Infrastructure and Sustainable Development in East Asia & the Pacific

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Outline of Presentation

Part A: Major trends in EAP

Part B: Financing EAP’s Infrastructure Needs
Part A. Major Trends in EAP

Growth with impressive poverty reduction;

But growing inequality;

Environmental pressures;

And a changing governance framework
Strong aggregate growth, supporting impressive poverty reduction

250 million lifted out of poverty in the last 5 years

Average annual growth (%), 1995-2006

Poverty headcount index ($2 / day) %

Source: World Development Indicators

Source: Connecting East Asia: A New Framework for Infrastructure, The World Bank
Urbanization as a new driver for productivity

By 2015, East Asia will be predominantly urban

Urban population (% total population)

Growth in number of cities over one million inhabitants

Source: World Development Indicators; United Nations World Urbanization Prospects

Source: United Nations World Urbanization Prospects
East Asia is becoming a MIC region

GNI per capita (US$) in EAP MICs, 2006

Source: World Development Indicators

Note: Countries are classified by income according to gross national income (GNI) per capita, calculated using the World Bank Atlas method. Middle Income Countries (MICs) are countries for which GNI per capita values fall between US$ 875 and US$ 10,725.
But inequality is high and growing

GINI Coefficients of Select Countries Across Time

Sources: World Development Report, 2006; Ravallion and Chen (2004); World Bank estimates from NBS household data.
Poor provinces in the hinterland, but concentration of the poor along the coast

Source: Poverty Reduction and Economic Management Unit, The World Bank, 2004
Huge environmental pressures

“Business as usual” is not sustainable

• US energy consumption increased by 2,000 mtce in 45 years as GDP quadrupled during 1950-1995

• Under business as usual (GDP growth rate = 7%), China will increase energy consumption by 2,000 mtce in just 14 years

• Coal-based generation to account for 65-70% of total production capacity

• With the most rapid increase in CO2 emissions in the world over next 30 years

Source: East Asia Energy Unit, The World Bank
Urban congestion and car ownership growth to also become unsustainable...

1990-2003

Annual growth 31%

Private Passenger Vehicles (millions)

Source: East Asia Environment Unit, The World Bank; World Bank Staff estimates
Water resources are under pressure

- Demand for water doubled in the last decade
- Deteriorating water quality in aquatic & coastal systems

Population in areas of relative water scarcity (people per km²)

Area faces relative water scarcity if mean annual demand is greater than 40 percent of the mean annual surface and subsurface runoff for the area. Colors indicate the population in each area.

Source: East Asia Environment Unit, The World Bank; World Bank Staff estimates
The governance challenge

A host of new actors are coming to the fore

- Democratization
- Rising civil societies
- Increased complexity in service delivery
- Corruption
- Decentralization

Corruption Perception Index 2007

Source: Transparency International
Note: The CPI score ranges between 10 (highly clean) to 0 (highly corrupt);
Data for Mongolia for year 2004.
Decentralization

Adapting the role of the state to a new reality

- Closer to citizens and potential for greater accountability
- Fragmentation
- The missing middle
- Implementation of integrated vision
- Institutional capacity challenges

Expenditure decentralization – sub-national expenditure (% total national expenditure)

Source: East Asia Decentralizes—Making Local Government Work, The World Bank
New challenges

Globally, East Asia is at the center of the climate change debate

- China 2\textsuperscript{nd} largest source of greenhouse gas emissions (after the US); Indonesia is 3\textsuperscript{rd} if biomass is considered

**Global ranks – highest CO2 Emitters**

**Main sources of CO\textsubscript{2} emissions in EAP, 2000**

Source: WRI, 2007

Note: LULUCF: Land Use, Land Use Change and Forestry; the methodology of estimating emissions from land use is not as widely accepted as from fossil fuels
Several EAP Countries have High and Accelerating Fossil Fuel CO$_2$ Emission Growth

Source: “Growth and CO2 Emissions: How do Different Countries Fare?” WB, 2007
Part B. Financing EAP’s Infrastructure Needs

EAP infrastructure needs large and varied

Multiple sources of infrastructure finance

Need to develop market-based mechanisms to leverage different sources
East Asia’s infrastructure needs are large and increasing

East Asia, estimated infrastructure expenditure, actual and projected
1996 – 2010 ($ billion / year)

* Based on econometric simulations consistent with projected regional growth, and efficiency prices. Due to data limitations, the simulation excludes a number of key infrastructure services, notably ports and airports, and all but major roads

Source: Connecting East Asia: A New Framework for Infrastructure, The World Bank
At the macro level, financing is not a constraint in East Asia

Selected macroeconomic indicators 2007 (US$ billion)

<table>
<thead>
<tr>
<th></th>
<th>Foreign exchange reserves</th>
<th>Current a/c surplus</th>
<th>Gross domestic savings</th>
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<tbody>
<tr>
<td>China</td>
<td>1546</td>
<td>372</td>
<td>1696</td>
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<tr>
<td>Japan</td>
<td>973</td>
<td>210</td>
<td>1103*</td>
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<td>262</td>
<td>6</td>
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<td>Malaysia</td>
<td>102</td>
<td>29</td>
<td>79</td>
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</tbody>
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Numbers for 2006

*Source: World Development Indicators*

Savings and investment (% GDP), 1995-2007

*Source: World Development Indicators*
But, infrastructure needs and investments vary significantly across countries

For most countries public resources + ODA are insufficient to finance infrastructure investments required.
• Potential financing gap of around 5% of GDP by 2010
  – If ODA stays at roughly the same level, and user tariffs and government finance increase with GDP (7% growth)
• Potential for the private sector to fill financing gaps

• 2010 “needs” based on: Sept 2005 Min of Transport MTEF; Financial model used by EVN; Target of 35 telecoms lines per 100 people by 2010; Targets of 85% access to urban water and sanitation and 75% for rural water and sanitation
• “Government” financing includes budget, government bonds & State-Owned Commercial Banks
• 2010 financing requirement based on: Total of sectoral investment needs; ODA grows at 2% p.a. from 2002 level; Government and user payments grow at GDP growth rate (7%); Private sector provides the remainder
Private financing of infrastructure in East Asia

- East Asia’s share in private investments going to developing countries has fallen over time.
- Within East Asia, China dominates private investments both in terms of $ and no. of projects.
Overall, countries must carefully consider ways of effectively combining multiple sources of infrastructure financing ...

- The financial crisis notwithstanding, East Asia’s infrastructure needs are large and increasing

- There are multiple sources of infrastructure finance, all of which will be needed
  - Public Sector. Incl. budget funding, government bonds, State Owned Commercial Banks; but need to create fiscal space, and build implementation capacity
  - International Donors. Traditionally played a small role in most (but not all) of the region
    - New donor roles being highlighted in the context of the crisis, including providing client-responsive analytic and advisory support, and establishing project preparation facilities
    - Scope for additional grant funding in some cases
  - Private Sector. Great potential, but relative progress in East Asia has stalled since 1997 crisis
... and address institutional and governance issues that go beyond the current financial crisis

- There is a need to leverage private sector financing for infrastructure. It is critical to establish market-oriented institutional frameworks
  - strong sector policies
  - greater capacity in government
  - well-designed PPP projects
- Improve infrastructure governance
- Parallel “greening” of infrastructure – climate change, mitigation and adaptation
The Three Parts of Infrastructure Governance

### National Policy Framework
- Macroeconomic conditions
- Fiscal space
- Institutional framework
- Financing framework
- Legal basis of regulatory arrangements

### Enabling Environment at Sector level
- Sector-specific laws and decrees
- Funding through taxpayers vs. by users?
- Bundling vs. unbundling of networks
- Pricing and subsidy rules
- Policies toward technology and industries supporting specific infrastructure services

**Management of Service Provision requires focusing on process issues**

- Is there coordination within the sector, with key economic ministries, and among different tiers of government?
- Are there well-established methods for ensuring transparency and participation of stakeholders?
- Are service providers accountable to users and shareholders?