Mobilizing Resources for Infrastructure Investment: A Developing Asia Perspective

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Infrastructure Needs, Economic Growth and Poverty Reduction

- The need for infrastructure development is recognized by the United Nations Millennium Development Goals (MDGs) in respect of water and sanitation, telephones, personal computers and internet users (Willoughby, 2004)
- G-20's Seoul Development Consensus recognized infrastructure as on of its nine key pillars where "action and reform are most critical to ensure inclusive and sustainable economic growth and resilience in developing countries, especially LIC" (G20 Seoul Summit Leaders' Declaration)
 - Under the action plans of the G20, a group of six multilateral development banks (MDBs) including the World Bank and the Asian Development Bank (ADB) has prepared The Interim Report (TIR) which includes financing issues (needs, gaps, constraints) and some examples of pilot regional infrastructure development projects.
 - The Report highlights the role of MDBs in leveraging financial resources through partnerships and better practices, and expects the G20 leader to support more efficient spending and to unlock project pipelines with technical assistance and financial support.

Asia – Stylized Facts

- Asia is world's largest and most populous region
 - 26 million km² land area (30% of the world's total land area)
 - 3.96 billion inhabitants in 2010 (57% of the world's population) and set to rise by 23.5% by 2050 to 4.89 billion (ADB 2011)
- Asia has experiences the world's highest economic growth rates recently making this century as Asian Century
 - The emerging economies of Asia, such as ASEAN, India and China are expected to triple their per capita income over the next two decades if all the risks and constraints can be managed
 - Asia's economy is approaching the size of Europe's and N. America's and it is expected to hold 51% of share of the world economy by 2050 (ADB 2011)
- Rapid economic and population growth; rapid urbanization and the rise of middle class has caused huge and visible pressure on infrastructure, particularly urban infrastructure
 - In almost all the countries of Asia, urbanization is rapid and there is a growing middle class with increasing demand for quality goods and services
 - Infrastructure development such as energy, transport, telecommunications, water and sanitation hasn't caught up with growth and is not being able to cater the needs



Linkages between Infrastructure Development, Economic Growth and Poverty Reduction

- Rapid infrastructure development (transport, energy, ICT, water, sanitation etc.) has been a critical factor behind Asia's high growth and poverty reduction.
 - increased connectivity and the formation of the East Asian production networks and supply chain making Asia a factory of the world
 - the economy of many Asian countries flourished as they have become more connected with each other and the rest of the world.
 - Many studies have found that improved basic infrastructure facilities have profound positive effects on economic growth
 - Effective use of infrastructure explained a quarter of growth differential between Africa and East Asia and more than 40% of that between low- and high growth countries
 - Several studies concluded that basic infrastructure development contributed to reducing poverty and improving the standard of living in many Asian countries by providing better access to transport services, markets, education and healthcare, electricity etc.

(Source: ADB/ADBI, 2009)



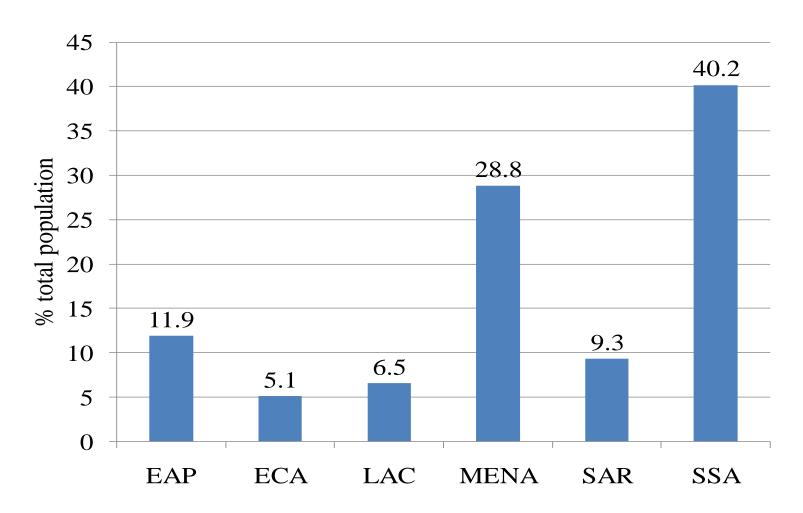
Shocking Statistics for Asia

- Asia is home to about 1.8 billion people living on less than \$2 per day (72 percent of the world's poor)
- About 1.5 billion have no access to decent sanitation
- 638 million have no access to clean water
- 930 million have no access to electricity
- 1.2 billion have no access to roads
- 47% of total road network are unpaved
- A little under half of the region's roads are unpaved.
- Compared to all other regions of the world, infrastructure gap in Asia is the highest in absolute numbers.

(Source: ADB/ADBI, 2009; ADB)



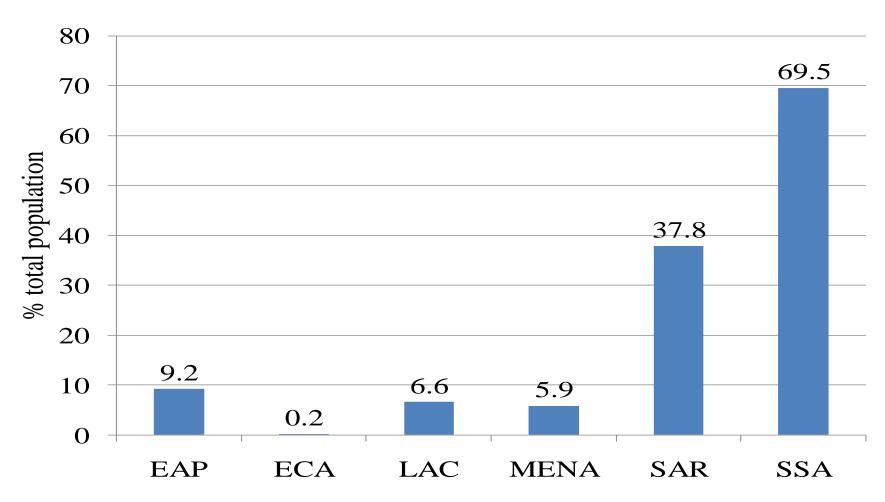
Figure 2. Population without Access to Clean Water in Major Developing Regions of World



(Source: WHO and UNICEF 2010)



Population without Access to Electricity in Developing Regions of World



(Source: IEA World Energy Outlook 2010)



Reasons for Increasing Infrastructure Investment in Asia

Enhancing investment in national and regional infrastructure in Asia can

- abate the effects of the recent economic and financial crisis for the following reasons
- enhance competitiveness and productivity, which could help in economic recovery and in sustaining growth in medium to long-term.
- help improve standard of living and reduces poverty by connecting isolated places and people with major economic centers and markets and providing basic services
- narrow the development gap within and among Asian economies through enhancing connectivity, particularly for the smaller and landlocked.
- promote environmental sustainability by designing appropriate projects and through facilitating cross-border trade in environmentally-friendly or clean energy resources across borders.
- facilitate and accelerate regional trade and economic cooperation and integration by increasing regional demand and intraregional trade necessary to rebalance Asia's and world's economic growth.

Source: Author, and ADB/ADBI (2009)



Concept of Connectivity

The major components of connectivity include:

- Physical connectivity (hard infrastructure)
 - Transport;
 - Energy; and
 - Information and Communications Technology (ICT)
- Soft Connectivity (soft infrastructure)
 - Appropriate policies, institutions and regulations facilitating effectiveness of hard infrastructure
 - Trade (goods and services) liberalization, promotion and facilitation;
 - Investment and financial sector liberalization, promotion and facilitation;
 - Agreements/arrangements on mutual recognition of standards, quality, and systems;
 - Regional connecting infrastructure (e.g., transport, energy and telecommunications crossborder agreements) cross-border agreements;
 - Harmonized or standardized cross-border/customs systems and procedures;
 - Capacity and institutions building programs; and
 - Research and development, ideas, innovation, knowledge and technology networks; and
- People-to-people, Institutions-to-institutions and knowledge connectivity
 - Educational, commercial and cultural networks;
 - Civil society, NGO, public and private sector networks; and
 - Tourism and hospitality network.

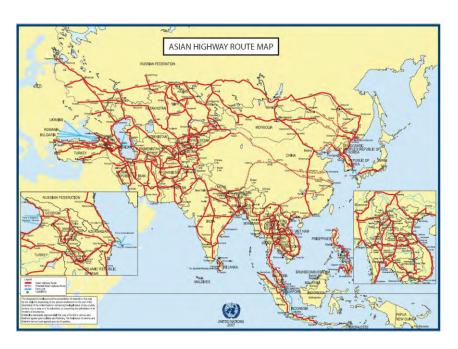
(Source: Adapted from ASEAN, 2010)



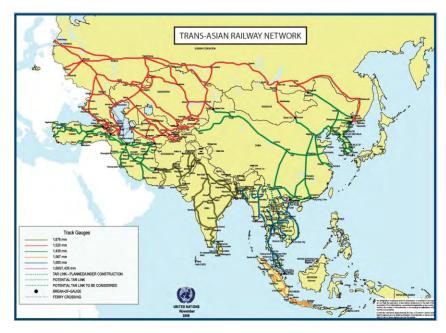
Vision of a Seamless Asia

- Seamless Asia a physically, economically and financially integrated region connected by world-class, efficient and environment-friendly infrastructure networks that promote trade and investments, widen access to markets and public services, promote inclusive and sustainable economic growth, and reduce poverty
- Efficient regional production network and supply chains by streamlining policies, systems and procedures such as customs procedure and other bureaucratic impediments
- Efficient regional financial markets that channel savings from Asia and the rest of the world for productive investments such as infrastructure
- Seamless connections across Asia and with the rest of the world to create a more competitive, prosperous, and integrated region, as well as to take advantage of Asia's enormous untapped economic potential

Example of Pan-Asian Connectivity



AH seeks to improve economic links between Asia, Europe, and the Middle East. It is planned as a network of 141,271 km of standardized highways—including 155 cross-border roads—that crisscrosses 32 Asian countries.



TAR covering a distance of 114,000 km in 28 countries, would link pan-Asian and pan-European rail networks at various locations, connecting major ports of Asia and Europe and providing landlocked countries with better access to seaports either directly or in conjunction with highways.

Source: UN ESCAP 2010a, 2010b, 2010c, and 2010d



Challenges Facing Infrastructure Development in Asia

- 1. Creating appropriate types of infrastructure that will support the continuing growth and development of the Asian economies and improve the quality of life of billions of people;
- 2. Identifying the means for addressing pressing human needs of over two billion people who require basic transport (road and rail, waterways and airways), electricity, water and sanitation.
- 3. Ensuring inclusion so that the resulting economic and social benefits have been very widespread, despite the diversity of the region's economies;
- 4. Mobilizing adequate resources for infrastructure development;
- 5. Preparing a comprehensive and integrated infrastructure plan identifying priority bankable (or viable) projects and financing them through proper mechanisms and instruments;
- 6. Dealing with the externalities and minimizing the social and environmental costs of the development of a new and effective infrastructure base for Asia; and
- 7. Dealing with urban infrastructure management to cope up with the extraordinary pace of urbanization in Asia.

Financing Needs for Asia's National New Infrastructure and Maintenance: 2010-2020

(2008 \$ million)

Sector/ Subsector	New Capacity	Replacement	Total
Energy (Electricity)	3,176,437	912,202	4,088,639
Telecommunications	325,353	730,304	1,055,657
Mobiles	181,763	509,151	690,914
Telephones	143,590	221,153	364,743
Transport	1,761,666	704,457	2,466,123
Airports	6,533	4,728	11,260
Ports	50,275	25,416	75,691
Railways	2,692	35,947	38,639
Roads	1,702,166	638,366	2,340,532
Water and Sanitation	155,493	225,797	381,290
Sanitation	107,925	119,573	227,498
Water	47,568	106,224	153,792
Total	5,418,949	2,572,760	7,991,709

Sources: ADBI (2009); Bhattacharyay (2008).



National Infrastructure Investment Needs in Asia, by region or subregion, 2010–2020

(2008 US\$ billion)

Sector or Subsector	East : Southea		South <i>i</i>	Asia	Centra	l Asia	Paci	ific	Total
	(value)	(%)	(value)	(%)	(value)	(%)	(value)	(%)	
Electricity	3,182.46	58.2	653.67	28.6	167.16	44.7	•••		4,003.29
Transportation	1,593.87	29.1	1,196.12	50.5	104.48	28	4.41	73.3	2,898.87
Tele- communications	524.75	9.6	435.62	18.4	78.62	21	1.11	18.4	1,040.10
Water and sanitation	171.25	3.1	85.09	3.6	23.40	6.3	0.51	8.5	280.24
Total	5,472.33	100.0	2,370.50	100.0	373.66	100.0	6.02	100.0	8,222.50

Source: Bhattacharyay 2010b



Investment Needs for Regional Pipeline **Projects: 2010-2020**

	Transport Pro	ojects	Energy Proj	ects	Total		
Region/ Subregion	Cost (\$ million)	No.	Cost (\$ million)	No.	Cost (\$ million)	No.	
Asia	177,077	931	-	-	177,077	931	
Asian Highway	43,276	121	-	-	43,276	121	
Trans-Asian Railway	82,801	45	-	-	82,801	45	
Asian Container Ports ^a	51,000	765	-	-	51,000	765	
East/Southeast-Central-South Asia b	-	-	22,975	5	22,975	5	
Southeast Asia	5,858	17	41,444	33	47,302	50	
GMS	5,858	17	2,604	14	8,462	31	
Trans- ASEAN Gas Pipeline	-	_	7,000	1	7,000	1	
BIMP-EAGA	_	_	100	1	100	1	
Others	-	_	31,740	17	31,740	17	
Central Asia	21,414	38	11,131	44	32,545	82	
CAREC	21,414	38	10,861	43	32,275	81	
Others	-	-	270	1	270	1	
South Asia	293	3	6,846	6	7,139	9	
Total	204,642	989	82,369	88	287,038	1,077	

Sources: Bhattacharyay (2008) and adapted from UNESCAP (2006a; 2007a,b; 2008a,b); ADB (2008a); CAREC (2008a,b,c); GMS (2009); ASEAN (2004); Bhattacharya and Kojima (2008); China Post (2007); Kathuria (2006); ADB staff estimates (2008); ASEAN Center for Energy (2005); and Von Hippel DBInstitute (2001).



Asia's Total Regional Indicative Investment Needs for Identified and Pipeline Infrastructure Projects by Regional or Subregional Program, 2010–2020 (US\$ billion)

		Transport					
Regional or Subregional Program	Energy	Airport Port	Rail	Road	TF / Logistics	Total	Grand Total
Asian highways				17.43		17.43	17.43
Trans-Asian Railway			107.47			107.47	107.47
Asian container ports		51.45				51.45	51.45
Central Asia Regional Economic Cooperation	15.67	1.35	5.13	12.93	9.93	29.34	45.00
Greater Mekong Subregion	2.60	0.20	1.52	3.97	0.16	5.86	8.46
Association of Southeast Asian Nations (ASEAN)	11.58		16.80				28.38
Brunei–Indonesia–Malaysia Philippines East ASEAN Growth Area	0.10						0.10
South Asia Subregional Economic Cooperation	0.13				0.20	0.20	0.34
Other**	61.93				0.09	0.09	62.02
Total	92.02	52.99	130.92	34.33	10.38	228.63	320.64

Note: Regional pipeline infrastructure consists of 1,202 bilateral, subregional, and pan-Asian infrastructure projects.

Source: Bhattacharyay 2010b



^{**} Includes projects connecting East/Southeast – Central – South Asia that do not explicitly fall under a sub- regional program.

Infrastructure Financing Gap

- Within 2010-2020, Asia needs to invest about US\$8.3 trillion (about US\$750 billion per year) in both national and regional infrastructure for energy, telecommunications, transport, water and sanitation (Bhattacharyay, 2010b)
- Regional resources are invested elsewhere, and infrastructure projects in developed countries attract far greater global private sector funding than developing economies in the region.
- Private sector share in East Asia's infrastructure investment is as low as 5% (Prior to the 1997 crisis it was 20%).



Twin Goals of Financing

- Focus on Asian integration through enhanced regional connectivity— developing and implementing regional infrastructure projects has high pay-offs for all participating countries
- Asian large financial and technical resources can be effectively mobilized to meet the large investment needs in productive sectors like infrastructure



Challenges and Constraints Facing Infrastructure Financing in Asia

Limited resources, particularly in the low income countries

- Asian LICs and high fiscal deficit countries have limited fiscal space to address the growing needs of infrastructure financing as well as maintenance.
- Investment needs as percentage of GDP show that it can be a real burden for the poorer and high deficit countries
 - (during the period from 2010 to 2020, Lao PDR, Mongolia and Bangladesh are required to invest as much as 13.6%, 13.45% and 11.56% of their GDP for infrastructure) (Bhattacharyay, 2010b).
- Maintenance costs for existing infrastructure can consume between 21% (Malaysia) to as high as 90% (Fiji) (Bhattacharyay, 2010b).
- Nneeds for concessional funding for LICs from MDBs like ADB and WB

Lack of private sector participation

- Infrastructure projects are usually complex, expensive and lengthy, hence recouping financial returns also take longer time.
- Also involve several major risks that can not be effectively managed by the privates sector e.g., political, uncertainties about future costs and revenues,
- Consequently, private parties are usually reluctant to invest in infrastructure.

Lack of adequate soft infrastructure: Policy, regulatory and institutional weaknesses in the financial sector for free movement of capital across borders

- Insufficient market opening and capital account liberalization;
- Limited and varying degrees in transparency, financial regulation, financial supervision, and corporate governance;
- Inadequacies in risk management in financial firms and markets; and
- Heterogeneity of supervisory, accounting and auditing rules and regulatory frameworks across countries.

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Strategy for Financing

- Large financing needs should be translated into viable and bankable projects
 - Project Development Facilities (pilot successful cases that can be replicated)
 - Viability Gap Funding Mechanisms
- Public and Private Partnerships
 - PPP Policy, Legal, and Institutional Frameworks
 - Viability Gap Funding
 - Risk Management Frameworks
- 3. Regional financing mechanisms
 - Asian financial market integration could enhance cross-border capital and to utilize Asia's robust savings/foreign exchange reserve for national and regional infrastructure investment.
 - Identify and adopt innovative funding strategies, mechanisms and instruments
 - A pan-Asia or ASEAN + 6 comprehensive investment treaty similar to the ASEAN Comprehensive Investment Agreement is essential to promote free movements of cross-border investment for infrastructure.

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Potential sources of financing (2)

- Public Funding:
 - ✓ Traditional public sector funding and fiscal stimulus
 - ✓ Public sector savings, sovereign wealth funds, foreign reserves
- Pan-Asian and Sub-regional Infrastructure Funds
 - ✓ Asian regional infrastructure fund (ARIF)
 - ✓ ASEAN Infrastructure Fund (AIF)
- Multilateral Development Banks and Bilateral Agencies
 - ✓ Asian Development Bank (ADB)
 - ✓ World Bank (WB)
 - ✓ Japan International Cooperation Agency (JICA)
- Capital Markets: Local Currency Bond Markets
 - ✓ Asian Bond Market Initiative (ABMI)
- Regional Infrastructure Companies for Financing Specific Sectors
- Sovereign Wealth Funds



Infrastructure Investment in the Stimulus Packages of the Major Asian Economies (US\$ billion)

Country	Total Fiscal Stimulus	Infrastructure component	Infrastructure as % of Total Stimulus	Types of Infrastructure
PRC	600.0	275.0	45.80%	Railways, airports, electrical transmission technology, expressways, telecommunications technologies, rural roads, electricity, gas, water, and irrigation projects
India	60.0	33.5	55.80%	Highway, port, and power sectors
Indonesia	7.7	1.3	16.90%	Communications and transport infrastructure, rural infrastructure, and development of ports and shipping industry
Viet Nam	8.0	4.8	60.00%	Infrastructure spending
Thailand	46.7	30.6	65.50%	Water resource development and road construction in villages and rural areas along with transport, logistics, energy, and telecom improvements
Malaysia	2.0	0.2	8.50%	Low and medium cost housing, upgrade, repair, and maintain police stations and army camps, and public and basic infrastructure project maintenance
ROK	11.0	3.2	29%	Roads, universities, schools, hospitals
Japan	\$154.55	Above 16%	Above 10%	-Yen 1.6 trillion for fostering environmentally friendly technologies, including plans to provide cheaper solar power to homes. -Up to \$2,500 as tax breaks to consumers on purchases of "green" cars; subsidies of 5% on energy efficient televisions and other appliances.

Notes: PRC: People's Republic of China, ROK: Republic of Korea

Sources: Author's estimations from data in: Kang (2010); Sugimoto (2010); Kumar and Soumya (2010); Patunru and Zetha (2010); Nguyen, Nguyen, and Nguyen (2010); Jitsuchon (2010); World Bank (2009); FAITC (2009); Alibaba.com (2008); IFCE (2009); Economy Watch (2010); (Tabuchi 2009)

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Financial Resources in Asia: Savings and Reserves in Selected Asian Economies

Country/ Region	GDP	Gross Sav (2009		Foreign Exchange Reserves (2009)		
	(US\$ Billion)	(US\$ Billion)	% of GDP	(US\$ Billion)	% of GDP	
PRC	4,985	2355*	47	2,399	48	
Hong Kong, China	N/A	64*	-	256	-	
Japan	5,068	N/A	-	997	20	
Korea, Rep. of	833	286*	34	265	32	
East Asia-4	10,885	2,705	25	3,917	36	
Indonesia	540	83	15	61	11	
Malaysia	192	N/A	-	93	48	
Philippines	160	26	16	38	24	
Singapore	182	87*	48	186	102	
Thailand	264	80*	30	134	51	
ASEAN-5	1,338	276	21	511	38	
India	1,310	410*	31	259	20	
Asia-10	13,533	3,390	25	4,686	35	

Note: NA = Not Available *2008 Data

Source: World Bank WDI (2010), IMF-IFS (2010)



Types of Risk and Mitigating Instruments

Risk	Instrument
Exchange risk	Exchange rate guarantees; currency baskets
Inflation risk	Inflation-linked instruments
Commodity price risk	Commodity price-linked instruments
Credit risk	Credit guarantees
Demand (traffic) risk	Demand (traffic) guarantees
Economic risk	GDP-linked instruments ^[1]

Source: Bhattacharyay (2011)



^[1] GDP-linked bonds lower debt service payments in times of economic distress, helping governments avoid default from revenue-related fiscal shortfalls, and offer investors premium returns if GDP growth is strong.

Potential Infrastructure Financing Instruments

Guaranteed and Linked Bonds

 Exchange rate guarantees; currency baskets, inflation-linked instruments, commodity price-linked instruments, credit guarantees, demand (traffic) guarantees, GDP-linked instruments

Mobilising Funds from Islamic Financial Markets

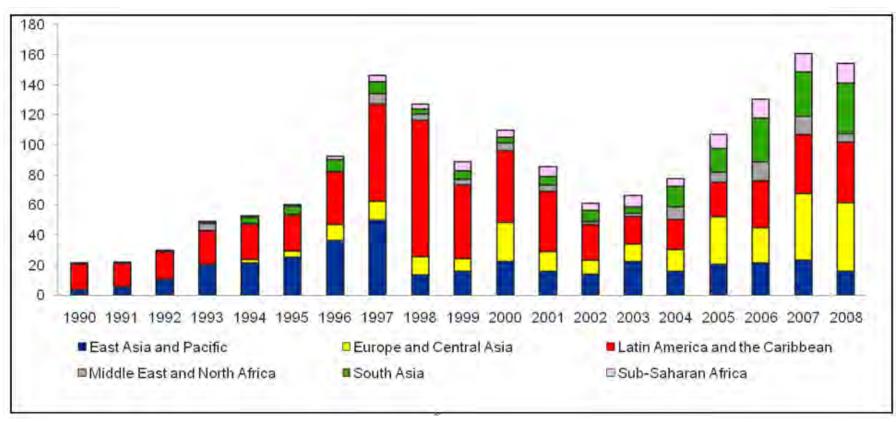
- Islamic bonds (sukuks) from Islamic Development Bank (IDB)
- Financial markets in the Middle East and Malaysia

Private Sector

- Public-Private Partnerships (PPP)
- Build, Operate and Transfer (BOT)
- Privatization
- Private Finance Initiatives (PFI)
- Asian Infrastructure Currency Unit (AICU) Based Bond



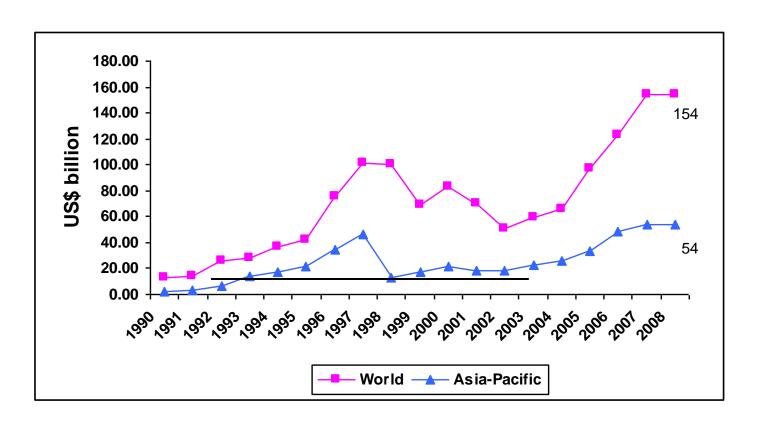
Trends in Private Infrastructure Investments by Major Developing Regions: 1990-2008



Source: World Bank PPI Database (http://ppi.worldbank.org/)



PPP in Asia and the Pacific



From 1990-2008, the total private investment committed to infrastructure amounted to US\$1,640 billion for the world and US\$472 billion for Asia-Pacific (Source: World Bank 2011)

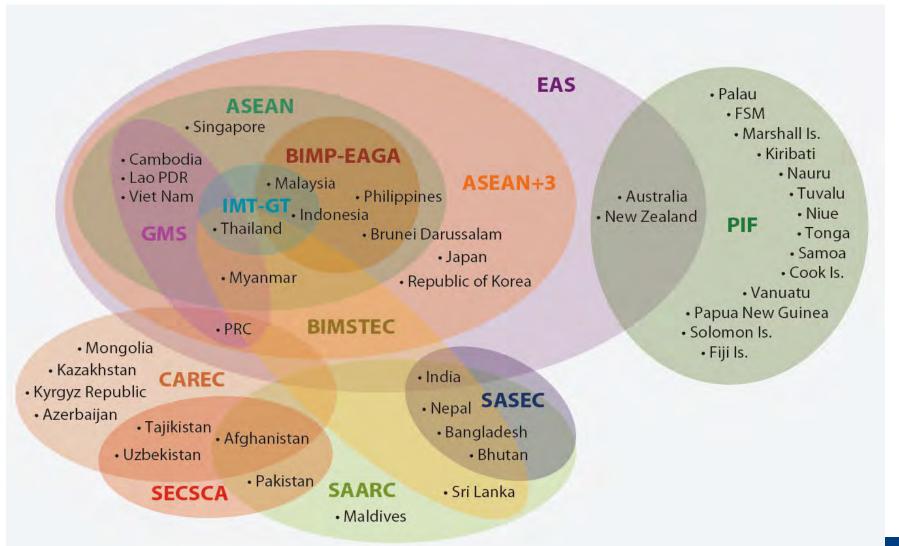


Characteristics of Existing Asian Institutions for Infrastructure Connectivity

- Many overlapping subregional institutions operating with varying speeds & addressing regional infrastructure issues in different degrees, with multiple objectives
- Number of participating countries vary from 3 to 16 countries
- Most subregional institutions are informal (except ASEAN and SAARC) – no legal binding or enforcement capacity
- Even formal ASEAN follows non-interference, sovereignty, incrementalism, and consensual decision-making
- Most operate at summit/ministerial level-some at senior officials level
- Most take advisory, regulatory, and financing modalities



Architecture for Subregional Integration and Cooperation





Role of the ADB (1)

- The Asian Development Bank (ADB) has been playing an important role in financing and sustaining development in Asia.
- ADB uses its comparative strengths, along with the other development institutions and developing countries, to achieve the UN Millennium Development Goals (MDGs) as appropriate global benchmarks for tracking the key elements of poverty reduction and human development.
- It recognizes that to prevent the adverse impacts of the ongoing global financial crisis, the Bank should provide more resources to support growth through infrastructure development.
- 'Strategy 2020', ADB's long-term strategic framework, has three pillars: inclusive economic growth, environmentally sustainable growth, and regional integration. Its infrastructure projects in the member countries are streamlined in accordance with these three pillars.
- ADB has four core areas of operation which either directly or indirectly facilitate infrastructure development and financing.



Role of the ADB (2)

- The infrastructure core focuses both on building physical assets and related institutional/policy reforms, and aims at promoting investments in improving transport, communication, and energy connectivity within and between developing member countries.
- The **environment core** thrives for ensuring sustainable development.
 - Clean energy initiatives (i) Triple Currency Bond / Clean Energy Bond \$5 billion ii) Solar Power Initiative \$ 2.25 billion
- Regional cooperation and integration focuses on increasing financial resources for regional programs and projects including regional infrastructure development and connectivity, and supporting developing member countries and regional bodies to build their institutional capacity to manage regional cooperation and integration.
- The **financial development core** supports the development of financial infrastructure, institutions, and products and services; facilitates the creation of a harmonized regulatory framework, a common credit guarantee mechanism, and a regional clearing and settlement system; and promotes channeling the region's savings into the most productive investments, particularly development of the capital market.

Role of the ADB (3) DELETE?

ADB' Lending by Types of Infrastructure 2008–2010 (\$ million)							
		2008–20	_				
Sectors		(Average	e) º				
		\$	%				
Infrastructure		7,882	72				
	Energy	2,331	21				
	Transport	3,265	30				
	Water	816	7				
	General Infrastructure	1,470	13				
Other Sectors	3	3025	28				
TOTAL 10,908 100							
а	Others include Finance Sector Development, Education, Public Sector Management, Industry and Trade and Disaster and Emergency Assistance.						
b	2009 data excludes Countercyclical Support Facility amounting to \$2.5 billion and the PSOD equity component of INO: Indonesian Infrastructure Financing Facility.						
Source: Asian Development Bank.							

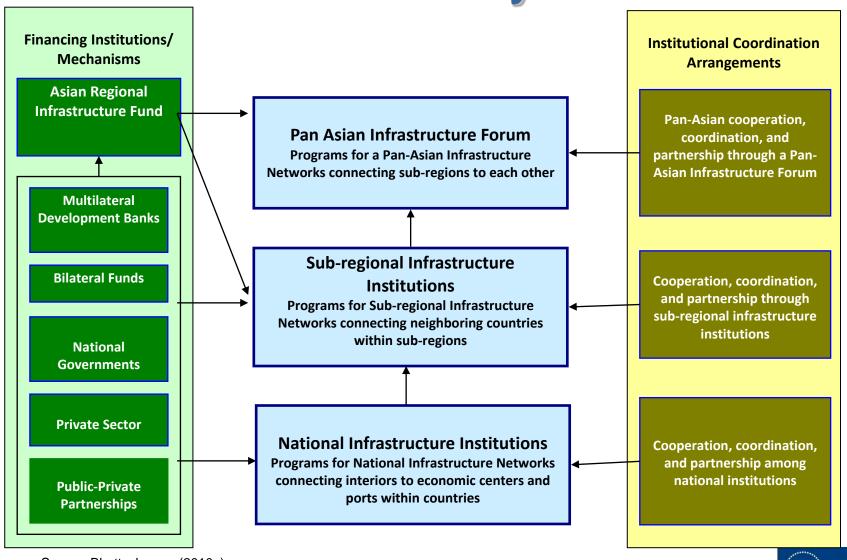


Institutional Framework for Asia (1)

- Asia's market-led integration and fragmented institutional arrangements calls for a pan-Asian approach with a new pan-Asian institutional framework integrating existing subregional institutions:
 - Pan-Asian Infrastructure Forum (PAIF)
 - Coordinate and integrate existing subregional initiatives toward a seamless Asia with: (i) explicit, treaty-based, legally biding rules and (ii) regulations with compliance monitored by a standing body or secretariat
 - Asian Regional Infrastructure Fund (ARIF)
 - Mobilize international funds (public and private) and help prioritize, prepare, and finance "bankable" regional connectivity projects



Institutional Framework for Pan-Asian Connectivity



Source: Bhattacharyay (2010a)



Key policy recommendations (1)

- Addressing the financing problem of Asia's infrastructure—i.e., increasing the use of regional resources for investment priorities—requires innovative national, subregional and regional financing mechanisms and appropriate financial instruments as well as financial markets that are more developed, efficient, linked and integrated.
- In line with the recommendations of the Interim Report discussed at the G20 DWG meeting in Cape Town (30 June 2011), leaders of G-20 economies need to ensure more efficient spending and facilitate unlocking the pipeline infrastructure development projects.
 - This will require technical assistance and financial support. MDBs have to play an important role by leveraging financial resources through co-financing from other development partners and private sector. They need to develop best practices for effective designing and implementation of complex and large projects.

Key policy recommendations (2)

- Develop bankable projects and minimize associated risks
- Develop and strengthen new infrastructure financing funds
- Strengthen soft infrastructure together with hard infrastructure to make the latter work effectively
- Integrate, deepen and link the financial markets, especially local currency and regional bond markets:
- Develop innovative financial instruments
- Develop new and strengthen existing national, subregional and regional institutions
- Mobilize private financing through PPP
- Enhance support of MDBs for concessional financing and capacity building of LIC



References

- Asian Development Bank (ADB). 2008b. Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008-2020. Manila: ADB.
- ——.2011. Asia 2050: Realizing the Asian Century. Manila: ADB.
- Asian Development Bank/Asian Development Bank Institute (ADB/ADBI). 2009. Infrastructure for a Seamless Asia. Tokyo: ADBI.
- Alibaba.com. 2008. Factbox-Asian economies get billions in fiscal stimulus. 11 September 2008. Accessed online:
 http://news.alibaba.com/article/detail/economy/100004213-1-factbox-asian-economies-get-billions-fiscal.html, 28 January 2010.
- Association of Southeast Asian Nations (ASEAN). 2010. Master Plan on ASEAN Connectivity. Available at http://www.aseansec.org/documents/MPAC.pdf accessed 7 December 2010.
- Bhattacharyay, B. N. 2008. Demand for Regional Infrastructure in Asia and the Pacific: 2010–2020. Background paper prepared for ADB/ADBI Flagship Study, "Infrastructure for a Seamless Asia". Tokyo: ADBI.
- 2010a. Institutions for Asian Connectivity, No. 220, ADBI Working Paper, June, Tokyo.
- ____. 2010b. Estimating Demand for Infrastructure in Energy, Transport, Telecommunications, Water and Sanitation in Asia and the Pacific: 2010-2020. No. 248, ADBI Working Paper, September, Tokyo.
- . 2011. Financing Infrastructure for Connectivity: Policy Implications for Asia. No. 33, ADBI Policy Brief, July, Tokyo.
- Centennial Group Holdings. 2009. Estimating Infrastructure Demand for Asia and the Pacific 2010-2020. ADBI commissioned report. Tokyo: ADBI.
- Economy Watch (2010). South Korea Economic Stimulus. URL accessed on 23 Aug. 2010 http://www.economywatch.com/economic-stimulus/world-
- Foreign Affairs and International Trade Canada (FAITC). 2009. Worldwide inventory of infrastructure spending plans. 21 January 2009. Accessed online: http://www.international.gc.ca/canadexport/articles/90121h.aspx, 28 January 2010.
- G20. 2010. Seoul Summit Leaders' Declaration, available at:http://www.g20.org/Documents2010/11/seoulsummit_declaration.pdf accessed 4 January 2011.
- International Energy Agency World Energy Outlook (WEO) 2010.
- International Monetary Fund. 2010. International Financial Statistics, 2010. Washington, DC http://www.imfstatistics.org/imf/.
- Jitsuchon, S. 2010. Fiscal Policy Issues in Thailand after the Current Economic Crisis. Paper presented at the Conference on Global Financial and Economic Crisis Fiscal Policy Issues After the Crisis, Asian Development Bank Institute, Tokyo, 19 January 2010.
- Kang, J. 2010. Meeting the Challenges of Financial Crisis—China's Practice: from Developing Countries' Prospective. Paper presented at the Conference on Global Financial and Economic Crisis Fiscal Policy Issues After the Crisis, Asian Development Bank Institute, Tokyo, 19 January 2010.
- Kumar, R., and A. Soumya. 2010. Fiscal Policy Issues for India after the Current Crisis. Paper presented at the Conference on Global Financial and Economic Crisis Fiscal Policy Issues After the Crisis, Asian Development Bank Institute, Tokyo, 19 January 2010.
- Nguyen, N. A., D. N. Nguyen, and T. Nguyen. 2010. Current Global Crisis, Fiscal Stimulus Package and Implication for Viet Nam. Paper presented at the Conference on Global Financial and Economic Crisis Fiscal Policy Issues After the Crisis, Asian Development Bank Institute, Tokyo, 19 January 2010.
- Patunru, A. A., and E. Zetha. 2010. Indonesia's Savior: Fiscal, Monetary, Trade, or Luck? Paper presented at the Conference on Global Financial and Economic Crisis Fiscal Policy Issues After the Crisis, Asian Development Bank Institute, Tokyo, 19 January 2010.
- Tabuchi Hiroko. 2009. Japan Drafts \$154.4 billion Stimulus, New York Times, April 9, 2009, Available at: http://www.nytimes.com/2009/04/09/business/global/09yen.html accessed 23 August, 2010.
- United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP). 2010a. UNESCAP Transport Division Website. Available at: http://www.unescap.org/ttdw/common/TIS/ALTID/Altid.asp accessed 23 August 2010.
- 2010b. Asian Highways Map. UNESCAP Transport Division Website. Available at: http://www.unescap.org/ttdw/common/TIS/AH/maps/ah_map_latest.jpg accessed 27 September 2010.
- 2010c. Trans-Asian Railway Map. UNESCAP Transport Division Website. http://www.unescap.org/ttdw/common/TIS/TAR/images/tarmap_latest.jpg accessed 27 September 2010.
- _____. 2010d. UNESCAP Trans-Asian Railway Website. Available at: http://www.unescap.org/ttdw/common/TIS/TAR/faq.asp accessed 27 September 2010.
- Willoughby, C. 2004. Infrastructure and the Millennium Development Goals. (session on Complementarity of Infrastructure for Achieving the MDGs, Berlin 27 Oct). Available at: http://www.oecd.org/dataoecd/22/31/36567911.pdf accessed 25 August 2011.
- World Bank, 2011, The Private Participation in Infrastructure (PPI) Project Database, Washington, D.C., Available at http://ppi.worldbank.org/.
- World Development Indicators 2009. Washington D.C.: World Bank 2009.
- World Development Indicators 2010. Washington D.C.: World Bank 2010.



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