Context: Major growth expected in developing country road transport

Source: Holger Dalkmann citation of Sakamoto, K, 2010 based on IEA 2010 and AEA 2010
Cost-Effective GHG Reductions from Sustainable Urban Transportation
Doesn’t driving make a country prosperous?

Not necessarily.
Alternative Urban Growth Pathways

Modal Share of Motorized Private Travel vs. GDP

Source: Holger Dalkmann citation of UITP 2006, in IEA, 2008
Mobility – the ability to move

Accessibility – the ability to get where you want to go
Travel (VKT) that contributes little or nothing to households and local economies might be called “empty miles”.

Low Accessibility results in empty miles.
Low Accessibility plus Low Mobility results in “empty hours”

Travel (Person hours) that consumes nearly as much as it contributes to households and local economies might be called “empty hours”
“Smart” development patterns can:

• Make money
• Save on costs
• Improve quality of life

for

• Households
• Businesses
• Government
How does it happen?

Improved accessibility
More efficient travel
More efficient services
Lower energy costs
Use natural services
Inclusive planning
Quality design
### Return on Investment

<table>
<thead>
<tr>
<th>Business</th>
<th>Household</th>
<th>Municipal and Region</th>
<th>Nation</th>
</tr>
</thead>
</table>

### Savings on Expenditures

<table>
<thead>
<tr>
<th>Business</th>
<th>Household</th>
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</table>

### Improved Quality of Life

<table>
<thead>
<tr>
<th>Business</th>
<th>Household</th>
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</tr>
</thead>
</table>
Dallas: Retail grew 33% in 1st year after light rail began

Portland: $100 million public investment in streetcar attracted $3.5 billion in adjacent private investment

Denver: Households within ½ mile of light rail line rose in value by 18% 2006-8; other Denver homes lost 7.5%

US: Investments in transit create 2X jobs as in highways
Bogotá TransMilenio BRT, Cycling and Walking Efforts
• 15-20% increase in property values along the original line
• Enhanced tax revenues
• Improved access to jobs, services
Total Return on Investment of GZ BRT by Year, 2010-2019

Source: ITDP
Sacramento: Infrastructure savings: $18,000 per household

Bay Area: $140 million in health savings by 2035

Sarasota, FL: Downtown development cost city 50% less and generated 8 times the tax revenues than similar suburban development

Garland, TX: Tree canopy diffuses 19 million cubic feet of runoff per storm, displacing the need for $38 million in retention infrastructure
Transport Impacts hinder the Local Economy

Percent of the Gross Regional Product in Transport Externalities

Slide from Darío Hidalgo, EMBARQ  
Urban Transport Investment Requirements under three Policy Scenarios in India

SCN 1:
Sprawling Cities focused on Rail and Road Infrastructure

SCN 2:
Relatively Compact Cities with Complete network

SCN 3:
Compact Cities with Complete network and transit focused

Better growth management can cut investment requirements by more than half

Source: Prof. H.M. Shivanand Swamy, Centre of Excellence in Urban Transport, CEPT University
### Improved Quality of Life

<table>
<thead>
<tr>
<th>Business</th>
<th>Household</th>
<th>Municipal &amp; Regional</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality places attract high quality workers</td>
<td>Better access to services</td>
<td>Reduced exposure to congestion</td>
<td>Reduced GHGs</td>
</tr>
<tr>
<td>Improved environment for small businesses</td>
<td>Affordable housing</td>
<td>Thriving public spaces</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Access to nature &amp; recreation</td>
<td>Growth reflects community values</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased physical activity</td>
<td>Protects natural</td>
<td></td>
</tr>
</tbody>
</table>

**US:** Lower rates of lower rate of pedestrian fatalities in compact urban areas, higher rates in car-oriented suburban areas

**Seattle:** Increase in neighborhood walkability was associated with more time spent walking and lower body-mass-index

**Placemaking efforts** in Ohio, Kentucky, Washington DC, others help attract new businesses and visitors to formerly depressed areas.
Before BRT—bus and traffic congestion, Ganding Station area

Source: ITDP
After BRT—efficient traffic flow at Ganding Station area

Source: ITDP
Safe, high-quality walking and bicycling spaces along GZ BRT corridor

Source: ITDP
Impacts on Public Opinion

% of All Respondents

- Satisfied With Public Transit
- Corridor Environment is Good
- Walking In The Corridor is Safe
- Are Proud of Guangzhou

Respondents Who Agree with Above Statement

- Before BRT
- After BRT
Leveraging transport finance

Source: Holger Dalkmann, TRL
<table>
<thead>
<tr>
<th>Concepts &amp; Plans</th>
<th>Financing</th>
<th>Technology Transfer</th>
<th>Capacity Building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>finance of organisation</strong></td>
<td>Integrated urban and transport plans</td>
<td>Transport modelling</td>
<td>Organisation development</td>
</tr>
<tr>
<td></td>
<td>Guidelines &amp; Rules</td>
<td>Data gathering (e.g. traffic counting)</td>
<td>Trainings</td>
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<tr>
<td></td>
<td>Outlining Transport systems (e.g. BRT)</td>
<td></td>
<td>Setting up networks</td>
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<tr>
<td>Infrastructure</td>
<td>Constructin of ...</td>
<td>Efficient vehicles and retrofitting</td>
<td>Green public procurement</td>
</tr>
<tr>
<td><strong>mainly initial investments</strong></td>
<td>Bus lanes, rail, stops</td>
<td>E-ticketing</td>
<td>Building Standards</td>
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<tr>
<td></td>
<td>NMT networks</td>
<td>Passenger information systems</td>
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<td>Interchanges</td>
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<tr>
<td>Operation &amp; Management</td>
<td><strong>continuous financial flows</strong></td>
<td>Intel. Transport Systems (ITS)</td>
<td>Maintenance &amp; Inspection</td>
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<tr>
<td></td>
<td>Operational subsidies</td>
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<td>System optimisation</td>
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<td></td>
<td>Campaigns</td>
<td>Charging systems</td>
<td>Eco Driving</td>
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<td></td>
<td>Reporting on performance</td>
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</table>

(Source: Binsted, et al, Accessing Climate Finance for Sustainable Transport, GIZ)
NAMA Possibilities?

Concessionary debt financing:
• Transportation infrastructure: BRT, walking and cycling infrastructure
• Rationalize or transform local bus systems to improve efficiency
• Land use improvements: mixed use and transit-oriented development, design enhancements for pedestrians, zoning changes, inclusive smart growth planning

Grants to defray incremental costs of public or private smart growth initiatives:
• Cover cost of land, infrastructure or tax incentives

Support for a program that provides funding for capacity building and technical assistance:
• Support development of integrated, low-carbon transportation, land use and housing plans
• Enhance capacity to evaluate economic and quality of life impacts of transportation and land use decisions