

Infrastructure for a Seamless Asia

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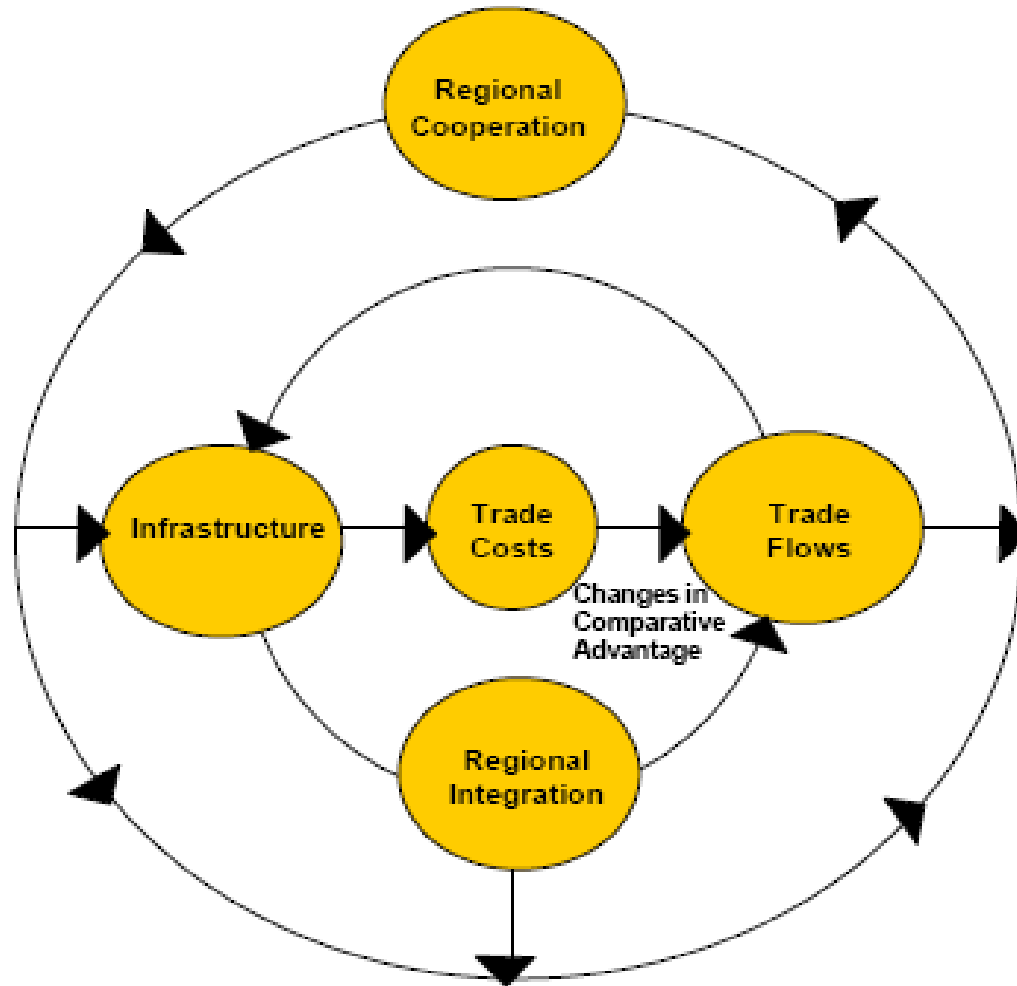
Outline

- The Global Economic Crisis and the Need for Infrastructure
- Infrastructure Connectivity for Integration, Competitiveness, and Growth
- Infrastructure Financing Requirements 2010–2020
- Financing Needs to Meet Infrastructure Demand
- Institutions and Policies to Support Infrastructure Connectivity
- Way Forward to a Seamlessly Integrated Asia

Long-Term Vision: A Seamless Asia

- Creation of a Seamless Asia—an integrated region connected by world-class, environment-friendly infrastructure networks
- In view of Asia's enormous untapped economic potential and the global financial crisis, now is the time to build efficient and seamless connections across Asia and with the rest of the world for a more competitive, prosperous, and integrated region.

Infrastructure, Trade Cost and Comparative Advantage



Need for Infrastructure

The recent global crisis provides **FIVE** reasons for increasing infrastructure investment in Asia:

- Enhances competitiveness, productivity, and economic recovery, and helps to sustain medium to long term growth
- Helps to increase standards of living and reduce poverty by connecting isolated places and people with major economic centers
- Promotes environmental sustainability through proper designing
- Forms an important part of fiscal stimulus packages, especially if the global economy has a double-dip
- Helps to increase regional demand and intraregional trade for rebalancing Asia's growth

Infrastructure Investment in Stimulus Packages of Major Asian Economies

(US\$ billion)

Country	2008 GDP ¹	Total Fiscal Stimulus	Total Stimulus as % of 2008 GDP	Infrastructure Component of Stimulus	Infrastructure Component as % of Total Stimulus	Infrastructure Component as % of 2008 GDP
PRC	4326.19	600	13.9%	275	45.8%	6.36%
India	1217.49	60	4.9%	33.5	55.8%	2.75%
Indonesia	514.39	7.7	1.5%	1.3	16.9%	0.25%
Viet Nam	90.70	8	8.8%	4.8	60.0%	5.29%
Thailand	260.70	46.7	17.9%	30.6	65.5%	11.74%
Malaysia	194.93	2	1.0%	0.17	8.5%	0.09%
Singapore	181.95	14.6	8.0%	3.1	21.2%	1.70%
Taipei, China	385.42 ²	20.4	5.3%	16.6	81.4%	4.31%
Japan	4909.27	130	2.6%	1.5 ³	1.2%	0.03%
Korea	929.12	11	1.2%	7.8	70.9%	0.84%
Australia	1015.22	9.7	1.0%	2.3	23.7%	0.23%

¹ In Current Prices

² Converted from New Taiwan Dollars to US\$ at exchange rate for 28 January 2010 of 1TWD= 0.03117US\$

³ Amount estimated from reports in FAITC (2009) and Sugimoto (2010)

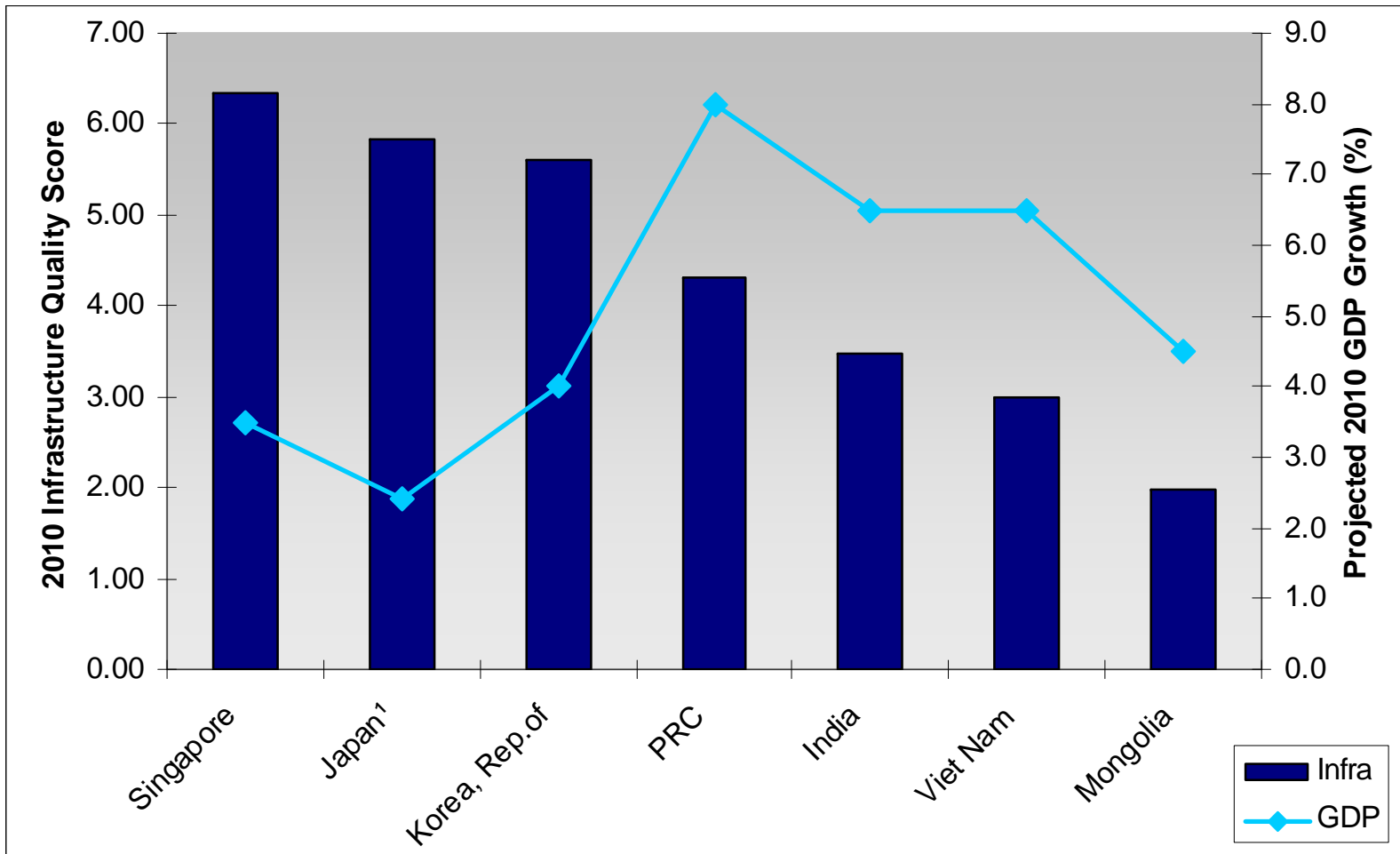
Note: Exchange rates on 28 January 2010 used when needed—<http://www.oanda.com/currency/converter/>

Source: Author's calculations from data in: Kang (2010), Sugimoto (2010), Kumar and Soumya. (2010), Patunru and Zetha (2010), Nguyen, Nguyen, and Nguyen (2010), Jitsuchon (2010), World Bank (2009b), FAITC (2009), Alibaba.com (2008), IFCE (2009), and ADB (2009).

Challenges Facing Asian Connectivity

- Building infrastructure to support the continuing growth and development of Asian economies will **require proper coordination and integration** of existing national, subregional, and regional infrastructure programs
- Ensuring growth is **sustainable and inclusive**
- Addressing the pressing needs for **basic services of over two billion people** for road and rail transportation, clean water, sewage treatment, electricity, health facilities, communications, etc.
- Finding **ways to finance huge infrastructure investment needs**
- Dealing with **negative externalities** of infrastructure development, increased connectivity, and integration

Infrastructure Quality and GDP Growth



Note: Infrastructure Quality Score: 1 = poorly developed and inefficient, 7 = among the best in the world

¹ Japan GDP growth data for 2008

Sources: World Economic Forum (2010), ADB (2009), ASEAN (2009)

Infrastructure Quality and Competitiveness

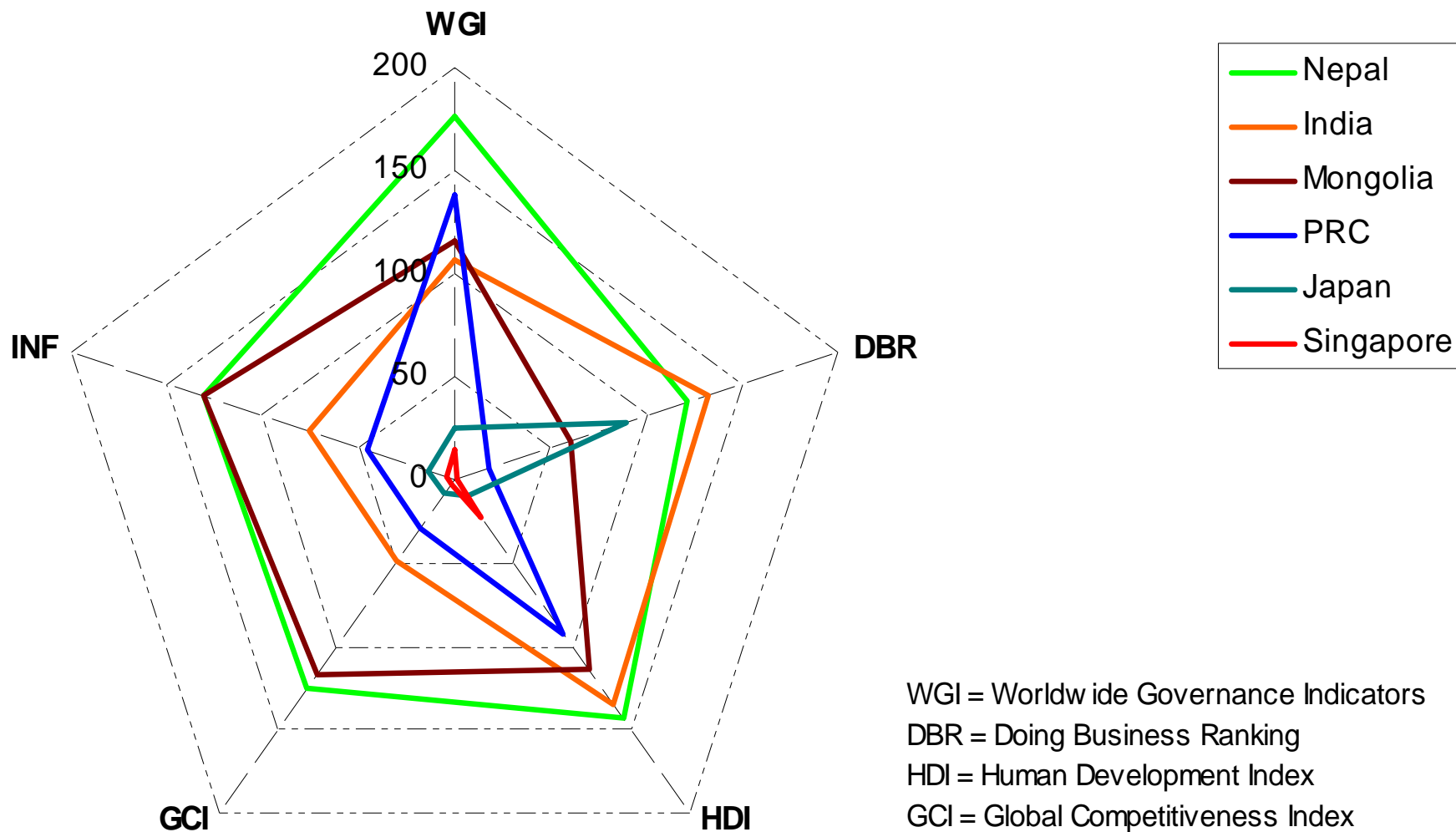
Country	2001-2002			2008-2009				2009-2010			
	GCI	Infrastructure		GCI		Infrastructure		GCI		Infrastructure	
	Rank	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
PRC	47	61	2.9	30	4.7	47	4.22	29	4.74	46	4.31
India	36	66	2.6	50	4.33	72	3.38	49	4.3	76	3.47
Indonesia	55	59	3	55	4.33	86	2.95	54	4.26	84	3.2
Japan	15	15	6	9	5.38	11	5.8	8	5.37	13	5.83
Korea	28	27	4.8	13	5.28	15	5.63	19	5	17	5.6
Malaysia	37	20	5.4	21	5.04	23	5.25	24	4.87	26	5.05
Philippines	54	68	2.4	71	4.09	92	2.86	87	3.9	98	2.91
Singapore	10	2	6.8	5	5.53	4	6.39	3	5.55	4	6.35
Thailand	38	30	4.6	34	4.6	29	4.67	36	4.56	40	4.57
Viet Nam	62	71	2.2	70	4.1	93	2.86	75	4.03	94	3

Note: GCI = Global Competitiveness Index; NA = Not Available

Score: 1= poorly developed and inefficient; 7= among the best in the world

Source: World Economic Forum (2001, 2009, and 2010)

Infrastructure Quality, Business Environment, Governance, and Human Development are Keys to Global Competitiveness



WGI = Worldwide Governance Indicators
 DBR = Doing Business Ranking
 HDI = Human Development Index
 GCI = Global Competitiveness Index
 INF = Global Infrastructure Quality Ranking

The Infrastructure Gap

- Asia's gap in infrastructure quality and investment matters if poverty is to be reduced:
 - Over a billion people are without access to electricity
 - Many countries in the region have a piped water access ratios of less than 20%
 - Access to improved sanitation is as low as 8% in some countries, with only 23% of the rural population having such access in South Asia and 37% in East Asia
 - Road density ranges from 1-1.9 km/km² in the region, compared to 3.3 in Latin America, and road safety remains very low
 - Only 300 out of 1,000 people have access to telephone services
- On average, Asia needs to invest about **US\$750 billion per year** in infrastructure (both national and regional) during 2010-2020 in the transport, communications, and energy sectors [ADB-ADBI, 2009]
- **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 quite low.** Prior to the 1997 crisis it was 20%, though some of that was due to excessive imbalances in risk-sharing between public and private sectors.

Financing Needs for Asia's Infrastructure

Asia's total Infrastructure Investment Needs by Sector, 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

Investment Need for Regional Pipeline Projects

Region/ Subregion	Transport Projects		Energy Projects		Total	
	Cost (US\$ million)	No.	Cost (US\$ million)	No.	Cost (US\$ 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 ¹	51,000	765	–	–	51,000	765
East/Southeast-Central-South Asia²	–	–	22,975	5	22,975	5
Southeast Asia³	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	82,396	88	287,038	1,077

Note: (–) = data not available

¹ Dry and sea ports, container depots (UNESCAP, 2007: pp.79-82);

² Projects involving countries belonging to more than one subregion

³ Some projects involved countries in East Asia, such as PRC and Mongolia

Source: ADB/ADB (2009)

Meeting the Financing Needs

- The region's vast domestic savings and international reserve as the main source of financing for Asia's infrastructure
- Strengthen national and regional local currency bond markets — notably the Chiang Mai Initiative (CMI), the ASEAN+3 Bond Market Initiative (ABMI), and the Asian Bond Funds (ABF)
- Identify and prepare “bankable” projects to encourage private financing involving PPPs

Productively Investing Savings and Reserves

Country	Gross Domestic Saving (% of GDP)				International Reserves (in billion SDR)			
	2005	2006	2007	2008	2005	2006	2007	2008
Australia	23.9	25.5	26.3	26.8	294	356	158	200
PRC	49.6	52.4	53.0	49.2	5755	7109	9691	12662
India	32.0	33.3	35.2	32.9	927	1139	1694	1610
Indonesia	29.2	30.8	29.0	28.9	233	274	349	323
Japan	25.0	25.2	NA	NA	5846	5856	6038	6562
Korea	32.4	31.0	30.9	30.2	1472	1588	1659	1306
Malaysia	42.8	43.2	42.2	NA	489	546	640	592
Philippines	10.4	13.8	15.6	13.4	113	135	193	217
Singapore	48.8	50.3	52.4	50.0	813	906	1031	1131
Thailand	31.7	33.3	35.8	NA	356	435	540	706
Vietnam	31.4	31.7	28.2	NA	NA	NA	NA	NA
United States	13.7	13.8	NA	NA	470	456	468	524
High income: OECD*	19.4	19.7	NA	NA	14930	15270	15640	16484

*For International Reserves, data is presented for the IMF grouping "Advanced Economies", which may or may not correspond exactly to the World Bank grounding "High income: OECD"

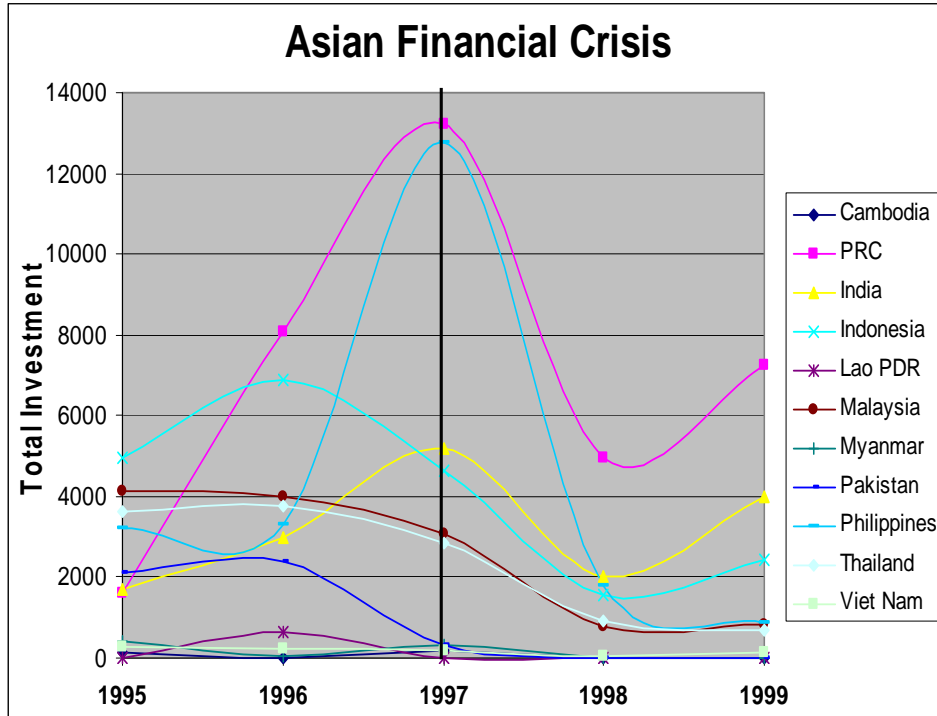
15 Note: NA = Not Available

Source: World Bank (2009b), IMF (2009)

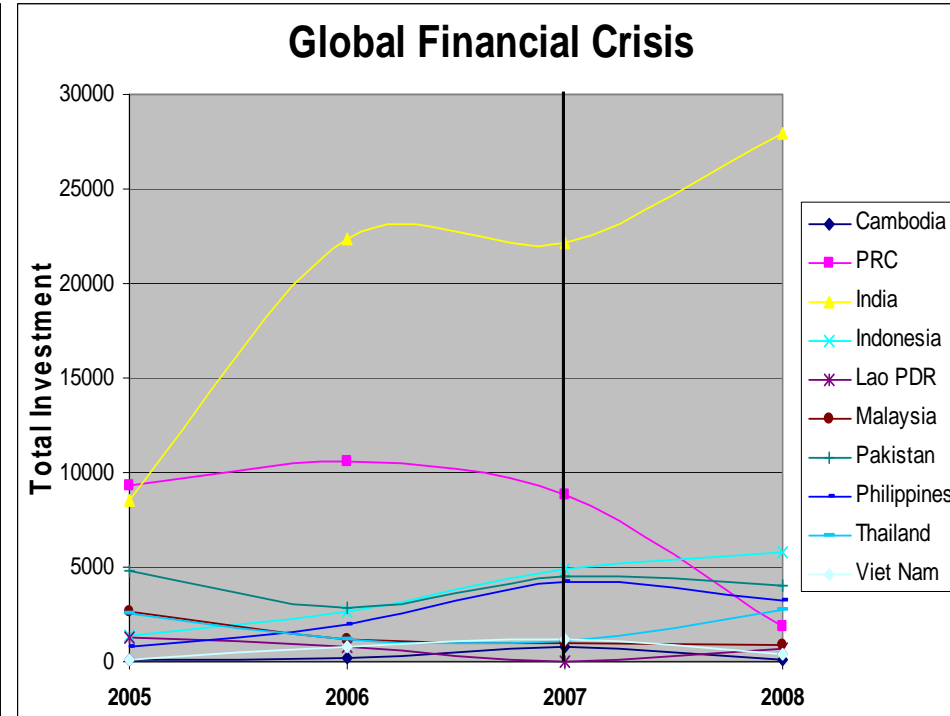
Need to Encourage Counter-cyclical Private Sector Investment

Total Investment in Infrastructure with Private Participation During Crisis Periods*

Asian Financial Crisis



Global Financial Crisis



*In Current US\$ Millions

Note: Total investment here includes investment in transport, communications, energy, and water and sewage infrastructure

Source: World Bank and PPIAF, PPI Project Database (<http://ppi.worldbank.org>) Accessed: 02/03/2010

Benefits of Infrastructure Investment

- Making the required investment in national and regional infrastructure (US\$ 8 trillion) would produce real income gains of about US\$13 trillion for developing Asia during 2010-2020 and beyond
- Infrastructure investment and development is a key instrument to enhance integration, competitiveness, productivity, sustain economic growth, improve social conditions, and promote peace and prosperity
- Accelerate regional cooperation and integration
- Stimulate domestic demand and alleviate further impact of crisis
- Regional transport and energy cooperation (e.g. cross-border railways and renewable energy and hydroelectric grids) can mitigate impacts of transport and energy investments on environmental degradation and climate change

¹⁷Source: ADB/ADB Flagship Study “Infrastructure for a Seamless Asia” (2009)

Potential Gains in World Income from Asian Integration

FTA Scenarios (includes goods, services, trade cost via infrastructure and trade facilitation)	Change in world income relative to 2017 baseline: GTAP Model (US\$ billion in constant 2001 prices)
ASEAN+China	82
ASEAN+3	214
ASEAN+3+India	251
ASEAN+3+South Asia	261

Note: Covers all world trade and production
Source: Francois and Wignaraja (2008)

Benefits of Integration Between East Asia and South Asia

- Expanding Asian integration driven by PRC-India Trade has made Asia more resilient after the financial global crisis
- Asian integration benefits insiders while outsiders lose little
- East Asia's economic dynamism and high growth and FDI can contribute to South Asia's prosperity
- Deeper integration between East Asia and South Asia offers a large income gains to regional incomes as well as to the world
 - Create large market demands and economic potential for all Asian economies
- A consolidated FTA for ASEAN+3+South Asia will bring income benefits of US\$261 billion
 - Much larger than ASEAN +3 FTA

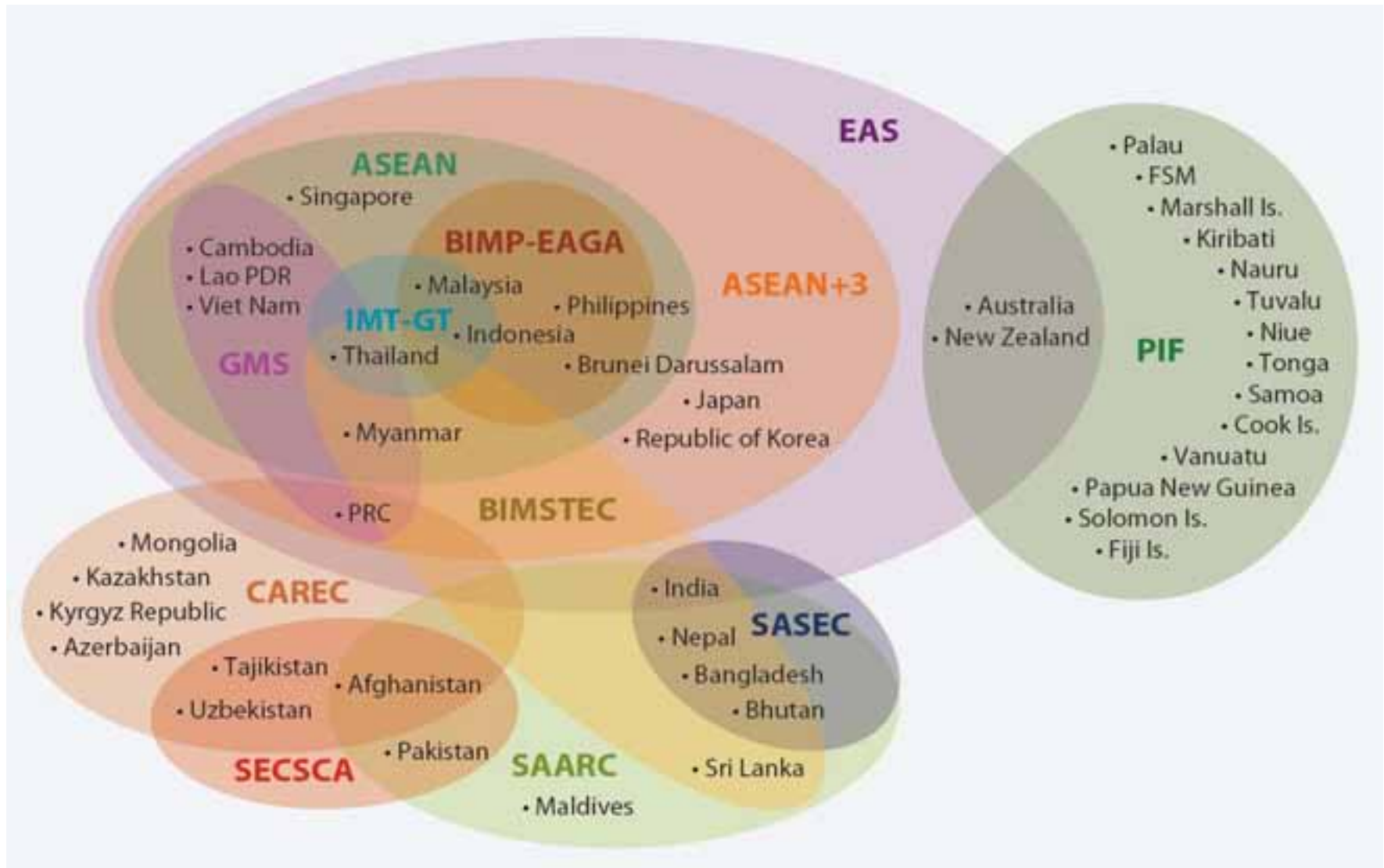
Institutions, Policies, Governance, and Infrastructure Development

- Institutional governance is essential for the effective development of national and regional infrastructure connectivity in Asia
 - Accountability, Participation, Predictability, Transparency
- Recent empirical studies show good governance in institutions positively influences the regional infrastructure development, and it is thus crucial for regional infrastructure development in Asia and elsewhere.
- Countries (and regions) with higher income, stronger institutions, good governance, and more open economies are likely to have higher levels of regional infrastructure.
- Improved governance and capacity of national and regional institutions will reduce risks and transaction costs for regional infrastructure projects, making such projects more bankable
- Connectivity depends both on hard and soft infrastructure
 - Soft infrastructure: facilitating infrastructure including appropriate policies, regulations, systems, procedures, and institutions necessary to make hard infrastructure work properly

Characteristics of Existing Asian Institutions for Infrastructure Integration

- 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 Asian Institutions in Connectivity and Integration




Name	Major Focus	Region of Operation	Functions					
			Integration	Security	Trade	Finance	Infrastructure	Socio-economic
ESCAP	Transport, Logistics	Asia-Pacific	✓		✓		✓	✓
AH	Transport/ Highway	Asia-Pacific	✓		✓		✓	✓
TAR	Transport/ Railway	Asia-Pacific	✓		✓		✓	✓
WB		World			✓	✓	✓	✓
ADB	Infrastructure, environment, regional cooperation and integration, financial sector development and education	Asia-Pacific	✓		✓	✓	✓	✓
JBIC-JICA	Energy and natural resources, environment and climate change, international business development, international finance and knowledge assistance	World	✓		✓	✓	✓	✓
EIB	Cohesion and convergence, SMEs, Environmental sustainability, Innovation, TEN and energy security	World	✓		✓	✓	✓	✓
APEC	Free trade and investment	Asia-Pacific	✓	✓	✓		✓	✓
GTI	Economic integration, trade, infrastructure	East Asia	✓		✓		✓	✓
ASEAN	Economic integration; Trade and logistics, infrastructure	Southeast Asia	✓	✓	✓		✓	✓
GMS	Infrastructure, trade and logistics	Southeast Asia	✓		✓		✓	✓
MRC	Economic integration, trade, infrastructure	Southeast Asia	✓	✓			✓	✓
IMT-GT	Economic integration, trade, infrastructure	Southeast Asia	✓		✓		✓	✓
BIMP-EAGA	Economic integration, trade, infrastructure	Southeast Asia	✓		✓		✓	✓
BIMSTEC	Economic integration, trade, infrastructure	Southeast and South Asia	✓		✓		✓	✓
CAREC	Economic integration, trade, infrastructure	Central Asia	✓	✓			✓	✓
SAARC	Economic integration, trade, infrastructure	South Asia	✓		✓		✓	✓
SASEC	Economic integration, trade, infrastructure	South and Central Asia	✓		✓		✓	✓
SECSCA	Economic integration, trade, infrastructure	South and Central Asia	✓				✓	✓
PIF	Economic integration, trade, infrastructure	Pacific	✓	✓	✓		✓	✓

Source: ADB/ADB (2009), Bhattacharyay and De (2009), Linn and Pidufala (2008), and compilation from subregional programs

Greater Mekong Subregion Program



Connectivity in 2015

-  Roads
-  Telecommunications
-  Power Transmission Line

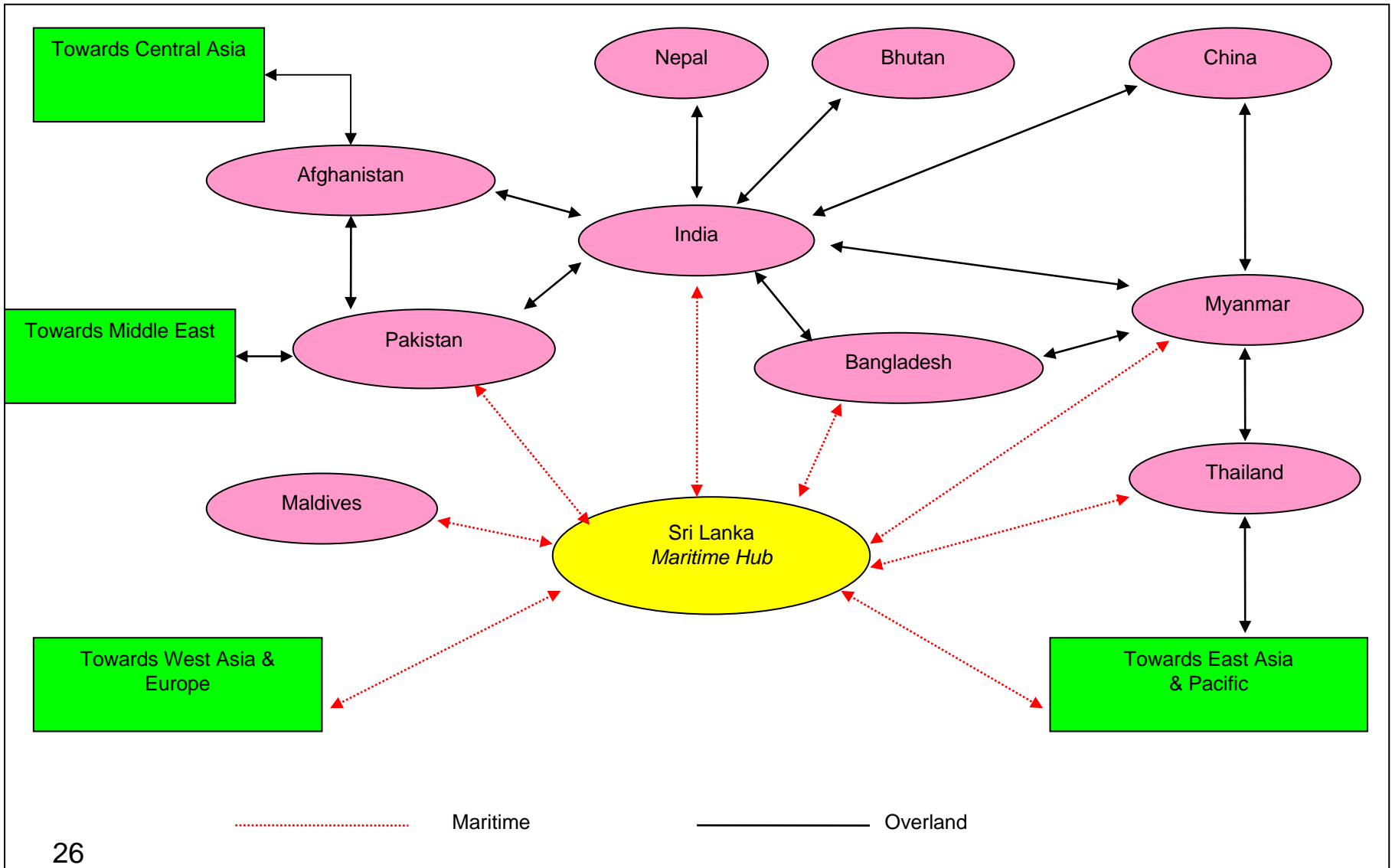
APIBM Corridor: Southern Silk Route

Starting Point	Country	Ending Point	Country	Distance (km)	Road condition	Max. Axle Load (ton)
Kabul	Afghanistan	Torkham	Afghanistan	224	Good	31
Afghanistan – Pakistan Border (Torkham Border)						
Torkham	Pakistan	Wahgah	Pakistan	607	Good	31
Pakistan – India Border (Wahgah – Attari Border)						
Attari	India	Petrapole	India	2042	Good	24
India – Bangladesh Border (Petrapole – Benapole Border)						
Benapole	Bangladesh	Dhaka	Bangladesh	168	Good	19
Bangladesh – India (NER) Border (Tamabil – Dawki Border)						
Tamabil	Bangladesh	Dawki	India	325	Good	19
India – Myanmar Border (Moreh – Tamu Border)						
Moreh	India	Tamu	Myanmar	606	Good	24
Tamu	Myanmar	Yangon	Myanmar	1300	Partly good	21
Myanmar – China [to Kunming]						
Myanmar – Thailand [part of BIMSTEC Trilateral Highway, to Bangkok]						

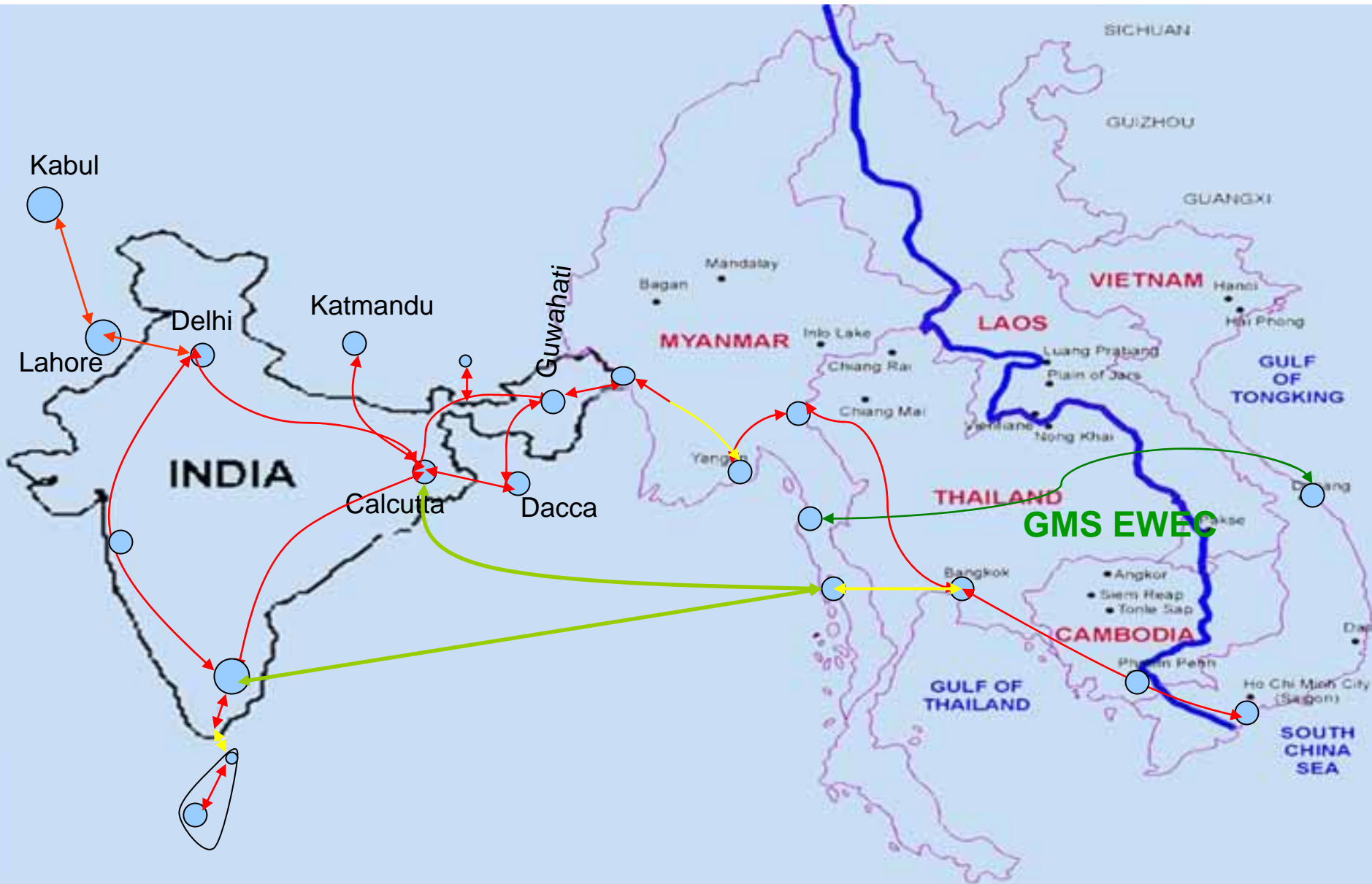
*Data sourced from UNESCAP

Total distance (Kabul to Yangon): 5272 km; No of border crossings (Kabul to Yangon): 5; ²⁵Transportation time (Kabul to Yangon): 12 days.

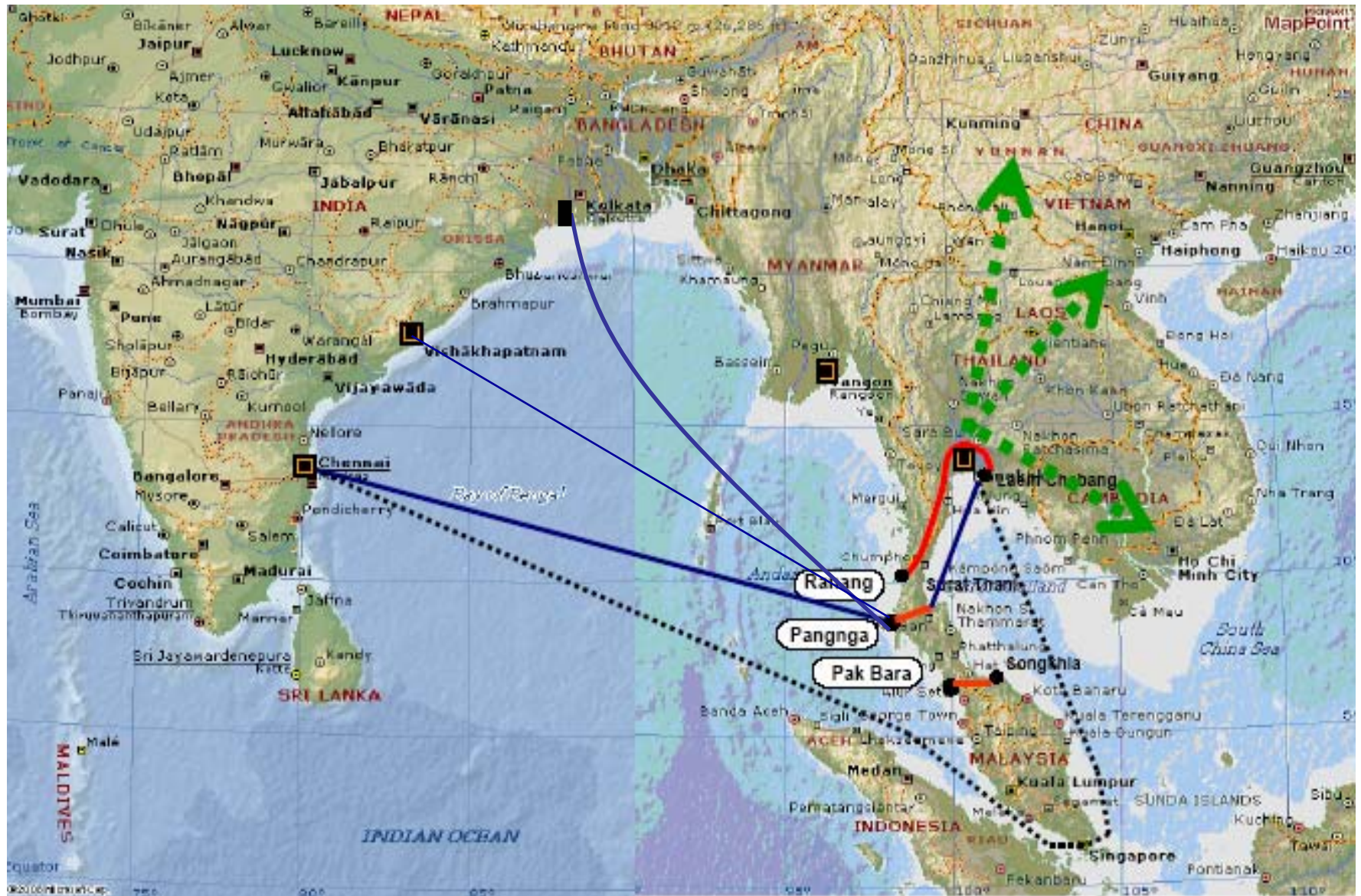
APIBM corridor: 'Win-win' gain for all



Subregional inter-linkages priority: SAARC – BIMSTEC – GMS/ASEAN



Linking South Asia with East Asia: New transportation route (1)



Linking South Asia with East Asia: New transportation route (2)



EU Institutions for Regional Connectivity and Integration

- EU is the world's largest and most developed regional institution
 - 27 member nations
 - Comprehensive agenda, strong supranational institutions, functioning mechanism for enforcing agreements
- European Commission (EC) is the EU institutional system's driving force
 - Proposes legislation, administers and implements policies, enforces EC law, negotiates international agreements (primarily trade and cooperation)
 - Helps member countries develop Trans-European Networks (TENs), set up PPPs, and access support and financing from EU funds and EIB

Latin American Institutions for Regional Connectivity and Integration

- Latin American integration driven by 3 main subregional initiatives:
 1. Integration of Regional South American Infrastructure (IIRSA)
 - Informal institution with 12 member countries
 - Objective to build better regional connections
 2. Plan Puebla Panama (PLPP)
 - Formal institutions with 9 member countries
 - Objective to create regional infrastructure to develop the corridor from Southern Mexico to Panama
 3. Andean Community
 - Formal institution with 4 member countries
 - Objective to develop regional infrastructure

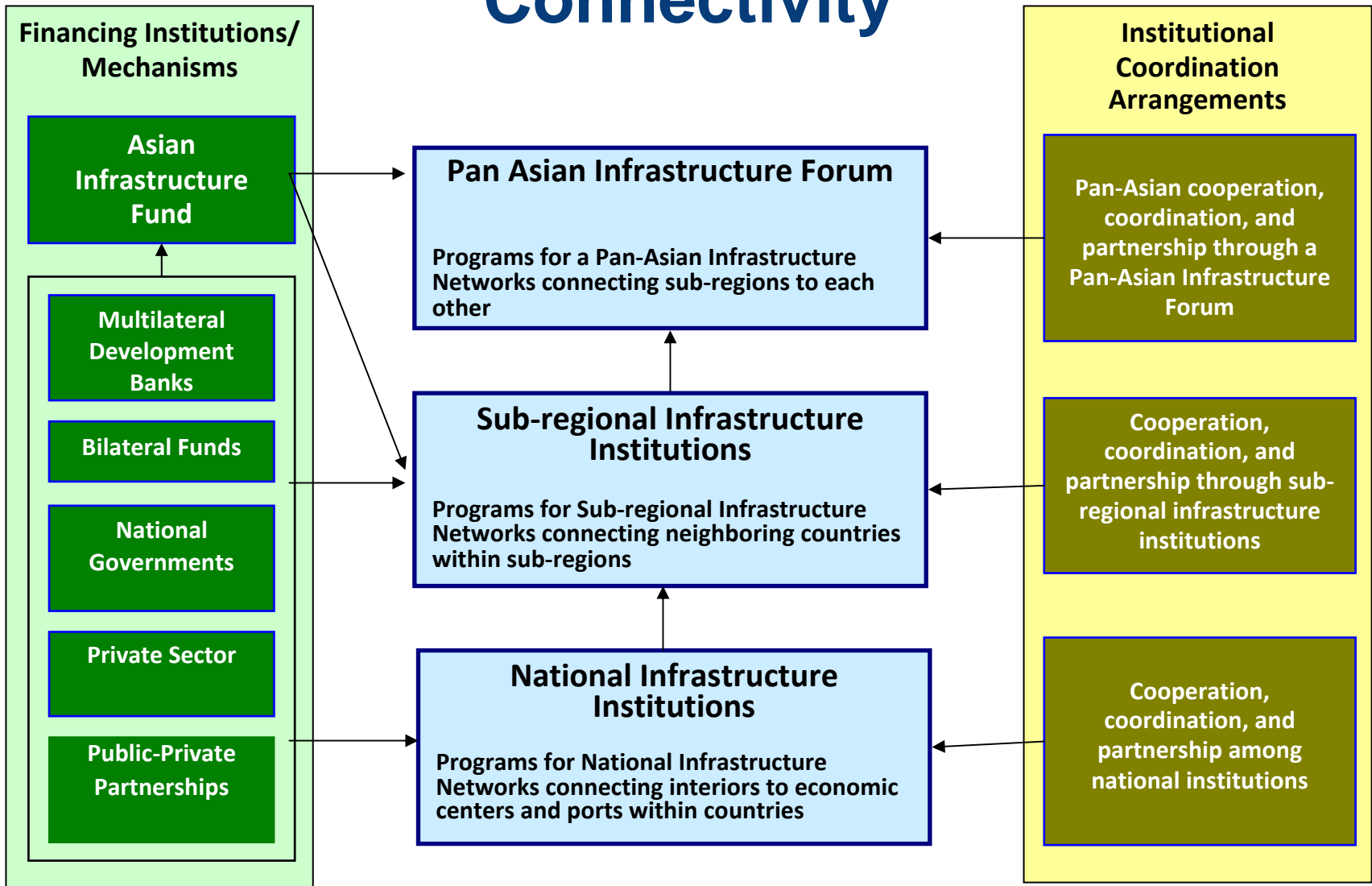
EU and Latin American Lessons for Asia

- Creating a framework for regional integration and cooperation often requires third party honest broker
 - National governments and good governance of vital importance
- Success requires tripartite and multilateral initiatives
- A forum for dialogue and cooperation is key
- Prioritize a small number of regional projects to build momentum
- Attracting funding from multilateral institutions is important
- Assisting less developed countries to build their supply and institutional capacities is key

Institutional Framework for Pan-Asian Connectivity and Seamless Integration

- 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
- A “Pan-Asian Infrastructure Forum (PAIF)” could be established to help coordinate and integrate existing subregional initiatives toward a seamless Asia
- An “Asian Infrastructure Fund (AIF)” could be created to mobilize international funds (public and private) and help prioritize, prepare, and finance “bankable” regional connectivity projects

Institutional Framework for Pan-Asian Connectivity



Recap: Key Messages

- 1) During 2010–2020, Asia needs to invest about US\$8 trillion in national infrastructure and US\$290 billion in specific regional infrastructure projects—an overall average infrastructure investment of about \$750 billion per year
- 2) The required infrastructure investment would produce substantial real income gains of about US\$13 trillion for developing Asia during the same period and beyond
- 3) A “Pan-Asian Infrastructure Forum (PAIF)” should be established to help coordinate and integrate existing subregional infrastructure initiatives toward the Seamless Asia vision
- 4) An “Asian Infrastructure Fund (AIF)” is needed to mobilize international funds (public and private) and help prioritize, prepare, and finance “bankable” regional infrastructure projects.

Comprehensive Transport Action Plan

- **A Comprehensive Transport Action Plan for entire Asia:**
 - Integrate national connectivity with regional connectivity, multimodal transportation
 - Transit MUST [no multiple handling at borders]
 - Remove the barriers at borders – visible and invisible
 - Improve regional air connectivity, touching capital cities of Asia
 - Negotiate MVA, Customs cooperation, etc.
 - More engagement of private sector in cross-border transport projects
 - An exclusive Asian fund for capacity building of LDCs and landlocked countries in cross-border transportation
- **Keep expanding and strengthening Asia's overland linkages through regional/subregional initiatives**
 - GMS corridors
 - CAREC highways
 - BIMSTEC highways
 - Other regional corridors [e.g MIEC]

Project Coordination

- Three strategies:
 - Asian level planning – UNESCAP, ERIA, etc.
 - Regional / subregional level planning & implementations: ADB [e.g. GMS]
 - National level planning & implementations: Individual countries, ADB, a.o
- UNESCAP: ALTID [AH + TAR]

The Way Forward

- Strengthen existing institutions
- Establish new Pan-Asia institutions for enhanced:
 - Trade Integration
 - Establish a Comprehensive Economic Partnership in East Asia through the ASEAN+6 framework
 - Infrastructure Connectivity
 - Establish AIF and PAIF for a seamless connectivity
 - Financial Integration
 - Need for creating new institutions- AFSF, and Asian Surveillance Unit in response to global financial crisis
- Asian economies, together with international and regional development partners (e.g. ADB, WB, and UNESCAP, ERIA), bilateral organizations (e.g. from Japan, Korea, Singapore, PRC and India) can work together to achieve a Seamless Asia