

# **Assessing Socioeconomic Impacts of Transport Infrastructure Projects in the Greater Mekong Subregion**

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# Presentation Outline

- The Greater Mekong Subregion
- The Economic Corridors in the Region
- Projects undertaken in transport and trade
- Evaluating impacts
- Outcomes

# Contributions

- Quantifying benefits of major infrastructure projects for the GMS.
- Specific measurements of poverty reduction as a result of projects by country and income source.
- GTAP database expansion to include LaoPDR and Cambodia.

## GREATER MEKONG SUBREGION



**Myanmar**  
 Land area: 677 thou sq km  
 Population: 56.2 M  
 GDP per capita: US\$231

**Thailand**  
 Land area: 513 thou sq km  
 Population: 65.2M  
 GDP per capita: US\$3,162

**Cambodia**  
 Land area: 181 thou sq km  
 Population: 14.2 M  
 GDP per capita: US\$513

**People's Republic of China**  
 Land area: 633 thou sq km  
 Population: 94.1 M  
 GDP per capita: US\$1,173  
 (figures for Yunnan and Guangxi only)

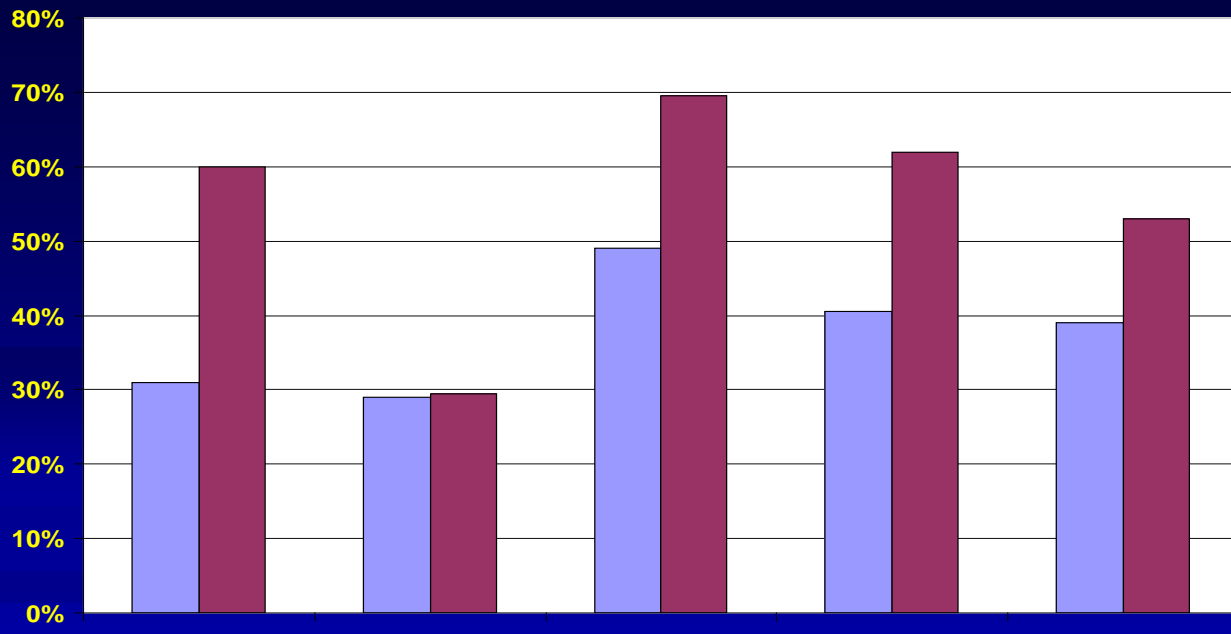
**Viet Nam**  
 Land area: 332 thou sq km  
 Population: 84.2 M  
 GDP per capita: US\$723

**Lao PDR**  
 Land area: 237 thou sq km  
 Population: 5.7 M  
 GDP per capita: US\$599

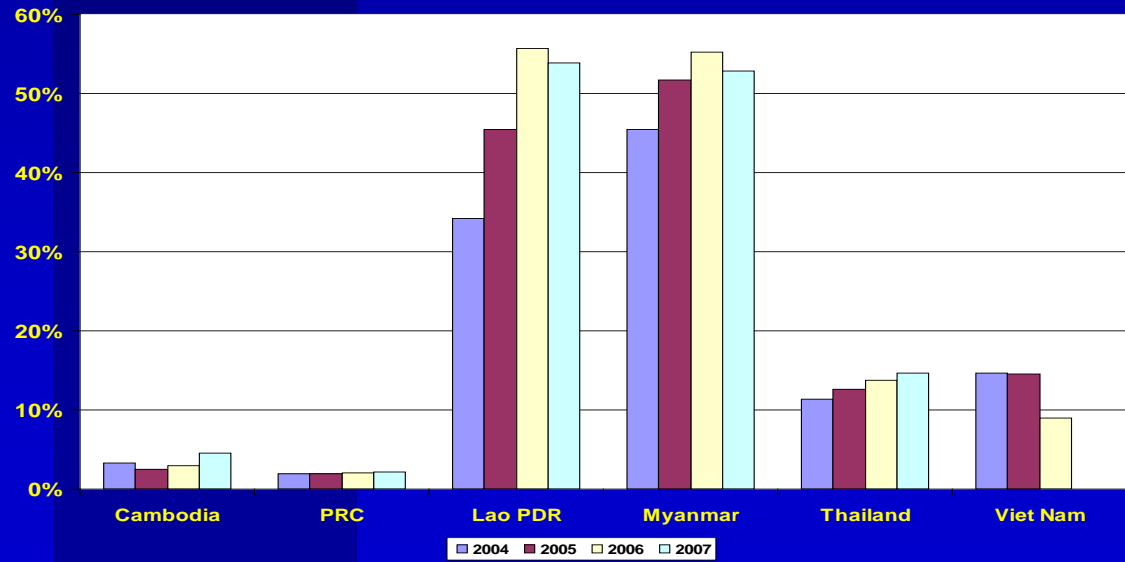
Source: ADB

# Trade Statistics

Average Share of Exports to GDP



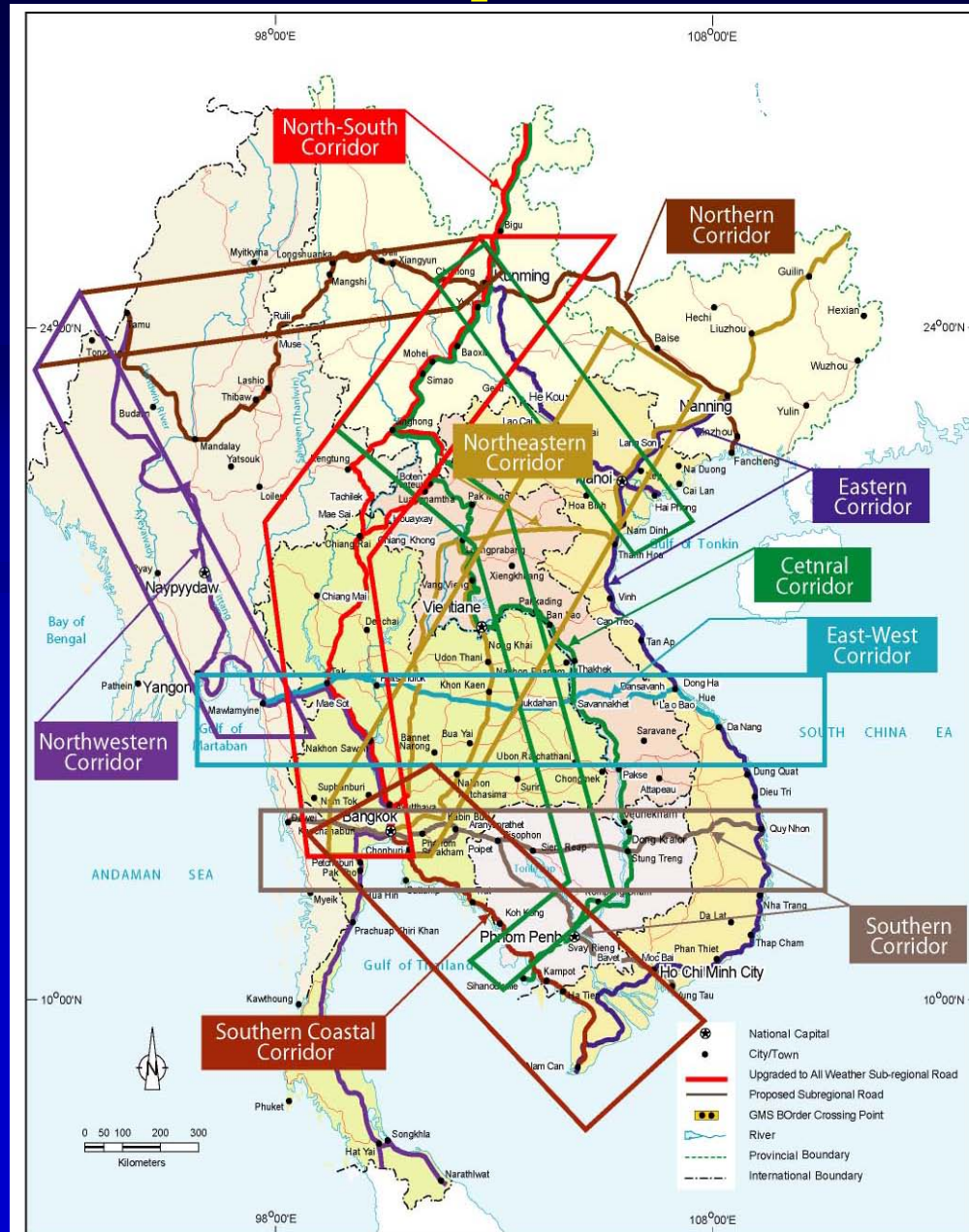
GMS Share in Exports



# GMS Program

- Investment in the development of infrastructure to
  - enable the development and sharing of resource base, and
  - promote the freer flow of goods and people in the subregion.
- Investment in capacity building and support to implement Cross Border Transport Agreement (CBTA)
  - Covers all the relevant aspects of cross-border transport facilitation.
  - Not yet fully implemented but key pilot programs underway.
- Assessing economic outcomes:
  - Change in economic flows across border points.
  - GTAP model along with household survey data.

# Corridor Development in GMS



# Estimates of Cost and Time Savings along NSEC

| Bangkok-Kunming          | \$ per Ton | % Change | Transit Time (hours) | % Change | Perception of reliability (based on a 5 point scale) |
|--------------------------|------------|----------|----------------------|----------|--|
| <b>R3W (via Myanmar)</b> |            |          |                      |          |  |
| • 2000                   | 639        |          | 77                   |          | 2.2  |
| • 2006                   | 470        | 26.5     | 46                   | 40.3     | 3.0  |
| • 2015                   | 269        | 42.8     | 30                   | 34.8     | 3.5  |
| <b>R3E (via LaoPDR)</b>  |            |          |                      |          |  |
| • 2000                   | 563        |          | 78                   |          | 2.6  |
| • 2006                   | 392        | 30.4     | 51                   | 34.6     | 3.3  |
| • 2015                   | 210        | 46.4     | 30                   | 41.2     | 4.0  |
| <b>Via Mekong</b>        |            |          |                      |          |  |
| • 2000                   | 406        |          | 128                  |          | 2.7  |
| • 2006                   | 271        | 33.3     | 88                   | 31.7     | 3.4  |
| • 2015                   | 107        | 60.5     | 70                   | 24.5     | 3.7  |

# National-level Impacts on Trade Growth

|      | Lao Bao-<br>Dansavanh<br>Border<br>Crossing | Bavet -<br>Moc Bai<br>Border<br>Crossing | Impact on Lao PDR                                       | Impact on Cambodia                                   | Impact Viet Nam  |
|------|---|--|---|--|--|
| Year | Trade Value<br>(US\$ mil)                   | Trade<br>Value<br>(US\$ mil)             | % Trade Value at<br>Dansavanh to Total<br>Lao PDR Trade | % Trade Value at<br>Bavet to Total<br>Cambodia Trade | % Trade Value at<br>Lao Bao and Moc<br>Bai Total Viet<br>Nam Trade |
| 2000 | 58  | 8  | 5.4   | 0.3  | 0.2  |
| 2001 | 46  | 7  | 4.2   | 0.3  | 0.2  |
| 2002 | 22  | 5  | 2.0   | .02  | 0.1  |
| 2003 | 29  | 24                                       | 2.3   | 0.7  | 0.1  |
| 2004 | 46  | 22                                       | 2.9   | 0.5  | 0.1  |
| 2005 | 68  | 22                                       | 3.5   | 0.4  | 0.1  |
| 2006 | 136   | 43                                       | 4.9   | 0.7  | 0.2  |
| 2007 | 148   | 68                                       | 4.5   | 0.7  | 0.2  |

*Pilot implementation of CBTA at these border crossing points*

# Simulations of Regional Impacts

- Following construction of the supporting databases and development of specific scenarios, we simulated anticipated economy-wide outcomes by:
  - Lowering land transport costs within GMS by **45%**
  - Reducing costs of trade within the region by **25%**

# Simulated Regional Impacts of Reduced Transport and Trade Costs

|                             | Cambodia | Lao PDR | Myanmar | Thailand | Viet Nam | PRC     |
|-----------------------------|----------|---------|---------|----------|----------|---------|
| GDP (US\$m)                 | 403.9    | 173.4   | 363.2   | 1,822.3  | 1,539.2  | 1,201.8 |
| GDP %                       | 8.3      | 7.1     | 4.7     | 1.1      | 3.6      | 0.1     |
| GDP% <i>excluding PRC</i>   | 7.7      | 6.9     | 4.1     | 0.7      | 2.4      | 0.0     |
| Exports (US\$m)             | 226.6    | -28.1   | 50.5    | 3,356.8  | 1,201.0  | 1,787.1 |
| Exports (%)                 | 5.3      | -4.3    | 1.7     | 2.8      | 3.7      | 0.3     |
| EV (US\$m)                  | 480.6    | 261.3   | 618.6   | 2,955.5  | 2,157.9  | 1,441.0 |
| EV <i>excluding PRC</i>     | 460.4    | 259.5   | 557.6   | 1,734.9  | 1,390.7  | -206.5  |
| % Contribution to welfare   |          |         |         |          |          |         |
| Allocative efficiency       | 12.6     | 4.8     | 12.5    | 16.8     | 5.0      | 6.0     |
| Improved terms of trade     | 10.5     | 22.6    | 37.3    | 39.9     | 21.8     | 15.7    |
| Improved transport          | 0.1      | 3.6     | 3.9     | 2.8      | 5.7      | 2.2     |
| Improved trade facilitation | 71.8     | 62.7    | 47.2    | 45.0     | 66.7     | 77.4    |

# Change in poverty headcount

| \$1/day Stratum   | Cambodia | Lao PDR | Thailand | Viet Nam | GMS-4     |
|-------------------|----------|---------|----------|----------|-----------|
| Agriculture       | 83,504   | 54,483  | 936      | 7,720    | 146,643   |
| Non-Agriculture   | 7,289    | 2,760   | 1,087    | 1,035    | 12,171    |
| Urban Labor       | 4,272    | 1,121   | 230      | 2,280    | 7,903     |
| Rural Labor       | 3,905    | 303     | 2,879    | 6,219    | 13,306    |
| Transfers         | 1,658    | 236     | 9,670    | 6,010    | 17,574    |
| Urban Diversified | 14,858   | 5,409   | 3,206    | 1,741    | 25,214    |
| Rural Diversified | 101,467  | 11,323  | 35,994   | 34,762   | 183,546   |
| Total             | 216,953  | 75,635  | 54,002   | 59,767   | 406,357   |
| \$2/day Stratum   | Cambodia | Lao PDR | Thailand | Viet Nam | GMS-4     |
| Agriculture       | 106,708  | 102,610 | 6,263    | 62,333   | 277,914   |
| Non-Agriculture   | 22,648   | 5,472   | 25,440   | 14,039   | 67,599    |
| Urban Labor       | 7,291    | 3,640   | 14,010   | 82,203   | 107,144   |
| Rural Labor       | 6,747    | 409     | 44,533   | 34,885   | 86,574    |
| Transfers         | 1,333    | 190     | 22,142   | 4,560    | 28,225    |
| Urban Diversified | 39,558   | 15,507  | 33,258   | 146,793  | 235,116   |
| Rural Diversified | 198,348  | 36,923  | 161,429  | 549,520  | 946,220   |
| Total             | 382,633  | 164,751 | 307,075  | 894,333  | 1,748,792 |

# But haven't included

- Potential Negative impacts on:
  - income disparities
  - trafficking
  - traffic accidents
  - environmental outcomes
- Potential Positive impacts of:
  - economies of scale and scope
  - spillovers
  - dynamic resource markets impacts
  - long term gains from improved access to education and health facilities

# Some concluding thoughts

- Benefits realised to date mainly national:
  - National traffic growth has been rapid while growth in international traffic has lagged.
- Importance of 'software'
  - CBTA not fully implemented.
  - While roads (including cross-border) have been rehabilitated, not fully utilised.
- '...efficiency in the use of resources can be realized only if the supporting regulatory and policy framework is in place.' ADB 2008

*Thank You!*