Training Workshop for Journalists in Developing Asia

The Infrastructure and Regional Cooperation and Integration in Asia

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Major roles of infrastructure

- Promote Asia's rapid growth & make it more sustainable and inclusive -- reduced development gap, shared benefits, particularly for landlocked, low income and small countries as well as for poorer groups & communities in remote areas
- Facilitate regional economic cooperation and integration through the "Seamless Asia" initiative (physical connectivity)
- Its major roles in socioeconomic development:
  i. Basic infra promotes economic exchanges among areas and sectors of a country, as well as within the region & the outside world;
  ii. Improving environmental, health, education, and other social conditions by providing basic needs and utilities (roads, water, sanitation, hospitals, clinics, schools, etc.) -- part of UN's Millennium Development Goals

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iii. Greater regional integration through enhanced physical connectivity supports trade and investment (including FDI) expansion

iv. Better logistics resulting speedier movement of goods and services and in reduced trade costs within and across countries

v. Cross-border infra providing access to a larger regional market and global market -- countries can join regional production network and supply chains, particularly important for landlocked economies

vi. Cross-border infra helping regional economies to share scarce resources (energy, capital, and services)

vii. Facilitate the software side of infra through harmonized & efficient cross-border rules/regulations, systems/procedures & institutions/policies

viii. Regional cooperation in supporting cost-effective financing of projects & can take financial roles that individual countries cannot

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Quantity of Infrastructure

EAP lagged ECA & LCR (except for Road)-SA lower than all regions even AFR in sanitation & Tele density

Comparative indicators of infra across developing regions, 2005

Region	AFR	**EAP**	ECA	LCR	MNA	**SAR**
Electricity (% of pop with access to network)	24	**88**	99	89	92	**43**
Water (% of pop with access to improved sources)	58	**78**	91	89	88	**84**
Sanitation (% of pop with access to improved san.)	36	**49**	82	74	75	**35**
Roads (% of rural pop living within 2 km of an all-season road)	34	**95**	77	54	51	**65**
Tele density (fixed line & mobile subscribers per 1,000 people)	62	**357**	438	416	237	**61**

Source: World Bank (2005). AFR: sub-Saharan Africa, EAP: East Asia and Pacific; ECA: Eastern Europe and Central Asia; LCR: Latin America and Caribbean; MNA: Middle East and North Africa; SAR: South Asia.

Infrastructure Index Ranks of Selected Countries

(Composite index of the availability of transport, energy, and telecom infrastructure)

Country	1991		2005	
	Index	Rank	Index	Rank
United States	25.96	1	20.66	1
Japan	16.28	5	18.58	2
Singapore	15.73	6	17.66	3
New Zealand	12.92	13	14.11	14
Korea	7.78	26	13.68	15
Australia	14.92	7	13.67	16
Malaysia	5.10	37	9.21	29
Brunei	7.76	27	7.34	36
China	3.51	49	6.33	39
Thailand	4.17	43	5.89	42
India	3.48	50	4.49	51
Sri Lanka	2.57	62	4.35	53
Kazakhstan	4.24	41	3.68	58

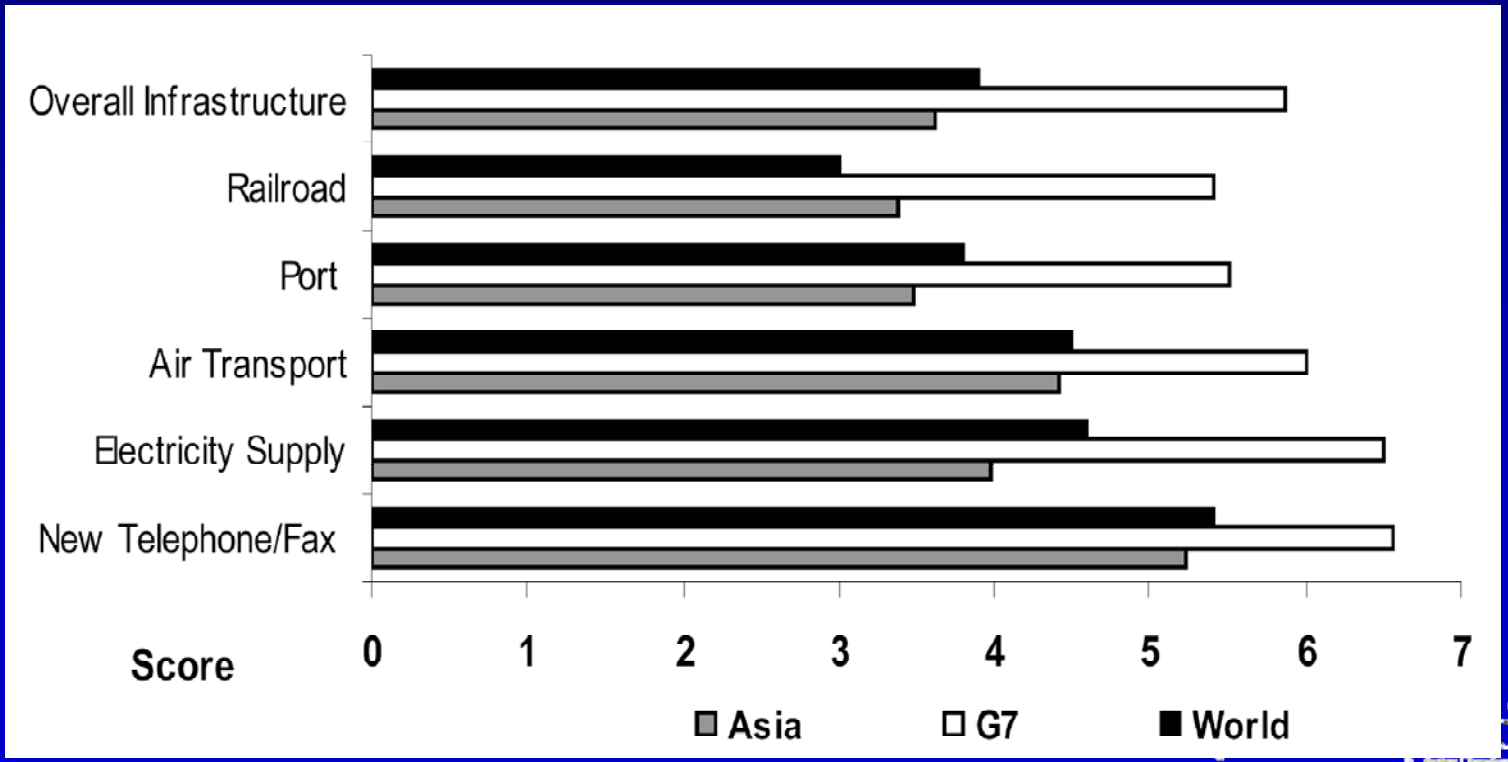
Most SA & CA countries failed to improve overall infra level; Only 7 countries or 35% of the Asian developing countries have made progress in infra development

Country	1991		2005	
	Index	Rank	Index	Rank
Vietnam	0.91	92	3.27	61
Indonesia	2.23	69	3.21	62
Philippines	1.53	76	2.95	64
Kyrgyz	3.28	51	2.95	64
Pakistan	2.39	64	2.89	66
Tajikistan	3.10	53	2.73	69
Uzbekistan	2.92	58	2.70	70
Turkmenistan	2.97	56	2.65	71
Bangladesh	1.83	73	2.50	74
Nepal	1.29	81	1.38	86
Lao PDR	0.55	99	0.87	92
Myanmar	0.97	90	0.76	95
Cambodia	0.45	100	0.55	98

Quality of Infrastructure

•The growth of infra in Asia lags behind international standards in terms of quality; Asia has performed poorly compared to world average except for railroad.

Infrastructure Quality in Asia, Industrialized Countries, and the World

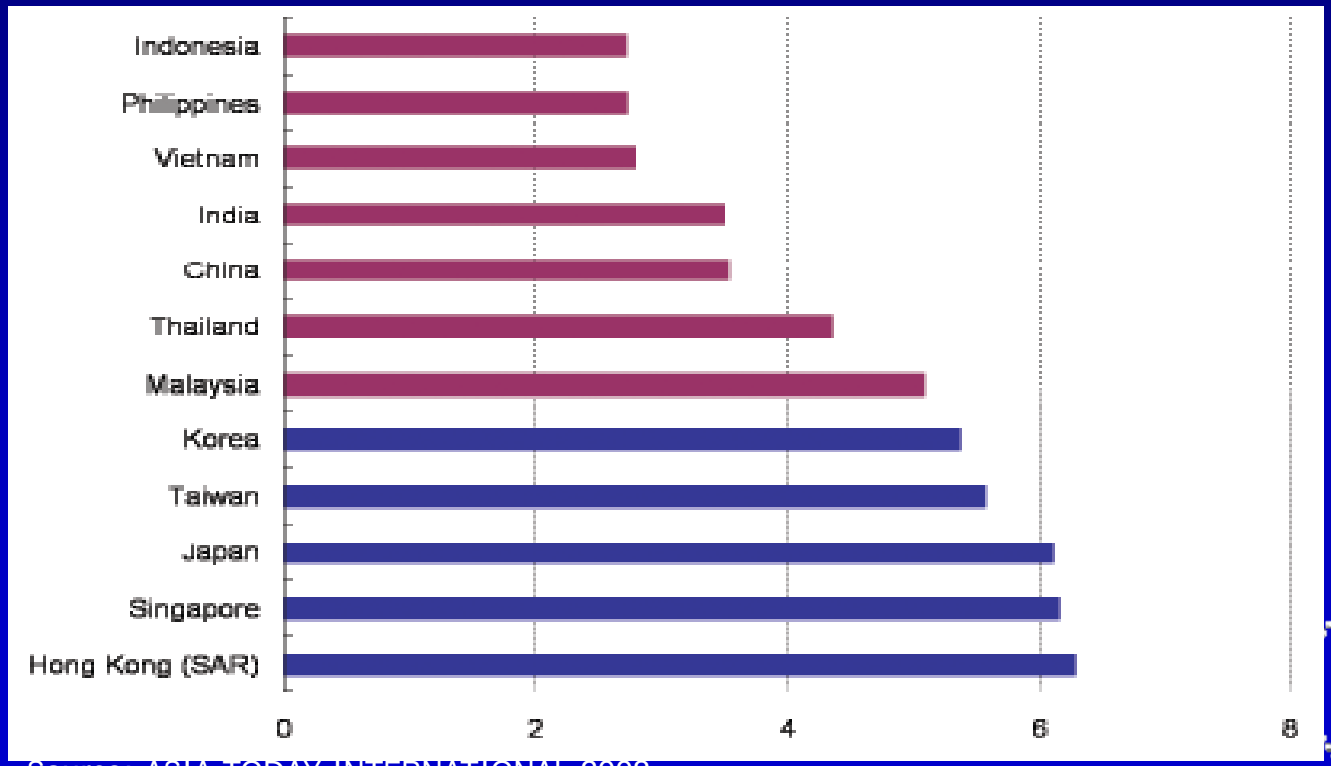


Source: World Economic Forum. 2005. *The Global Competitiveness Report 2005–2006*. New York: Palgrave Macmillan

Quality of Infrastructure

- Infrastructure quality varies widely across Asian economies. Much remains to be done in developing Asia, such as India, China, Indonesia, Viet Nam, and Philippines

Overall infrastructure Quality Ranking in Selected Asian Economies



Source: ASIA TODAY INTERNATIONAL 2008

Notes: Scale 1= poorly developed and inefficient 7= among the best in the world

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Need for Infrastructure

•Lack of adequate infra can hinder potential growth of Asian countries, weaken their international competitiveness, and hamper poverty reduction efforts

• Increasing need to invest in cross-border infra projects due to continuous widening & deepening of regional/global production chain/network resulting in increasing integration of Asian economies

• Huge basic need due to large and increasing population

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Basic Infrastructure – Shocking Figures

- Despite modest to infra growth during the last decades, the region has a huge need for basic infra (ADB, 2007), as shown below:
  - 1.5 billion without access to improved sanitation
  - 638 million with no access to improved drinking water
  - 53.4% of total road network of 5.66 million km paved
  - 930 million (224M in China and East Asia and 706M in South Asia) without access to electricity service (WEO, 2006)
  - 300 out of 1,000 people access to telephone services

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Infrastructure, Trade, and FDI

- Asian infra expanded quite quickly to support rapid trade integration, but still needs superior infrastructure for logistics and trade. Several emerging Asian economies, although with good logistics infrastructure, are coming under increasing pressure from over concentrated economic activities along coastal areas and the consequent need to expand inland.

- Studies have shown that infra quality is an essential consideration for export-oriented FDI inflows; adequate infra is an effective tool for stimulating FDI inflow.

Infrastructure & Economic Growth

• Infrastructure-economic growth linkage is multiple and complex – infra not only affects production/consumption directly but also creates many direct and indirect externalities, involving large flows of expenditure, thereby creating additional employment

•Studies have shown that differential endowments in physical infra were responsible for regional income disparity and account for the variation of growth

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•Poverty as a major challenge facing the region: 1 of every 2 individuals living under the poverty line of US $ 2 per day (WB,2007)

•Appropriate investments in infra can lead to a reinforcing cycle of growth, service provision, poverty reduction.

Cost of Lack of Infrastructure & Growth rate

- Infrastructure is essential for realizing growth potential
  - ➢WB studies concluded that if Africa could achieve infra growth rates comparable with those in East Asia in the 1980s-90s, then it could have had 1.3% higher annual economic growth.
  - ➢Latin America witnessed 1-3% lower long term growth due to the lack of investment in infra (Richards,2008)
  - ➢Lack of adequate infrastructure holds India's economic growth by 1.5% to 2% per year (Mr. P.Chidambaram, Finance Minister of India)

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Regional infrastructure project: A definition

- A regional infrastructure project is defined as a project with activities such as physical construction works and coordinated actions related to policies and procedures, spanning over two or more countries, or a national infrastructure project that has significant cross-border impact (e.g. building a road in a country that connects to a neighboring country).
- A national infrastructure project has significant cross-border impact if it satisfies one or more of the following criteria:
  i. the planning and implementation of a project that involves cooperation and coordination between governments of two or more countries;
  ii. as per the pre-determined plan, a project that produces significant sales of goods or services across regional borders, where significant means at least twenty-percent or more of the total sales;
  iii. a project that involves the construction of specific infrastructure, such as a road, bridge, or a tunnel located on or largely on the territory of a country near the border and is necessary to link the country to the network of a neighboring country or a third

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Why Asia needs Regional Infrastructure (RI)?

- Regional Infrastructure supports physical connectivity in the region via transport, telecoms, and energy networks. They play multiple roles:
  i. To support sharing of scarce/unevenly distributed resources (e.g., finance, energy, and water) among countries
  ii. To satisfy fundamental needs by improving access to basic services (i.e., electricity, water, and roads) for the people, particularly for poorer groups, remote areas, and small and landlocked countries
  iii. To help the poor to increase their incomes and break out of poverty
  iv. To sustain the high growth in Asian countries, particularly fast growing/emerging economies

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iv. Regional Integration is particularly needed for facilitating further regional economic cooperation and integration via enhanced physical connectivity or a "Seamless Asia":

- To promote cross-border trade and investment, and improve competitiveness through reduced trade costs and better trade-related infra
- To help in sharing of benefits of the growth with low-income, small and land-locked countries by connecting them to regional/global production network and supply chains, thus reducing the development gap among the countries
- To remove barriers to economic success for countries and areas within a country where infra is a major constraint for economic opportunities.
- To assist in meeting the fast rising energy demand by transporting/exporting energy from energy-surplus countries to energy-deficient ones in a cost effective manner

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Rationale for regional energy trade and cooperation

- The mismatch between energy demand growth and energy resource endowments
- Important implications to energy security
- Substantial benefits to smaller economies that export energy -- Bhutan's electricity export in FY 2007 expected to constitute nearly 25% of its GDP and 60% of its state revenues (WB, 2008)
- Significant relief from energy constraints to rapid economic growth -- India alone, the volume of unmet electricity in FY 2007 estimated at 54,916 GWh valued at $12.1 b on the basis of the short-term marginal cost in the Indian grid (WB, 2008)
- Also imperative for the environmental protection.

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Primary Energy Consumption in Asia and other regions
(million of toe)

	Actual		Forecast		AAGR (%)		
	1990	2000	2010	2020	2000/ 1990	2010/ 2000	2020/ 2010
China	673	932	1406	2063	3.3	4.2	3.9
% of Asia total	*(40.5)*	*(38.5)*	*(42.2)*	*(45.1)*			
India	187	322	452	684	5.6	3.4	4.2
% of Asia total	*(11.3)*	*(13.3)*	*(13.6)*	*(15.0)*			
Indonesia	52	98	144	209	6.5	3.9	3.8
% of Asia total	*(3.1)*	*(4.1)*	*(4.3)*	*(4.6)*			
Asian total	60	2423	3335	4570	3.9	3.2	3.2
% of World total	*(21.2)*	*(26.8)*	*(30.2)*	*(33.6)*			

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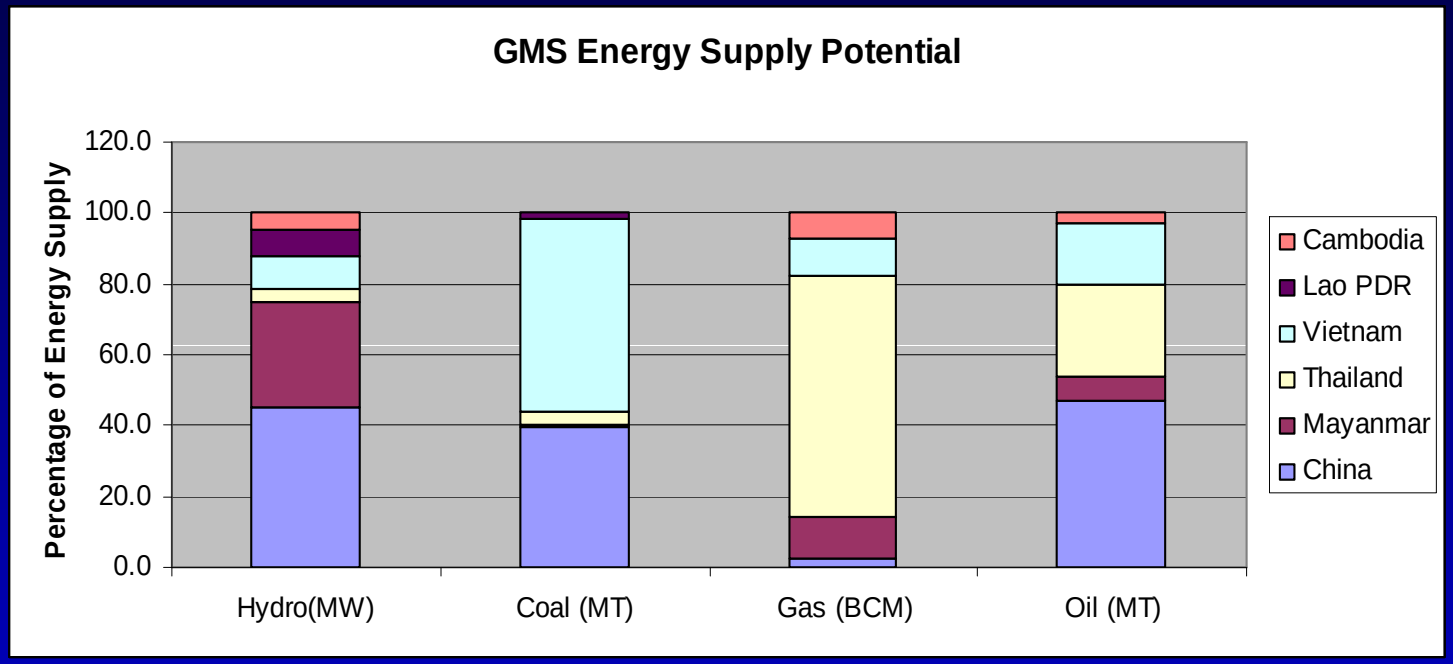
Projection: GMS regional cooperation in energy saves the region $200 billion



Source: ADB (2005)

- Regional energy trade could result in a reduction of total discounted energy costs for the GMS by $200 billion. This provides significant benefits if compared with the current GDP of GMS economies (Lao PDR = $3.4 billion; Thailand = $206 b, in 2006)

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Lack of adequate & reliable energy supply in South Asia is emerging as major constraint to sustaining economic growth.

- India, Pakistan, Bangladesh, Sri Lanka & Afghanistan are witnessing rapid energy-demand growth far exceeding domestic supply
- Bhutan & Nepal have large hydropower resources
- Landlocked economies like Bhutan & Nepal can enhance their GDP through energy exports to their neighbors
  - In 2007, electricity export of Bhutan to India contributed approx. 25% of its GDP and 60% of its state revenues.

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Seamless connectivity through transport in Asia

- Asian Highways (AH) (141,000km, 32 countries): US$26 b is currently invested/committed; around US$18 billion will be required for 121 priority projects to upgrade/improve 26,000 km of below class III
- For Trans Asian Railways (TAR) (81,000km, 28 countries): building 13 missing links of single track (or 6,237 km) will require about US$14.6 b (UNESCAP, 2008).
- Transport corridors, airports and railways upgrading projects
  - GMS- 70 transport projects
  - CAREC- 81 transport project

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Landlocked Countries and Access to Larger Market

- 12 landlocked countries in Asia are disadvantaged – located far from seaports (700-3,700km). Inefficiencies in transport and customs are a stumbling block to global economy integration, thus impairing competitiveness
- E.g., in landlocked countries, 10% reduction in transport costs → 25% increase in trade; on average, transport costs in landlocked countries were 50% higher than coastal countries, trade volumes were 60% lower (Willoughby, 2004)
- Need to upgrade cross-border roads to facilitate trade in goods and tourism, to open up remote and landlocked areas, making those areas easily accessible from neighboring countries
- Many countries have vast remote areas with poor connections to other domestic markets as well as to international sea and air gateways → important to have access to large markets (e.g., China and India), and thus be able to join the production network and supply chains.

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Regional Cooperation for Infrastructure – Overview

- Inter-governmental cooperation necessary to achieve goals set out by subregions -- If governments do not make concerted efforts to undertake such large projects, they are unlikely to be undertaken at all
- To support need for new cross-border infra in Asia through formulating, financing, and implementing bankable regional infra projects & maintaining existing infra
- To harness shared resources & improve efficiency (e.g. energy)
- To facilitate institutional infra through harmonized & efficient cross-border rules/regulations, systems/procedures, institutions/policies
- To facilitate cross-border capital flow by integrating and strengthening regional financial markets.
- To share experiences and learn best practices on institutions/policies, governance, technology, financing, etc.

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Regional/Subregional Initiatives

- The Vision - Seamless and integrated Asia and Pacific
  - Asian Land Transport Infrastructure Development (ALTID-ESCAP)
    - AH (2003): 32 member countries, 141 000km
    - TAR (2005): 28 member countries, 81 000km
  - Trans-Asian Energy System (TAES-ESCAP) -- enhance energy security by optimizing and utilizing power links and having regional power sharing arrangements; be wise to fully utilize and develop cooperative links of different sources of energy (e.g., hydro, coal, oil/gas) within and between Asian countries
  - ADB sub-regional cooperation programs for transport, energy, and trade etc. in GMS, ASEAN, SAARC, CAREC, SASEC, BIMP-EAGA
  - Linking Central Asia and East Asia through Southeast Asia, through ASEAN-India-Central Asia linkage, China-India linkage, and China-India-ASEAN triangle growth in 2030

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Vision: Infra for Seamless and Integrated Asia and Pacific

- Overall-vision: Seamless and Integrated Asia and Pacific
- (i) Achieving well-built, barrier-free infra network for full physical connectivity (roads, railways, airways, and maritime transport lines)
- (ii) Moving toward regionally integrated and seamless; environmentally sustainable, and inclusive economic growth and development in the Asia-Pacific region
- (ii) Achieving energy security and self-sufficiency in energy through effective sharing of resources across countries
- Achieving full potential of cross-border trade and investment, and improve competitiveness of countries in the region—through reduced and competitive trade costs, especially cross-border costs (through improved transport, logistics systems and procedure)
- Building strong and resilient regional financial markets that effectively channel Asian-Pacific savings and resources into productive investment (including infrastructure) throughout the Asia-Pacific region.

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Issues and Challenges

- Infrastructure network
- Trade and Logistics
- Financing infrastructure
- Policies and Institutions

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Broad Issues to be addressed

- Types of infra needed to sustain growth in Asia-Strategic Planning for regions/subregions
- How to formulate/design, finance, implement regional projects effectively
- Costs of building infrastructure and how to raise funds
- Required policies and institutional framework
- How to maximize benefits and minimize socio-economic and environmental costs

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(i) How to manage transnational infra projects efficiently and effectively?

- Does enhanced regional connectivity result in net gains to participating countries, particularly to low income countries and poor people? Is it a win-win situation for low- & high-income countries?
- What lessons and best practices can be drawn from examination of subregional projects in GMS, SASEC, CAREC, and the Pacific?
- How to manage regional projects efficiently/effectively based on lessons learnt from the experiences of EU and Latin America?

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(ii) How to reduce trade costs & enhance competitiveness?

- **Logistics costs as barriers to trade/investment**
  Poor quality of infra and market-unfriendly legal and regulatory frameworks cause high logistics costs in Asia; A major challenge will face Asia in future when manufacturing firms move from locations near ports and coasts to inland due to congestion and other factors (Kuroda, 2006)
- How to provide **efficient logistics systems** as regional countries move progressively into more complex and high-value manufacturing, and fragmented production?

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Need to reduce trade cost through infra development, both hardware & software

Trade Cost by Region

Region	Documents for export (number)	Time for export (days)	Cost to export (US$ per container)
Developing Asia and the Pacific			
East Asia	6	24	867
Central and West	10	56	2087
The Pacific	7	25	1018
South Asia	8	28	1071
Southeast Asia	7	24	759
Other developing	7	28	1325
OECD[1]	5	10	912
World[2]	7	27	1243

Source: World Bank, "Doing Business Database" http://www.doingbusiness.org (10/07/2008)

Note: 1 Czech Republic, Hungary, Mexico, Poland, Slovak Republic, Turkey and Republic of Korea are not included in OECD average as they are grouped into developing countries. Other 23 OECD economies are included.

2 The world aggregates were estimated based available data from 179 countries.

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(iii) How to meet infra investment requirement?

Total investment requirement by Subregion, 2006-2015

(Billion of US$, 2006 prices)

Sub region	New investment		Maintenance		Total	
	US$	% of GDP	US$	% of GDP	US$	% of GDP
Central Asia	166	4.9	96	2.8	262	7.7
East Asia and Pacific	2,020	4.5	1,022	2.3	3,042	6.8
South Asia	882	6.5	482	3.5	1,364	10.0
Total Asia	3,068	5.0	1,600	2.6	4,668	7.6

Source: An internal study report of ADB (2007)

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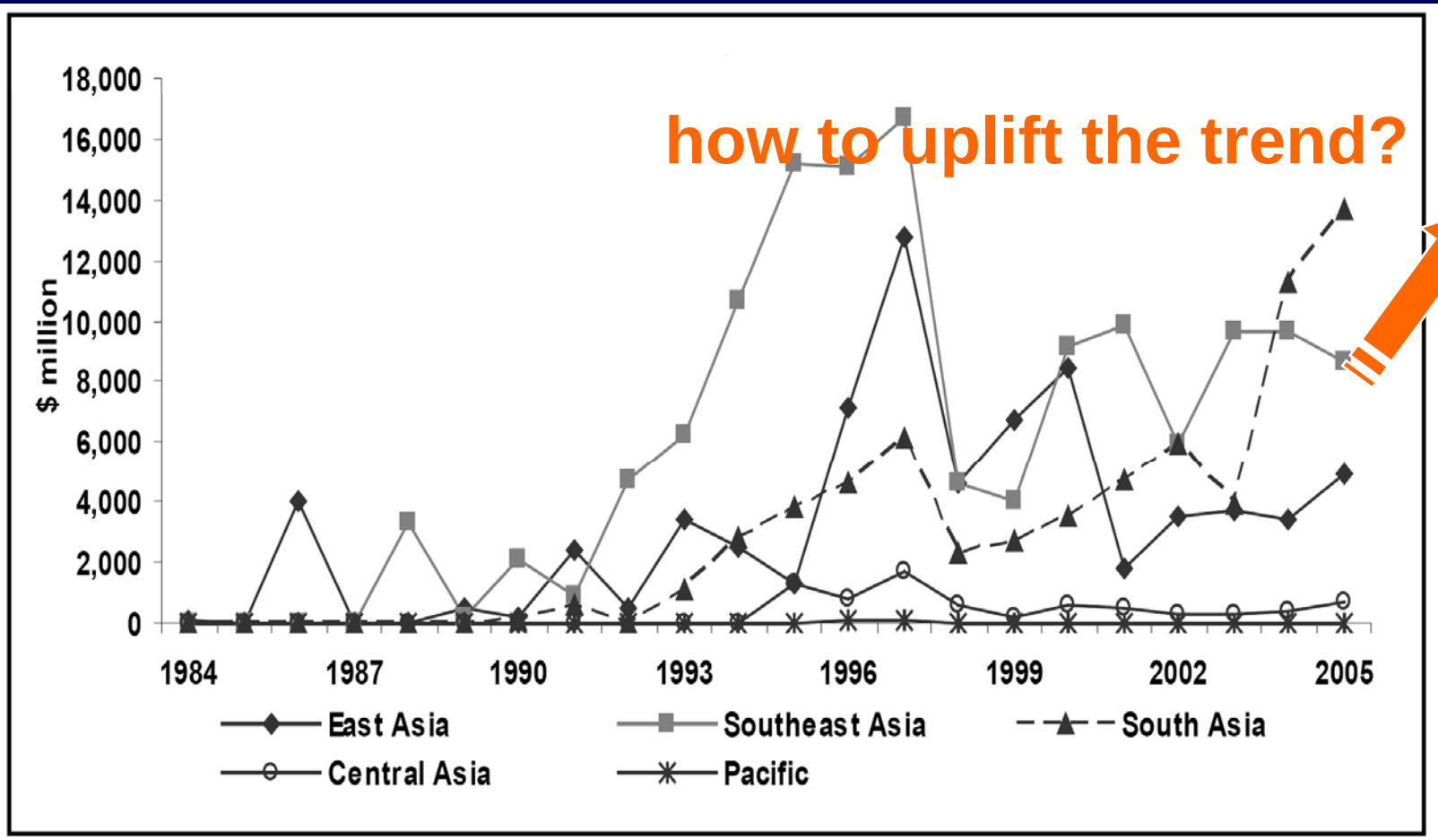
Total investment requirement by Sector, 2006-2015

(Billion of US$, 2006 prices)

Sector	New invest.		Maintenance		Total	
	US$	% of GDP	US$	% of GDP	US$	% of GDP
Transport (incl., roads, airports, seaports)	906	1.46	504	0.83	1410	2.4
Telecoms (incl., landlines and mobiles)	500	0.81	430	0.7	930	1.5
Power	1,485	2.39	437	0.7	1,922	3.1
Water& sanitation	165	0.16	189	0.31	354	0.5
Total	3,056	4.95	1,560	2.58	4,616	7.5

Source: An internal study report of ADB (2007)

Trend of private investment in infra by region during 1984-2005 – Developing Asia



Source: World Bank, Private Participation in Infrastructure Database (http://ppi.worldbank.org/explore/ppi_exploreDetail.aspx?mode=group&panel=sector&results=0).

Investment requirement for identified cross-border infra projects by sector, 2008-2020

Sector	Cost (US$ billion)	No. of projects*
Transport	156.20	272
Energy	122.16	122
Telecoms	0.36	26
Others	32.17	165
Total	310.88	585

Source: Author's estimates based from various data sources
Note: * projects identified with data available

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Challenges to financing Cross-border Infra

- Transnational infra projects are more complex in many dimensions, and often of larger scale
- Acute need for foreign investment for not only capital, but also technology and management skills
- How to bridge financing gap, looking into experiences of Asia and other regions, such as EU and Latin America?
- What roles for Public and Private Sectors to play in this regard? How to enhance PPP in cross-border infra investment? What projects are more suitable for PPP?
- How to build and strengthen Asian financial markets, including bond markets to direct Asian savings to infra?
- What financial instruments are needed for infra projects?
- What is the role of MDBs? Strengthen MDB's Role? Pan-Asian/sub-regional special infra fund?

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How to attract private sector to infra investment?

- Design bankable projects, with full understanding of all political, economic, and financial factors/risks that can influence the success of cross-border projects
- *E.g.,* India required to spend nearly $500 billion on infra for 5 years (2007-2012) to keep its GDP growing at 9% per year. 30 percent must come from the private sector.

Federal Govt. spending ($186 b)	37.16%
State Govt. spending ($164 b)	32.76%
Private sector investment ($150 b)	**30.08%**

Bloomberg, 2008

- What needs to be done to attract the private sector? Indian Government needs to put in place appropriate policies and regulations to encourage private investment.

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How to utilize domestic savings and foreign exchange reserves for Asia's Infra?

Country/ region	2007 (US$ billion)		
	GDP	Saving	Reserves
China	3,239	1,384	1,434
Japan	4,403	1,311	923
East Asia-5	9,173	3,207	3,034
ASEAN-5	1,091	457	409
India	1,085	329	267
ASIA-11	11,349	3,992	3,710
Ex. Japan	*6,946*	*2,681*	*2,787*

Sources: Key Indicators 2007 (www.adb.org/statistics); Asian Development Outlook (2008); IMF International Financial Statistics (IFS), and World Development Bank Indicators CD-ROM (2007)

(iv) How to strengthen Policies and Institutions?

- Weak country capacity in managing Cross-border infra projects
- A mismatch between investor interest and infra investment demand in Asia resulting in the funding gap. Why?
  - ❑ Lack of bankable projects
  - ❑ Regulatory and legal risks - Reforms are still ongoing and implementation is still untested
  - ❑ Limitations of traditional infra financing - Most debt financed through bank loans, but limited in tenure and exposes projects to refinancing risks
  - ❑ Political risk and governance weakness

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Negative externality management

- The '*grow first, clean up later'* paradigm- consequences most acutely felt by the poor
  - Environmental degradation, incl. climate change
  - Negative socioeconomic externalities, incl. resettlement, road accidents, labor migration, human trafficking, and smuggling
- Lack of strong institutions at various levels, incl. regional, national, and provincial levels (esp. important for China, India and Indonesia)
- Lack of effective coordination among various stakeholders due to lack of well-built and harmonized legal and regulatory frameworks

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Strong Institutions needed for planning and coordination of cross-border infra

- Ad hoc institutional and technocratic coordination and negotiations between governments on a project-to-project basis often failed, took long time, significantly raised transaction costs
- Need top-level backing and budget commitment for projects
- Need for smooth coordination between diverse groups of team players
- Regional infra as a public good with high externalities → multilateral institutions have a crucial role to play
  - In EU: financial instruments available to identify and design cross-border projects; the European Investment Bank (EIB) plays a significant role in funding the projects
  - In Asia: can multilateral institutions like ADB play a larger role in developing cross-border infra? Is an AIB or special fund needed?

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Challenges to Policies & Institutions

- What institutions/policies need to be in place to ensure financing need is met in cost-effective manner, and to attract private financing?
- To strengthen regional cooperation for cross-border infra through enhanced policy coordination and effective institutions (capacity of domestic institutions)
- How to strengthen governance, including clear policies and transparent processes, to build investors' confidence
- What institutional structure/policy framework is needed for mitigating negative externalities of infra projects?
- How to smooth movement of goods, services, capital, and people; trade facilitation, harmonization of documentation, and simplification of procedures; harmonization of rules and regulations

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