information about future potential increases in bilateral trade.

To provide a more concrete example of the construction of the indicator, consider the electronic microcircuits industry (SITC 7764). Between 1996-2000 and 2006-2010, China increased its share in the world's imports of electronic microcircuits by 0.7013 per cent. Thus, on average China increased its share in the world imports of electronic microcircuits by $0.7013 / 10 = 0.07013$ per cent per year. Multiplying this number by the value of global imports for 2010, \$13 trillion, a value of \$9.2 billion is obtained. In other words, imports of electronic microcircuits to China has been increasing by almost \$10 billion per year. On the other hand, the value of the indicator of revealed comparative advantage for electronic circuits during the period 2006-2010 is $14.8 > 1$ for the Philippines. As shown in table II.3, the total value of the indicator for exports of the Philippines to China is \$27.6 billion. The value of \$9.2 billion calculated above is part of this indicator value. It is obtained by adding the value of other industries for which (i) imports to China have grown faster than global imports and (ii) the Philippines has a revealed comparative advantage indicator greater than one.

One caveat to keep in mind is that the indicator does not take into account transportation and trade costs. In other words, an exporting country, such as country B, could have great export opportunities in country A, but it could be too expensive for exporters in country B to take

advantage of them. Nevertheless, the indicator provides guidance on which trade partnerships could be most desirable, a useful first step which should be followed by an analysis of the obstacles and necessary policy measures to facilitate such partnerships.

iii. Computable general equilibrium simulations

The analysis of the potential gains to trade from broader agreements is based on computable general equilibrium (CGE) simulations using the Global Trade Analysis Project (GTAP) model. The structure of the model is a standard, multi-region CGE, discussed in detail in T. Hertel, ed., *Global Trade Analysis: Modelling and Applications*, Cambridge: Cambridge University Press, 1997. The database used in the simulations is GTAP7.1 with base year 2004, the latest available at the time of writing. The database was updated to 2010 using a static projection based on labour growth rates, changes in the skilled/low-skilled labour composition, and capital accumulation. Total factor productivity was determined residually based on GDP. Applied tariff rates were also updated.

The simulations conducted were based on comparative static techniques. These have the disadvantage relative to dynamic techniques of not describing the time-path. In other words, the analysis focuses on the end outcomes rather than the transition to that outcome. However, this disadvantage is countered by the reduced degree of computational complexity, which allows the consideration of a larger number of potential scenarios and a greater level of sectoral and regional disaggregation, while still addressing the primary questions. The results should be interpreted as indicating how these economies would differ, relative to the updated 2010 equilibrium, after all adjustments in response to the liberalization have taken place, under the assumption that the trade arrangements being simulated have been implemented.

In each scenario, trade liberalization is modelled as a removal of all tariffs on merchandise trade. Thus the simulations represent upper bounds of the liberalization that could potentially take place, since, in practice, agreements provide for the exclusion of some products, notably agricultural products, as well as extensive phase-in periods for the elimination of tariffs on other products. The trade facilitation scenarios are implemented as a positive shock to the productivity of the transportation sector at the bilateral level for the countries engaged in liberalization. The shock applies to all goods and is assumed to affect all trading partners in both directions. In order to capture the potential gains from moving toward best practices, the size of the shock is proportional to ESCAP measures of comprehensive trade costs net of known tariffs. Both a medium-run closure, which captures the effects of resource reallocation, and a long-run closure, designed to capture potential dynamic gains from capital accumulation, are implemented.

As with all CGE studies, the modelling cannot capture all possible economic effects that can matter. A limitation of the modelling approached employed in this study is that it assumes perfectly competitive markets throughout, as in most CGE studies. Studies that do incorporate imperfect competition tend to generate welfare estimates that are roughly double those of competitive models.¹ Hence, the estimates presented here are probably conservative.

Another reason that the model results are probably conservative is that only merchandise trade liberalization is considered. However, while many new regional trade agreements do contain provisions for liberalizing trade in services, it is not always clear to what extent they are effective. In addition, the mechanisms for incorporating services trade liberalization into CGE models are still unsettled. One possibility is to use tariff equivalents, but it is not clear that services trade barriers really affect trade in the same way as tariffs affect merchandise trade.² Some authors argue that it is better to model the impact of services trade liberalization in terms of productivity enhancement. One example is work conducted by Dr. Phiippa Dee, whose research on the APEC economies indicates productivity gains in the region of 2 to 14 per cent.³ In summation, to the extent that can be realistically assumed that effective service trade liberalization will in fact be part

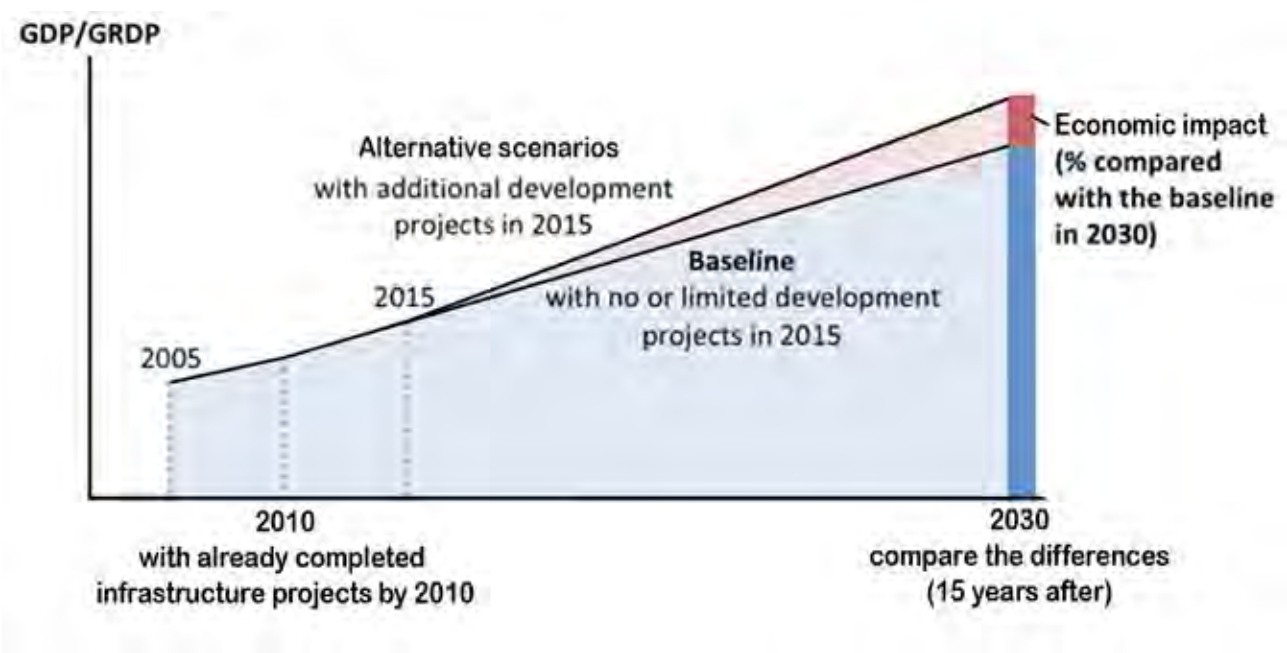
of the agreements under consideration, the results presented in this study probably understate the potential benefits. This will be an useful area for future research.⁴

iv. The IDE Geographical Simulation Model

The Geographical Simulation Model of the Institute of Developing Economies (IDE) is based on data for 1,699 regions in 15 Asian economies: Bangladesh; Brunei Darussalam; China; India; Indonesia; Japan; Lao People’s Democratic Republic; Malaysia; Myanmar; Philippines; Singapore; Thailand; Viet Nam; Hong Kong, China; and Macao, China. The data for the model include (i) estimates of arable land area, population and regional gross domestic products (RGDP) for each region based on official statistics for the year 2005, (ii) currently available highways, railways, sea shipment, and air shipment routes, and (iii) estimates of border cost measures, such as tariff rates, non-tariff barriers, other border clearance costs and transshipment costs. The model is useful for studying the dynamics of the location of population and industries over the long term, and for simulating the economic impacts of specific infrastructure projects at the subnational level for all the countries in the region.

In the model, the state of physical transport infrastructure of various land routes is operationalized by making assumptions about the average speeds at which vehicles can circulate. For instance, in the baseline scenario, the average land transport speed is set at 38.5 km/h in all routes with the exceptions of (i) Thailand, Malaysia and Singapore, where road networks are well developed and the average speed is set at 60 km/h, and (ii) Eastern India (the provinces of Arunachal Pradesh, Assam, Nagaland, Manipur, Mizoram, Tripura, Meghalaya and Sikkim) where, considering the mountainous terrain, the average speed is set at 19.25 km/h. In addition, the baseline scenario assumes that the average time and monetary cost of crossing national borders are 13.2 hours and \$500 per container, respectively, and that through traffic in Myanmar and Bangladesh is not allowed.

FIGURE TITLE
A.1. Interpreting simulation results



Source: S. Kumagai, 2012.

Three alternative scenarios are considered, namely (i) construction and improvements in physical infrastructure, (ii) the implementation of custom facilitation measures, and (iii) permitting through traffic in Myanmar and Bangladesh. The first one is operationalized by setting the average speed of land transport at 60 km/h in the routes considered. Under the second scenario, the time and monetary cost of crossing national borders are lowered to two hours and \$100 per container, respectively. Under the third scenario, through traffic is allowed in both Myanmar and Bangladesh.⁵

The simulations are run for a period of 25 years, between 2005 and 2030. Data on already completed projects until 2010 are incorporated into the model and additional development projects to be simulated are added in 2015. The net gains reported in figure A.1 are the differences between the baseline and the simulated scenario in the last year of the simulation period, 2030.

Endnotes

¹ See, e.g. Scollay and Gilbert, 2000; Gilbert and Wahl, 2002; Francois and Martin, 2010.

² See, e.g. Fontagne, Guillin and Mitaritonna, 2010.

³ See, e.g. Dee, 2010.

⁴ For more details see Gilbert, 2012.

⁵ For more details see Kumagai, 2012.

Photo by Warren Field

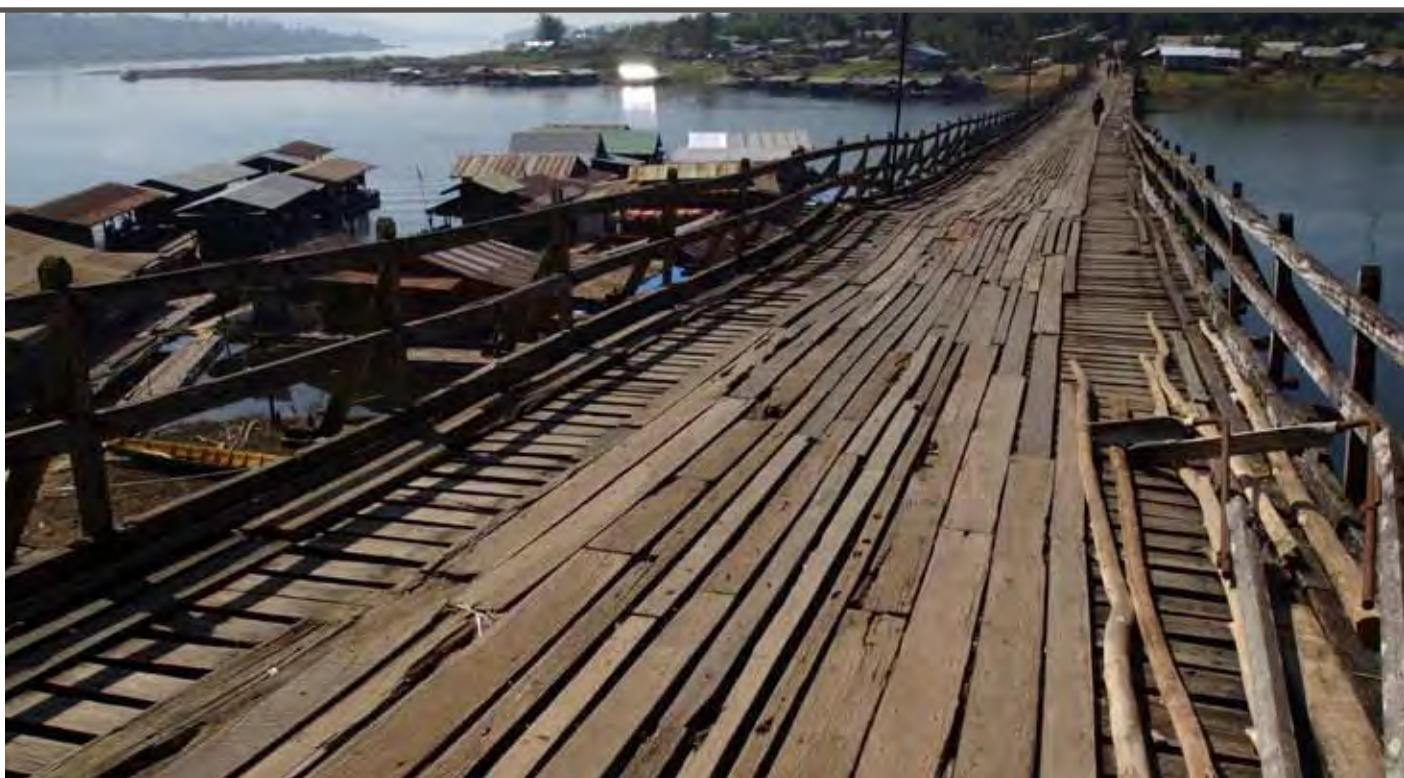




Photo by Warren Field

REFERENCES

- Airtel (2010). Bharti airtel launches high capacity direct terrestrial link between India and China, 23 December. Available from www.airtel.in/wps/wcm/connect/About%20Bharti%20Airtel/bharti+airtel/media+centre/bharti+airtel+news/enterprise/pg-bharti_airtel_launches_high_capacity_direct_terrestrial_link_between_India_and_China. Accessed 3 January 2012.
- Alene, A. D., and O. Coulibaly (2009). The impact of agricultural research on productivity and poverty in sub-Saharan Africa. *Food Policy*, vol. 34, No. 2, pp.198-209.
- Amsden, Alice (2001). *The Rise of "The Rest": Challenges to the West from Late-Industrializing Economies*. Oxford: Oxford University Press.
- Arvis, Jean-François, and Ben Shepherd (2011). The air connectivity index: measuring integration in the global air transport network. Policy Research Working Paper, No. WPS5722. Washington D.C.: World Bank. Available from www-wds.worldbank.org/servlet/main?menuPK=64187510&pagePK=64193027&piPK=64187937&theSitePK=523679&entityID=000158349_20110630135825.
- Asia-Europe Meeting (2010). Greater wellbeing and more dignity for all citizens. Chair statement to the 8th Asia-Europe Meeting. Brussels, 4-5 October. Available from http://consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/er/116887.pdf.
- Asian Development Bank (2007a). *Bangladesh Quarterly Economic Updates*, December. Available from www.adb.org/countries/bangladesh/economic-updates.
- _____ (2007b). *Development Effectiveness Brief: Greater Mekong Subregion*. Madaluyong City, Manila. Available from www.adb.org/sites/default/files/pub/2007/Greater-Mekong-Subregion.pdf.
- _____ (2007c). Proposed Asian Development Fund Grant, Loan, and Technical Assistance Grant: People's Republic of Bangladesh, Kingdom of Bhutan, India, and Nepal: South Asia Subregional Economic Cooperation Information Highway Project. Project 40054. Available from www2.adb.org/Documents/RRPs/REG/40054-REG-RRP.pdf.
- _____ (2008). *Emerging Asian Regionalism: A Partnership for Shared Prosperity*. Madaluyong City, Manila.

- _____ (2009). *Energy outlook for Asia and the Pacific 2009*. Madaluyong City, Manila.
- _____ (2011). *Institutions for Regional Integration: Toward an Asian Economic Community*. Madaluyong City, Manila.
- Asian Development Bank, and Asian Development Bank Institute (2009). *Infrastructure for a Seamless Asia*. Tokyo: ADBI. Available from www.adbi.org/files/2009.08.31.book.infrastructure.seamless.asia.pdf.
- Asian Development Bank, and United Nations, Economic and Social Commission for Asia and the Pacific (2009). *Designing and Implementing Trade Facilitation in Asia and the Pacific*. Mandaluyong City, Manila: ADB. Available from www.unescap.org/tid/publication/adbescapbook.asp.
- Asia-Pacific Association of Agricultural Research Institutions (2010). APAARI communication strategy 2010-2015. Bangkok. Available from www.apaari.org/publications/cs.html.
- Asia Society, and International Rice Research Institute (2010). Never an empty bowl: sustaining food security in Asia. Task Force Report. New York: Asia Society. Available from http://asiasociety.org/files/pdf/FoodSecurityTF_online.pdf.
- Association of Asia Pacific Airlines (2011). Asia Pacific airlines traffic results – November 2011, Press release, 28 December. Available from www.aapairlines.org/resource_centre/AAPA_PR_Issue23_NovTrafficResults_28Dec11.pdf.
- Association of Southeast Asian Nations (2004). ASEAN Plan of Action for Energy Cooperation (APAEC) 2004-2009. Adopted by the Twenty-Second ASEAN Ministers on Energy Meeting (22nd AMEM), Makati City, Metro Manila, Philippines, 9 June. Available from www.asean.org/pdf/APAEC0409.pdf.
- _____ (2006). *Statistics of Foreign Direct Investment in ASEAN*. 8th ed. Jakarta. Available from www.asean.org/5187-1.pdf. Accessed 13 December 2011.
- _____ (2009a). ASEAN Integrated food security (AIFS) framework and strategic plan of action on food security in the ASEAN region (SPA-FS) 2009-2013. Adopted at the 14th ASEAN Summit in Cha-am, Thailand, 1 March. Available from www.aseansec.org/22338.pdf. Accessed 20 February 2011.
- _____ (2009b). 2010 ASEAN plan of action for energy cooperation 2010 – 2015 bringing policies to actions: towards a cleaner, more efficient and sustainable ASEAN energy community. Adopted by Energy Ministers in Mandalay, Myanmar on 29 July. Available from [http://cil.nus.edu.sg/rp/pdf/2010 ASEAN Plan of Action on Energy Cooperation \(APAEC\) 2010-2015-pdf.pdf](http://cil.nus.edu.sg/rp/pdf/2010%20ASEAN%20Plan%20of%20Action%20on%20Energy%20Cooperation%20(APAEC)%202010-2015-pdf.pdf).

- _____. (2011a). *ASEAN Investment Report 2011: Sustaining FDI Flows in a Post-crisis World*. Jakarta. Available from www.aseansec.org/20440.htm.
- Association of Southeast Asian Nations, ASEAN Food Security Information System, and Asian Development Bank (2011). The roundtable meeting on strengthening ASEAN food security information: rice information, Bangkok, 25 October.
- AT Kearney (2010). *Investing in a Rebound: The 2010 A.T. Kearney FDI Confidence Index*. Available from www.atkearney.com/images/global/pdf/Investing_in_a_Rebound-FDICI_2010.pdf.
- Aung Hla Tun, and Alan Rayhould (2011). Myanmar 2010/11 FDI pledges soar due to Chinese projects. *Reuters*. 9 June. Available from <http://in.reuters.com/article/2011/06/09/myanmar-investment-idINL3E7H90ZW20110609>.
- Baldwin, R. (2011). 21st century regionalism: filling the gap between 21st century trade and 20th century trade rule. World Trade Organization, Economic Research and Statistics Division, Working Paper ERSD-2011-08. Geneva. Available from www.wto.org/english/res_e/reser_e/ersd201108_e.pdf.
- Baldwin, R., and E. Seghezza (2007). Are trade blocs building or stumbling blocks? New evidence. Discussion Paper, No. DP6599. London: Centre for Economic Policy Research.
- Bangladesh, Board of Investment (2012). Foreign direct investment in Bangladesh. Available from <http://boi.gov.bd/about-bangladesh/investment-and-trade/foreign-direct-investment-in-bangladesh>. Accessed 4 January 2012.
- Basu, Sudip Ranjan, Hiroaki Kuwahara, and Fabien Dumesnil (2011). Evolution of non-tariff measures: Emerging cases from selected developing countries. UNCTAD Policy Issues in International Trade and Commodities Study Series.
- Bhattacharyay, Biswa Nath (2010). Estimating demand for infrastructure in energy, transport, telecommunications, water and sanitation in Asia and the Pacific 2010-2020. Working Paper Series, No. 248. Tokyo: Asian Development Bank Institute. Available from www.adbi.org/files/2010.08.09.wp248.infrastructure.demand.asia.pacific.pdf.
- Bodie, Z., and M. Brière (2011). Financing future growth: the need for financial innovations. *OECD Journal: Financial Market Trends 2011*, vol. 2011, No. 1, pp. 141-144.
- Boston Consulting Group (2011). Global challengers 2011. Available from www.bcgperspectives.com/content/articles/globalization_companies_on_the_move_2011_global_challengers/.

- Brenner, Cath (2009). Technology transfer to developing countries is an impossible dream, *Guardian*, 9 December. Available from www.guardian.co.uk/environment/cif-green/2009/dec/09/technology-transfer. Accessed 1 February 2012.
- Brooks, D., David Roland-Holst, and Fan Zhai (2005). Asia's long-term growth and integration: reaching beyond trade policy barriers. Economic and Research Department Policy Brief Series No. 38. Mandaluyong City, Manila: Asian Development Bank. Available from [http://are.berkeley.edu/~dwrh/Docs/PB38-for-upload%20\(3\).pdf](http://are.berkeley.edu/~dwrh/Docs/PB38-for-upload%20(3).pdf).
- Cerrahogullari (2006). Botas terminal – Marmara Ereğlisi. Available from www.cerrahogullari.com.tr/ports/BOTAS%20TERMINAL%20-%20MARMARA%20EREGLISI.htm.
- Chatterton, I., and O. S. Puerto (2005). Estimation of the infrastructure investment needs in the South Asia region. Working Paper, No. 62608. Washington, D.C.: World Bank. Available from <http://documents.worldbank.org/curated/en/2011/01/14392731/estimation-infrastructure-investment-needs-south-asia-region-executive-summary>.
- Chesbrough, Henry William (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Boston, MA: Harvard Business School Press.
- Chichkin, A. (2011). Gazprom's Asian Dash. *Rossiiskaya Gazeta*, No. 5592. Available from www.rg.ru/2011/09/28/gaz.html. (In Russian).
- Cokanasiga, J., H. J. Keil, and A. Sisifa (2011). Pacific subregion: building healthy islands through partnership. In *Food for All: Investing in Food Security in Asia and the Pacific – Issues, Innovations, and Practices*. Mandaluyong City, Manila: Asian Development Bank. Available from www.adb.org/sites/default/files/food-for-all.pdf.
- Commission on Social Determinants of Health (2008). *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health*. Final Report of the Commission on Social Determinants of Health. Geneva, World Health Organization.
- Commonwealth Commission on Respect and Understanding (2007). *Civil Paths to Peace. Report of the Commonwealth Commission on Respect and Understanding*. London.
- CEPEA (2008). Report of the Track Two Study Group on Comprehensive Economic Partnership in East Asia (CEPEA), Tokyo, 20 June 2008. Available from www.thaifta.com/thaifta/Portals/0/cepea_report.pdf.
- _____ (2009). Phase II Report of the Track Two Study Group on Comprehensive Economic Partnership in East Asia (CEPEA). Tokyo, 3 July 2009. Available from www.dfat.gov.au/asean/eas/cepea-phase-2-report.pdf.

Containerisation International (2011a). *Containerisation International Yearbook 2011*. London.

_____ (2011b). Trade statistics, *Containerisation International*, September.

Dee, P. (2010). Quantifying the economy-wide effects of behind-the-border reforms in transport, energy and telecommunications in APEC economies. Paper prepared as a contribution to the project The Impacts and Benefits of Structural Reforms in Transport, Energy and Telecommunications Sectors, commissioned by the APEC Policy Support Unit.

Denisenko, Mikhail (2010). Migration and remittances in Central Asia and South Caucasia. Paper presented at Expert Group Meeting on Strengthening Capacities for Migration Management in Central Asia. Bangkok, 20-21 September.

Dumas, Lloyd J. (2006). Development and peace: a virtuous circle? Exploring the power and limits of the relationship, 3 August. Available from www.stwr.org/aid-debt-development/development-and-peace-a-virtuous-circle-exploring-the-power-and-limits-of-the-relationship.html.

Duval, Yann (2011). Trade facilitation in regional trade agreements: recent trends in Asia and the Pacific. Trade and Investment Division Staff Working Paper No. 02/11, March. Bangkok: ESCAP. Available from www.unescap.org/tid/publication/swp211.pdf.

Duval, Yann, and Chorthip Utoktham (2011a). Trade facilitation in Asia and the Pacific: which policies and measures affect trade costs the most? Trade and Investment Division Staff Working Paper No. 01/11, February. Bangkok: ESCAP. Available from www.unescap.org/tid/publication/swp111.pdf.

_____ (2011b). Trade costs in Asia and the Pacific: improved and sectoral estimates. Trade and Investment Division Staff Working Paper 05/11. Bangkok: ESCAP. Available from www.unescap.org/tid/publication/swp511.pdf.

Easley, David, and Jon Kleinberg (2010). *Networks, Crowds and Markets: Reasoning About a Highly Connected World*. Cambridge, United Kingdom: Cambridge University Press.

East Asia Summit (2009). Chairman's Statement of the 4th East Asia Summit. Hua Hin, 25 October. Available from www.15thaseansummit-th.org/PDF/25-08_EAS%20Statement.pdf.

Einhorn, Bruce (2010). U.S. Senate targets India outsourcers, *Bloomberg Businessweek*, 8 August. Available from www.businessweek.com/globalbiz/blog/eyeonasia/archives/2010/08/us_senate_targets_india_outsourcers.html.

Energy Information Administration (2010a). India analysis brief. Available from www.eia.gov/cabs/india/Full.html.

- _____ (2010b). Kazakhstan analysis brief. Available from www.eia.gov/countries/cab.cfm?fips=KZ.
- Energy Sector Management Assistance Program (2008). *Potential and Prospects for Regional Energy Trade in the South Asia Region*. Washington, D.C. Available from http://siteresources.worldbank.org/SOUTHASIAEXT/Resources/Publications/448813-1219694050026/Regional_Energy_Trade_in_South_Asia_Final_ESMAP.pdf.
- Erol, T., and D. D. Ozuturk (2011). An alternative model of infrastructure financing based on capital markets: infrastructure REITS (InfraREITs) in Turkey. *Journal of Economic Cooperation and Development*, vol. 32, No. 3, pp. 65-88.
- European Commission (2009). Central Asian Research and Education Network (CAREN). Available from http://ec.europa.eu/europeaid/where/asia/regional-cooperation-central-asia/education-and-research/caren_en.htm.
- European National Research and Education Networks (n.d.). The third generation of the Trans-Eurasia Information Network (TEIN3). Available from www.tein3.net.
- Fay, M. (2001). Financing the future: infrastructure needs in Latin America, 2000-2005. Working Paper, No. 2545. Washington, D.C.: World Bank.
- fDi Intelligence (2011). fDi Markets: Crossborder Investment Monitor Database. Available from www.fdimarkets.com.
- Fontagne, L., A. Guillin, and C. Mitaritonna (2010). Estimations of tariff equivalents for the services sectors. Mimeo: CEPII.
- Food and Agriculture Organization of the United Nations (1996). Rome declaration on world food security and world food summit plan of action. World Food Summit, Rome, 13-17 November.
- Food and Agriculture Organization of the United Nations, and South Asian Association for Regional Cooperation (2008). Regional strategies and programme for food security in the SAARC member States. Final report of project on Support for the preparation of regional programme for food security (SPFP/RAS/6702).
- Food Secure Pacific (2010). Summit outcomes document of the Pacific food summit, Port Vila, Vanuatu, 21-23 April. Available from www.foodsecurepacific.org/documents/FINAL%20Summit%20Outcomes%20document_layout_June%201.pdf.
- Francois, J., and W. Martin (2010). Ex ante assessment of the welfare impacts of trade reforms with numerical models. In *New Developments in Computable General Equilibrium Analysis of Trade Policy*, vol. 7, *Frontiers of Economics and Globalization*, J. Gilbert, ed. Emerald.

- Francois, J. R., B. Pradumna, and G. Wignaraja. (2009). *Pan-Asian Integration: Linking East and South Asia*. New York: Palgrave Macmillan for Asian Development Bank.
- Freire, Clovis (2012). Measuring progress towards the MDGs: a capability-based approach. MPDD Working Papers, forthcoming. Bangkok: ESCAP.
- Frost, E.L. (2008). *Asia's New Regionalism*. Boulder, Colorado: Lynne Rienner Publishers.
- Gilbert, J. (2012). The economic impact of new regional trading developments in the ESCAP region.
- Gilbert, J., and T. Wahl (2002). Applied general equilibrium assessments of trade liberalization in China. *World Economy*, vol. 25, No. 5, pp. 697-731.
- Gillen, David (2009). International air passenger transport in the future. International Transport Forum Joint Transport Research Centre, Discussion Paper No. 2009-15. Geneva: Organisation for Economic Co-operation and Development. Available from www.internationaltransportforum.org/jtrc/discussionpapers/DP200915.pdf.
- Global Climate Network (2009). Breaking through on technology: overcoming the barriers to the development and wide deployment of low-carbon technology. Available from www.globalclimatenetwork.info/publicationsandreports/publication.asp?id=680. Accessed 5 December 2011.
- Global LNG Info (2011). Global LNG developments in 2011. Available from www.globallnginfo.com/develop2011.htm.
- Global Times (2012). EU's unilateral carbon tax disturbs other nations, 22 March. Available from www.globaltimes.cn/NEWS/tabid/99/ID/701643/EUs-unilateral-carbon-tax-disturbs-other-nations.aspx.
- Greater Mekong Subregion (2010). Joint Ministerial Statement, GMS in the next decade: new frontiers of cooperation, 16th Ministerial Meeting, Ha Noi, Viet Nam, 20 August.
- Hayes, Geoffrey (2010). Migration in the Pacific. Background paper for the meeting on Strengthening national capacities to deal with international migration. Bangkok: ESCAP, 22-23 April. Available from www.unescap.org/ESID/Meetings/Migration10/MigrationPacific.pdf.
- Hazell, P. B. R. (2009). Transforming agriculture: the green revolution in Asia in Millions fed: proven successes. In *Agricultural Development*, D. J. Spielman, and R. Pandya-Lorch, eds. Washington D.C.: CABI.

- Hertel, T., ed. (1997). *Global Trade Analysis: Modelling and Applications*. Cambridge: Cambridge University Press.
- Hidalgo, César A., and Ricardo Hausmann (2009). The building blocks of economic complexity. *PNAS*, vol. 106, No. 26, pp. 10570-10575. Available from [www.chidalgo.com/Papers/HidalgoHausmann_PNAS_2009_PaperAndSM .pdf](http://www.chidalgo.com/Papers/HidalgoHausmann_PNAS_2009_PaperAndSM.pdf).
- Hoekman, Bernard (2011). Harnessing services trade reform for inclusive growth: lessons from the 1980s vs. the 2000s. In *Service Sector Reforms: Asia-Pacific Perspectives*, Pierre Sauve, Gloria Pasadilla, and Mia Mikic, eds. Bangkok: ADBI-ARTNeT.
- Huber, Daniel G., and Jay Gulledge (2011). Extreme weather and climate change: understanding the link and managing the risk. Science and Impacts Program. Arlington, Verginia: Center for Climate and Energy Solutions. Available from www.c2es.org/publications/extreme-weather-and-climate-change.
- Huguet, Jerrold W., Aphichat Chamrathirong, and Kerry Richter (2011). Thailand migration profile. In *Thailand Migration Report 2011*, J. Huguet and A. Chamrathirong, eds. Bangkok: International Organization for Migration.
- Inderst, G. (2009). Pension fund investment in infrastructure. OECD Working Papers on Insurance and Private Pensions No. 32. Available from www.oecd.org/dataoecd/41/9/42052208.pdf.
- India, Ministry of Railways (2008-09). *Indian Railways Year Book 2008-09*. Available from www.indianrailways.gov.in/railwayboard/uploads/directorate/stat_econ/pdf/Year_Book_English2008-09.pdf and <http://www.railtelindia.com>.
- Intergovernmental Panel on Climate Change (2011) IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. Fact Sheet. Available from http://ipcc-wg2.gov/SREX/images/uploads/IPCC_SREX_fact_sheet.pdf.
- International Civil Aviation Organization (2010). Asia/Pacific area traffic forecasts 2010-2030. Report of the Fifteenth Meeting of the Asia/Pacific Area Traffic Forecasting Group. Bangkok, 1-8 November.
- International Energy Agency (2011). *Key World Energy Statistics*. Paris. Available from www.iea.org/textbase/nppdf/free/2011/key_world_energy_stats.pdf.
- International Financial Services London (2009). *International Private Wealth Management*, London.
- International Monetary Fund (2012). *World Economic Outlook Update*, 24 January. Available from www.imf.org/external/pubs/ft/weo/2012/update/01/pdf/0112.pdf.

- International Telecommunications Union (2011). *Measuring the Information Society 2011*. Geneva. Available from www.itu.int/net/pressoffice/backgrounders/general/pdf/5.pdf.
- Ivakhnyuk, Irina (2006). Migration in the CIS region: common problems and mutual benefits. Paper presented at the International Symposium on International Migration and Development. UN/POP/MIG/SYMP/2006/10. Turin, Italy, 28-30 June.
- Kawai, M. and Ganeshan Wignaraja (2007). ASEAN+3 or ASEAN+6: Which way forward?. ADBI Discussion Paper, No. 77. Tokyo: Asian Development Bank Institute.
- _____ (2010). Asian FTA s: trends, prospects, and challenges. ADB Economics Working Paper Series, No. 226, October. Manila: Asian Development Bank. Available from www.adb.org/documents/Working-Papers/2010/Economics-WP226.pdf.
- Kelegama, Saman, and Indra Nath Mukherji (2007). India-Sri Lanka bilateral free trade agreement: six years' performance and beyond. Discussion Paper No. 119. New Delhi: Research and Information System for Developing Countries. Available from www.ris.org.in/images/RIS_images/pdf/dp119_pap.pdf.
- Kharas, Homi, and Harpaul Alberto Kohli (2011). Asia in the global economy in 2050: the Asian century. In *Asia 2050: Realizing the Asian Century*, Harinder Kohli, Ashok Sharma, and Anil Sood, eds. Singapore: Asian Development Bank.
- Kohli, H. S., A. Sharma, and A. Sood (2011). *Asia 2050: Realizing the Asian Century*. New Delhi: Sage Publications for Asian Development Bank.
- Kose, M., Guy M. Meredith, and Christopher M. Towe (2004). How has NAFTA affected the Mexican economy? Review and evidence. Working Paper, No. WP/04/59. Washington, D.C.: International Monetary Fund.
- Kumagai, S. (2012). Geographical simulation analysis on the economic impacts of improved regional transport connectivity between ASEAN and India. Background paper prepared for ESCAP. Bangkok: ESCAP.
- Kumar, Nagesh (2002). *Globalization and the Quality of Foreign Direct Investment*. New Delhi: Oxford University Press.
- _____ (2003). Intellectual property rights, technology and economic development: experiences of Asian countries. *Economic and Political Weekly*, vol. 38, No. 3, pp. 209-226.
- _____, ed. (2004). *Towards and Asian Economic Community: Vision of a New Asia*. New Delhi and Singapore: RIS and Institute for Southeast Asian Studies.

- _____ (2005). Performance requirements as tools of development policy: lessons from experiences of developed and developing countries for the WTO Agenda on Trade and Investment. In *Putting Development First*, Kevin Gallagher, ed. London: Zed Press.
- _____ (2007a). Investment provisions in regional trading arrangements in Asia: relevance, emerging trends, and policy implications. Artnet Working Papers No. 46. Bangkok: ESCAP. Available from www.unesacp.org/tid/artnet/pub/wp4607.pdf.
- _____ (2007b). Towards broader regional cooperation in Asia. Asia-Pacific Trade and Investment Initiative Discussion paper. Colombo: UNDP Regional Centre. Available from http://hdru.aprc.undp.org/resource_centre/pub_pdfs/P_1059.pdf.
- _____ (2008). Internationalization of Indian enterprises: patterns, strategies, ownership advantages, and implications. *Asian Economic Policy Review*, vol. 3, No. 2, pp. 242-261.
- _____ (2011). Financial crisis and regional economic cooperation in Asia-Pacific: towards an Asian economic community?. MPDD Working Papers, WP/11/16. Available from www.unescap.org/pdd/publications/workingpaper/wp-11-16.pdf.
- Kumar, N., and Gallagher (2006). Relevance of policy space for development: implications for multilateral trade. New Delhi: RIS Discussion Paper 120. Available from www.ris.org.in/images/RIS_images/pdf/dp120_pap.pdf.
- Kumar, N., K. Kesavapany, and Yao Chaocheng, eds. (2008). *Asia's New Regionalism and Global Role*. New Delhi and Singapore: RIS and ISEAS.
- Lall, S. (2005). Rethinking industrial strategy: the role of the state in the face of globalisation. In *Putting Development First: the Importance of Policy Space in the WTO and IFIs*, Kevin P. Gallagher, ed. London: Zed Books.
- LOWTAX (2011). Mauritius: double tax treaties. Tortola, British Virgin Islands. Available from www.lowtax.net/lowtax/html/jmu2tax.html#2tax.
- Majumdar, B., and N. Verma (2008). Iranian president tries to seal India pipeline. Reuters, 29 April. Available from <http://uk.reuters.com/article/2008/04/29/idUKISL26015020080429>.
- McKinsey Global Institute (2011). Internet matters: the net's sweeping impact on growth, jobs, and prosperity. Available from www.mckinsey.com/Insights/MGI/Research/Technology_and_Innovation/Internet_matters.
- Medvedev, Denis (2006). Beyond trade: the impact of preferential trade agreements on foreign direct investment inflows. Policy Research Working Paper Series, No. 4065. Washington, D.C.: World Bank.

- Menon, Jayant (2005) Building blocks or stumbling blocks? Regional cooperation arrangements in Southeast Asia. Discussion Paper No. 41. Manila: Asian Development Bank Institute. Available from www.adbi.org/files/2005.11.dp41.regional.cooperation.seasia.pdf.
- Mochizuki, Takshi, and others (2012). Asean+3 to double Chiang Mai Initiative safety net to \$240 Bln. *The Wall Street Journal*, 3 May. Available from <http://online.wsj.com/article/BT-CO-20120503-703698.html>.
- Mohapatra, S., D. Ratha, and A. Silwal (2011). Outlook for remittance flows 2011-13: remittance flows recover to pre-crisis levels. Migration and Development Brief 16. Washington D.C.: World Bank. Available from <http://siteresources.worldbank.org/EXTDECPROSPECTS/Resources/476882-1157133580628/MigrationandDevelopmentBrief16.pdf>.
- Myrdal, Gunnar (1968). *Asian Drama: An Inquiry into the Poverty of Nations*, volumes I, II and III. New York: Twentieth Century Fund.
- Newsroom Magazine (2011). Chennai and Tamil Nadu: India's new reality. *Newsroom Magazine*, 20 July. Available from <http://newsroom-magazine.com/2011/executive-branch/state-department/chennai-and-tamil-nadu-indias-new-reality>.
- Ocampo, Jose Antonio (2004). Multidimensionality of peace and development: A DESA perspective. Available from www.un.org/esa/peacebuilding/Library/05_Article_Goi_F_27_July.pdf.
- Ockwell, D. G., J. Watson, and G. Macherron (2008). Key policy considerations for facilitating low carbon technology transfer to developing countries. *Energy Policy*, vol. 36, No. 11, pp. 4104-4115.
- Organisation for Economic Co-operation and Development (2011). Central Asia: more diversified and competitive economies would attract investors. Available from www.oecd.org/document/63/0,3746,en_21571361_44315115_46975551_1_1_1_1,00.html.
- _____ (2012). Development: aid to developing countries falls because of global recession, 4 April. Available from www.oecd.org/document/3/0,3746,en_21571361_44315115_50058883_1_1_1_1,00.html.
- Pacific Trade and Invest (2010). *Business Advantage Pacific Islands 2010/11*. Available from www.businessadvantageinternational.com/publications/pacific.html.
- Parthan, B., and others (2010). Lessons for low-carbon energy transition: experience from the renewable energy and energy efficiency partnership (REEEP). *Energy for Sustainable Development*, vol. 14, pp. 83-93.

- Quah, Danny (2010). The global economy's shifting centre of gravity. Economics Department, LSE and LSE Global Governance, Available from http://econ.lse.ac.uk/~dquah/p/GE_Shifting_CG-DQ.pdf.
- Rajan, Ramkishan (2008). Money and financial cooperation in Asia. In *Asia's New Regionalism and Global Role: Agenda for the East Asia Summit*, Nagesh Kumar, K. Kesavapany, and Yao Chaocheng, eds. New Delhi: RIS and Singapore: ISEAS.
- Ramamurti, Ravi (2011). Impact of the crisis on new FDI players: past, present and future of sovereign wealth funds, private equity and emerging market transnational corporations. *Transnational Corporations*, vol. 20, No. 1 (April), pp. 39-68. Available from www.unctad.org/en/docs/unctaddiaeia20114a_en.pdf.
- Regional Thematic Working Group on International Migration including Human Trafficking (2012). Situation report on international migration in South and South-West Asia. Discussion paper. Bangkok. Available from <http://test.actionbias.com/sites/test/files/SDD-Sit-Rep-Exec-Summary-v4.pdf>.
- Reisen, Helmut (2011). Ways round the middle income trap, 7 November. Available from <http://shiftingwealth.blogspot.in/2011/11/ways-round-middle-income-trap.html>.
- Rowley, A. (2004). Asian Integration needs and overarching framework. *New Asia Monitor*, vol. 1, No. 1, p.6.
- Rustele.com (2011). Rostelecom, China Telecom agree to expand-Europe-Asia bandwidth, 6 June. Available from <http://rustele.com/news-and-events/rostelecom-china-telecom-agree-to-expand-europe-asia-bandwidth.html>. Accessed 3 January 2012.
- Salidjanova, Nargiza (2011). Going out: an overview of China's outward foreign direct investment. Staff Research Report. Washington, D.C.: U.S.-China Economic and Security Review Commission.
- Sawai, Mari (2011). Who is vulnerable during tsunamis? Experiences from the great East Japan earthquake 2011 and the Indian Ocean tsunami 2004. Information and Communication Technology and Disaster Risk Reduction Division Working Paper. Bangkok: ESCAP. Available from www.unescap.org/idd/working%20papers/IDD-DRS-who-is-vulnerable-during-tsunamis.pdf. Accessed February 2012.
- Schneider, M., and others (2008). Understanding the CDM's contribution to technology transfer. *Energy Policy*, vol. 36, pp. 2930-2938.
- Scollay, R., and J. Gilbert (2000). Measuring the gains from APEC trade liberalization: an overview of CGE assessments. *World Economy*, vol. 23, No. 2, pp. 175-193.

- Secretariat of the Pacific Community (2011). *Towards an Energy Secure Pacific: A Framework for Action on Energy Security in the Pacific 201-2020*. Suva, Fiji.
- Shahiduzzaman, Khan (2012). Energy ring best option to solve regional needs. *The Financial Express*, 15 March. Available from www.thefinancialexpress-bd.com/more.php?date=2012-03-15&news_id=123501.
- Shankar, V. (2004). Towards an Asian Economic Community: exploring the past. In *Towards an Asian Economic Community: Vision of a New Asia*, Nagesh Kumar, ed. New Delhi and Singapore: RIS and ISEAS.
- Shaw, D. John (2007). International emergency food reserve. In *World Food Security: A History since 1945*. New York: Palgrave Macmillan. Available from <http://jac.aopsys.com/articles/world-food-security/world-food-security-page182.html#back>.
- Singh, Manmohan (2004). Speech at the ASEAN-India Business Summit. New Delhi, 19 October.
- Smith, Russell E. (2005). Regional integration in historical perspective: NAFTA, MERCOSUL and the EUROPEAN UNION. Proceedings of the fifty-seventh Annual Meeting Labor and Employment Relations Association Series. Illinois: University of Illinois at Urbana-Champaign. Available from www.press.uillinois.edu/journals/irra/proceedings2005/smith.html.
- South Asian Association for Regional Cooperation (2009). Identification of further projects with particular reference to the SAARC agriculture perspective/vision 2020: discussion of new project ideas. Paper prepared for the fifth Meeting of SAARC Technical Committee on Agriculture & Rural Development, Dhaka, 5-6 August.
- _____ (2011). Area of cooperation: agriculture and rural. Available from www.saarc-sec.org/areaofcooperation/cat-detail.php?cat_id=44. Accessed 20 February 2011.
- Sussangkarn, C. (2010). The Chiang Mai Initiative Multilateralization: origin, development and outlook. Working Paper Series No. 230. Tokyo: Asian Development Bank Institute.
- Sutton, Michael (2005). Japanese trade policy and economic partnership agreement: a new conventional wisdom. *Ritsumeikan Annual Review of International Studies*, vol. 4, pp. 113-135. Available from www.ritsumei.ac.jp/acd/cg/ir/college/bulletin/e-vol4/sutton.pdf.
- Telegeography (2009). GlobalComms insight, December. Available from www.telegeography.com/research-services/globalcomms-insight/?utm_source=insight_product_page&utm_medium=html&utm_campaign=freeinsight.
- Thailand, Ministry of Finance (2011). Thailand's economic outlook projection 2011, 28 September.

- Thailand, National Economic and Social Development Board (2012). Gross domestic product: Q4/2011, 20 February.
- Timmer, C. P. (2005). Agriculture and pro-poor growth: an Asian perspective. Working Paper, No. 63. Washington D.C.: Center for Global Development.
- Topalov, A. (2009). Sakhalin-4 lost prospects (In Russian). *Gazeta.Ru*. Available from www.gazeta.ru/business/2009/03/03/2951931.shtml.
- Trejos, Alberto (2005). Bilateral and regional free trade agreements, and their relationship with the WTO and the Doha Development Agenda. *Global Economy Journal*, vol. 5, No. 4, pp. 1-5.
- Tuli, Vipul (2008). Regional cooperation for Asian energy security. In *Asia's New Regionalism and Global Role: Agenda for the East Asia Summit*, Nagesh Kumar, K. Kesavapany, and Yao Chaocheng, eds. New Delhi: RIS and Singapore: ISEAS.
- United Nations (2009). Progress report April 2008-October 2009 of the UN High-Level Task Force on the Global Food Security Crisis. November. Available from <http://un-foodsecurity.org/sites/default/files/09progressreport.pdf>.
- _____ (2011). *Millennium Development Goals Report 2011*. New York. Available from www.un.org/millenniumgoals/11_MDG%20Report_EN.pdf.
- United Nations Conference on Sustainable Development (2011). Report of the Asian and Pacific Regional Preparatory Meeting for the United Nations Conference on Sustainable Development, annex two: Seoul Outcome of the Asian and Pacific Regional Preparatory Meeting for the United Nations Conference on Sustainable Development. Seoul, Republic of Korea, 19-20 September.
- United Nations Conference on Trade and Development (2006). *Investment Provisions in Economic Integration Agreements*. Geneva.
- _____ (2009). *Review of Maritime Transport*. Sales No. E.09.II.D.11.
- _____ (2010a). *Review of Maritime Transport*. Sales No. E.10.II.D.4.
- _____ (2011a). *Best Practices in Investment for Development, Case Studies in FDI, How to Attract and Benefit from FDI in Mining: Lessons from Canada and Chile*, Investment Advisory Series, Series B, No. 7. New York and Geneva.
- _____ (2010b). *Non-Tariff Measures: Evidence from Selected Developing Countries and Future Research Agenda*. Geneva and New York.

- _____ (2011c). *Review of Maritime Transport*. Sales No. E.11.II.D.4.
- _____ (2011d). *World Investment Report 2011: Non-Equity Modes of International Production and Development*. Sales No. E 11.II.D.2.
- United Nations, Economic and Social Commission for Asia and the Pacific (2001). *Ministerial Conferences and High-level Meeting: Report on the Ministerial Conference on Environment and Development in Asia and the Pacific, 2000: Note*. Sales No. E.01.II.F.12.
- _____ (2005). *The Fifth Ministerial Conference on Environment and Development in Asia and the Pacific, 2005*. Sales No. E.05.II.F.31.
- _____ (2009a). *Asia-Pacific Trade and Investment Report 2009: Trade-led Growth*. Sales No. E.09.II.F.19.
- _____ (2009b). *Sustainable Agriculture and Food Security in Asia and the Pacific*. Sales No. E.09.II.F.12.
- _____ (2010a). *Economic and Social Survey of Asia and the Pacific 2010*. Sales No. E.10.II.F.2.
- _____ (2010b). *Financing and Inclusive and Green Future: A Supportive Financial System and Green Growth for Achieving the Millennium Development Goals in Asia and the Pacific*. Sales No. E.10.II.F.4.
- _____ (2011a). *Asia-Pacific Trade and Investment Report 2011: Post-Crisis Trade and Investment Opportunities*. Sales No. E.11.II.F.8.
- _____ (2011b). *Economic and Social Survey of Asia and the Pacific 2011*. Sales No. E.11.II.F.2.
- _____ (2011c). *Facilitating Agricultural Trade in Asia and the Pacific*. Studies in Trade and Investment Series No.74. Bangkok. Available from www.unescap.org/tid/publication/tipub2616.asp.
- _____ (2011d). Report of the Ministerial Conference on Environment and Development, 23 February. E/ESCAP/67/8. Available from www.unescap.org/esd/environment/rio20/pages/Download/E67_8E.pdf.
- _____ (2011e). *Statistical Yearbook for Asia and the Pacific 2011*. Sales No. E.11.II.F.1.
- _____ (2012). *Economic and Social Survey of Asia and the Pacific 2012*. Sales No. E.12.II.F.9.

- United Nations, Economic and Social Commission for Asia and the Pacific, Asian Development Bank, and United Nations Development Programme (2012). *Asia-Pacific Regional MDG Report 2011/12*. Bangkok: United Nations and Asian Development Bank.
- United Nations, Economic and Social Commission for Asia and the Pacific, Asian Development Bank, and United Nations Environment Programme (2010). *Preview, Green Growth, Resources and Resilience: Environmental Sustainability in Asia and the Pacific, 2010*. Bangkok. ST/ESCAP/2582.
- United Nations, Economic and Social Commission for Asia and the Pacific, and United Nations International Strategy for Disaster Reduction (2010). *Asia-Pacific Disaster Report 2010: Protecting Development Gains - Reducing Disaster Vulnerability and Building Resilience in Asia and the Pacific*. Bangkok. Available from www.unescap.org/publications/detail.asp?id=1406.
- United Nations Environment Programme (2011). *Resource Efficiency: Economics and Outlook for Asia and the Pacific*. Bangkok. Available from www.unep.org/roap/Portals/96/REEO_AP_Key.pdf.
- United Nations International Strategy for Disaster Reduction (2012). United Nations International Strategy for Disaster Reduction Secretariat (UNISDR).
- United Nations World Tourism Organization (2012). UNWTO and Asia Pacific ambassadors discuss global tourism issues, March. Available from <http://asiapacific.unwto.org/en/news/2012-03-23/unwto-and-asia-pacific-ambassadors-discuss-global-tourism-issues>. Accessed on 19 April 2012.
- United States (2009). *Economic Report of the President of the U.S.* Washington, D.C.: United States Government Printing Office.
- Van Berkel, R. (2008). *Background Study to Guide Policy Interventions for Enhancing the Development and Transfer of Publicly-Funded Environmentally Sound Technologies*. Bangkok: ESCAP.
- Wade, R. (2003). *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton, New Jersey: Princeton University Press.
- Wesley, Michael (2011). The Pacific's potential: responding to the Asian century. Perspectives delivered at the Conference on the Pacific Islands and the World: Realising the Pacific's Potential. Auckland, 5 September. Available from www.lowyinstitute.org/events-docs/PIWC_The-Pacifcs-potential.pdf. Accessed 5 January 2012.

- Wilson, Dominic, Constantin Burgi, and Stacy Carlson (2011). The BRICs remain in the fast lane. BRICs Monthly, Goldman Sachs Global Economics, Commodities and Strategy Research, No. 11/06 (24 June). Available from www.goldmansachs.com/our-thinking/brics/brics-reports-pdfs/brics-remain-in-the-fast-lane.pdf.
- Wilson, D., and R. Purushothaman (2003). Dreaming with BRICs: the path to 2050. *Global Economics Paper No. 99*. Goldmansachs. Available from www2.goldmansachs.com/ideas/brics/bricsdream.
- World Bank (1992). *Pacific Regional Energy Assessment*. Washington, D.C.
- _____ (1993). *The East Asian Miracle: Economic Growth and Public Policy*. World Bank Policy Research Report. Washington, D.C.
- _____ (2000) *Progress towards the Unification of Europe*. Washington, D.C. Available from <http://siteresources.worldbank.org/ECAEXT/Resources/publications/Unification-of-Europe/14803.pdf>.
- _____ (2008). *World Development Report 2008: Agriculture for Development*. Washington D.C.
- World Business Council for Sustainable Development, and International Union for Conservation of Nature (2008). *Agricultural Ecosystems: Facts and Trends*. Switzerland.
- World Economic Forum (2003). Press Release, 18 June.
- World Trade Organization (2011). *World Trade Report 2011: The WTO and Preferential Trade Agreements: From Co-existence to Coherence*. Geneva. Available from www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report11_e.pdf.
- Yeats, Nicola, and Bob Deacon (2006). Globalism, regionalism and social policy: framing the debate. Comparative Regional Integration Studies Working Papers, No. 0-2006/6. Belgium: United Nations University Institute.
- Yepes, T. (2004). Expenditure on infrastructure in East Asia region, 2006-2010. Paper commissioned for the ADB/JBIC/World Bank East Asia Pacific Infrastructure Flagship Study. Available from <http://siteresources.worldbank.org/INTEAPINFRASTRUCT/Resources/855084-1137106254308/ResourceRequirements.pdf>.
- Yoshino, N. (2011). Raising market quality - integrated design of 'market infrastructure'. *Center of Excellence Newsletter*, No. 11.



Photo by Warren Field

كيفية الحصول على منشورات الأمم المتحدة

يمكن الحصول على منشورات الأمم المتحدة من المكتبات ودور التوزيع في جميع أنحاء العالم. استلم منها من المكتبة التي تتعامل معها أو اكتب إلى: الأمم المتحدة، قسم البيع في نيويورك أو في جنيف.

如何购取联合国出版物

联合国出版物在全世界各地的书店和经售处均有发售。请向书店询问或写信到纽约或日内瓦的联合国销售组。

HOW TO OBTAIN UNITED NATIONS PUBLICATIONS

United Nations publications may be obtained from bookstores and distributors throughout the world. Consult your bookstore or write to: United Nations, Sales Section, New York or Geneva.

COMMENT SE PROCURER LES PUBLICATIONS DES NATIONS UNIES

Les publications des Nations Unies sont en vente dans les librairies et les agences dépositaires du monde entier. Informez-vous auprès de votre libraire ou adressez-vous à : Nations Unies, Section des ventes, New York ou Genève.

КАК ПОЛУЧИТЬ ИЗДАНИЯ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ

Издания Организации Объединенных Наций можно купить в книжных магазинах и агентствах во всех районах мира. Наводите справки об изданиях в вашем книжном магазине или пишите по адресу: Организация Объединенных Наций, Секция по продаже изданий, Нью-Йорк или Женева.

COMO CONSEGUIR PUBLICACIONES DE LAS NACIONES UNIDAS

Las publicaciones de las Naciones Unidas están en venta en librerías y casas distribuidoras en todas partes del mundo. Consulte a su librero o diríjase a: Naciones Unidas, Sección de Ventas, Nueva York o Ginebra.

United Nations publication
Copyright © United Nations 2012
ISBN 978-97-4-680332-8
ST/ESCAP/2629

United Nations Economic and Social Commission for Asia and the Pacific
United Nations Building, Rajadamnern Nok Avenue
Bangkok 10200, Thailand
Tel: (+66 2) 288-1636
Fax: (+66 2) 288-3007
E-mail: escap-mpdd@un.org
escap-publicationsoffice@un.org
Website: www.unescap.org

The Asia-Pacific region's rapid growth since the 1950s had been supported by a favourable external economic environment and opportunities arising from globalization. This, however, has changed dramatically in the aftermath of the global financial crisis of 2008-2009. In the new global environment, sustaining the region's growth and realizing the Asia-Pacific century critically depends on its ability to harness the potential of regional economic integration.

In light of the many complementarities arising from its diversity, the region, a late starter in regionalism, has many underexploited opportunities for mutually beneficial regional integration. Regional economic integration can also assist in making regional development more balanced, with the lagging economies receiving a boost through stronger connectivity and integration with economic growth poles, such as China and India. Besides fostering peace, such cooperation could also help the region address shared vulnerabilities and risks and exercise its influence in global economic governance in a way commensurate to its rising economic weight.

To harness the potential of regional economic integration, the study recommends a four-pronged scheme with a long-term vision of building an economic community of Asia and the Pacific:

- ④ Coalescing the numerous bilateral and subregional trading arrangements of the region into a broader regional trading and economic cooperation arrangement with built-in safeguards and flexibilities for poorer countries.
- ④ Seamless physical connectivity across the region to spread the benefits of economic integration to lagging subregions through transport, energy and ICT links, and the adoption of best practices in trade and transport facilitation.
- ④ Financial cooperation for closing development gaps and to ensure the optimal use of the region's resources for mutual benefit.
- ④ Economic cooperation for addressing shared vulnerabilities and risks, such as energy and food insecurity, natural disasters, pressures on natural resources, social exclusion and rising inequalities – towards an inclusive and sustainable Asia-Pacific century.

ISBN 978-97-4-680332-8