



Sixth Regional EST Forum in Asia

4 Dec 2011, New Delhi, India

The Bangkok 2020 Declaration

- A vision for Asia in promoting sustainable transport towards a Green Economy



Photos: Lloyd Wright

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Regional Environmentally Sustainable Transport Forum in Asia under the Asian EST Initiative

Joint Initiative of UNCRD and MOEJ since 2004



Partner/Supporting Organizations



BANGKOK 2020 DECLARATION ~ Sustainable Transport Goals for 2010-2020

At the Fifth Regional EST Forum in August 2010, 22 Asian countries agreed on a voluntary and goodwill declaration, “[the Bangkok Declaration for 2020 – Sustainable Transport Goals for 2010-2020](#)”, in order to demonstrate renewed commitment to achieving sustainable transport in Asia over the next decade.



BANGKOK 2020 DECLARATION

- The Bangkok 2020 Declaration is based on **an integrated EST approach**, covering **a comprehensive set of twenty goals** under three key broad strategies – Avoid, Shift and Improve.
- The Declaration was **an input to CSD-19** (the 19th session of the UN Commission on Sustainable Development) in May 2011.
- Reflecting **regional consensus**, the Bangkok 2020 Declaration is expected to serve as a **recommended set of benchmark** among Asian countries for the overall decisions in transport policy, planning, and development.

Foro de Transporte Sostenible para América Latina

FTS

22 AL 24 DE JUNIO 2011
BOGOTÁ - COLOMBIA

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- Similar momentum in Latin American region for the promotion of EST - **First Sustainable Transport Forum for Latin America** was held in Bogotá, Colombia, 22-24 June 2011.
- As a key outcome of the important inaugural Forum, 9 Latin American countries adopted the **Bogotá Declaration**, containing twenty-three sound strategies for the promotion of EST.

“Rio+20 will be one of the most important global meetings on sustainable development in our time. At Rio, our vision must be clear: **a sustainable green economy that protects the health of the environment while supporting achievement of the MDGs** through growth in income, decent work and poverty eradication.”



RIO+20
United Nations
Conference on
Sustainable
Development

United Nations
Secretary-General
Ban Ki-moon

Principal Objectives of Rio+20

- 1) Secure renewed political commitment to sustainable development;
- 2) Assess progress and implementation gaps in meeting already agreed commitments; and
- 3) Address new and emerging challenges

Themes of Rio+20

- 1) A green economy in the context of sustainable development and poverty eradication; and
- 2) The institutional framework for sustainable development.



Shared understanding/on-going discussions on a Green Economy

- 1) no single, internationally definition
- 2) not a substitute or replacement of SD, but a **means to achieve SD**
- 3) no **“one-size-fits-all” pathway** towards green economy
- 4) needs to be build from the bottom-up approach, responding to different national development conditions
- 5) underscores economic dimension of SD, with balanced and integrated consideration of environmental and social dimensions, as well as inter-generational equity.
- 6) should be based on the **Rio principles**, particularly the principle of “common but differentiated responsibilities”
- 7) “an economy that not only improves human well-being and lessens inequality but also reduces environmental risks and ecological scarcities” (UNEP 2011).
- 8) an economy that is low carbon, resource efficient and socially inclusive

Green Transport in a Green Economy

- It is a transport system which can be understood as environmentally friendly (low carbon), resource (energy and fuel) efficient and socially (safe, pro-poor and gender considerations) inclusive
- It is a transport system which allows the basic access and development needs of individuals, companies and society to be met while ensuring environmental sustainability through the protection of global ecosystems including climate, public health and natural resources, and while promoting poverty alleviation and inter-generational equity (UNEP, 2011).



**Bangkok 2020 Declaration Goals
towards a Green Economy**

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Possible contribution towards a Green Economy		
		Env Friendly (low carbon)	Resource Efficient (energy/fuel)	Socially Inclusive
1. Integrated Land-Use Transport Planning	<ul style="list-style-type: none"> • creation of key public transport corridors • integration of public transport with NMT friendly infrastructures • establishment of greenbelt/green zones • prior consideration of sustainable transport service in urban development plans (housing, education, commercial, entertainment, recreation etc) • traffic restrictions for sensitive areas 	√ √ √ √ √	√ √ √ √	√ √ √ √
2. Mixed-Use Development	<ul style="list-style-type: none"> • integration of residential, work, retail and entertainment activities into one area. • transit oriented development (TOD), smart growth policies • control of urban sprawl • safe pedestrian bridges and network 	√ √ √ √	√ √ √ √	√ √ √ √
3. Information & Communication Technologies	<ul style="list-style-type: none"> • wider internet access and broader use of internet services • teleconferencing • tele-working, tele-shopping 	√ √ √	√ √ √	√ √ √

Co-benefit Impact from Land Use Planning Measures

Economic benefits	Smart growth polices	Transit-oriented development
Congestion reduction	√	√
Consumer spending savings	√	√
Employment creation	√	√
Small-enterprise development	√	√
Traffic accident reduction		
Technology transfer	√	√
Energy security	√	√
Economic productivity		
Environmental benefits		
Greenhouse gas reductions	√	√
Particulate matter reduction	√	√
Sulphur oxides reduction	√	√
Nitrogen oxides reduction	√	√
Carbon monoxide reduction	√	√
VOC reduction	√	√
Noise reduction	√	√
Solid waste reduction	√	√
Water contaminant reduction	√	√
Social benefits		
Health (e.g. obesity reduction)	√	√
Crime reduction	√	√
Gender equity promotion	√	√
Universal access for disabled	√	√
Scholar access improvement	√	√
Convenience and comfort	√	√
Community sociability	√	√
Reduction in severance	√	√



Oyumino (Chiba, Japan) is a smart growth community that interconnects residential and commercial areas with a large network of NMT routes. Photo: Lloyd Wright



Singapore's LRT System developed around purpose-built-communities in which residential, shopping, education, public services and workplaces are all co-located. Photo: Lloyd Wright

Smart growth refers to a set of policies that promote more accessible land-use policies. Smart Growth policies include the mixed-use development patterns that allow the close proximity of residential areas to shopping, work and services. **TOD** refers to integrating development and public transport along high density corridors and at key nodal points brings benefits to all. Such planning focuses largest number of destinations (work, residential, public services, schools near public transport stations, and thus encouraging both NMT as well as public transport usage.

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Possible contribution towards a Green Economy		
		Env Friendly	Resource Efficient	Socially Inclusive
4. Non-Motorized Transport	• dedicated and safe pedestrian and bicycle lanes	√	√	√
	• bicycle rental / bike sharing program	√	√	√
	• streets design for pedestrian and cycle safety and convenience	√	√	√
	• bicycle insurance & registration	√	√	√
	• secured bicycle parking facilities in public stations and major buildings	√	√	√√
	• pedestrianization (car-free day/zone)	√	√	√
	• fixed % of road infrastructure for NMT	√	√	√
5. Public Transport	• bus rapid transit (BRT)	√	√	√
	• rail	√	√	√
	• light rail transit (LRT)	√	√	√
	• fare and system integration / smart card	√	√	√
	• universal access or barrier free access to public transport system			√

Co-benefit Impact from Non-motorized Transport (NMT)

Economic benefits	Pedestrian upgrades	Pedicabs	Bicycle rentals	Car-free day
Congestion reduction	√	√	√	√
Consumer spending savings	√	√	√	√
Employment creation	√	√	√	√
Small-enterprise development	√	√	√	√
Traffic accident reduction	√	√	√	√
Technology transfer		√		
Energy security	√	√	√	√
Economic productivity	√	√	√	√
Environmental benefits				
Greenhouse gas reductions	√	√	√	√
Particulate matter reduction	√	√	√	√
Sulphur oxides reduction	√	√	√	√
Nitrogen oxides reduction	√	√	√	√
Carbon monoxide reduction	√	√	√	√
VOC reduction	√	√	√	√
Noise reduction	√	√	√	√
Solid waste reduction	√	√	√	√
Water contaminant reduction	√	√	√	√
Social benefits				
Health (e.g. obesity reduction)	√		√	√
Crime reduction	√	√	√	√
Gender equity promotion	√	√	√	√
Universal access for disabled	√			√
Scholar access improvement	√	√	√	√
Convenience and comfort	√	√	√	√
Community sociability	√		√	√
Reduction in severance	√			



Each Sunday, Bogotá gives 120 kilometres of road space over to cyclists, skaters, joggers, and families. Photo by Lloyd Wright.



Bicycle rental facility in Seoul, Photo: Lloyd Wright



Delivery service by Pedicab/bicycle taxi in London, Photo: ITDP

Source: Win-Win Solutions to Climate Change and Transport, UNCRD, 2009.

Bike Sharing Program of Hangzhou, China

Location	Policy/Program /Initiatives	Description	Policy Approach	Triple Bottom Line Benefits
<p>Hangzhou, China</p> <p>other examples in Asia include Shanghai, Guangzhou, Foshan, Kaohsiung, Taizhou, Wuhan, Zhuzhou (China), Toyama, Kitakyushu (Japan) Changwon Daejeon (Rep. of Korea)</p>	Bike-Sharing Programs	<p>Date started: May 2008</p> <p>Bicycle fleet size: 60,600</p> <p>Number of stations: 2,416</p> <p>Opening time: 06:30am-20:00pm some station are open for 24 hours</p> <p>Fee structure: 1h is free, 1-2h is 1 RMB, 2-3h is 2RMB, over 3h, 3 RMB per hour.</p> <p>Number of employees: 1,000</p> <p>Average day trips: 240,000 trips</p> <p>Operator: Hangzhou Public Transport</p>	Private or city government investment in implementing and managing bike-sharing program	<p>Improvements in outdoor air quality from reduced vehicle emissions and associated health benefits.</p> <p>Reduced GHGs emissions due to reduced car usage.</p> <p>Increased market opportunities for low-carbon transportation.</p> <p>Decreased inner-city traffic congestion and reduced budget on road infrastructure.</p>

Bike Sharing Program of Hangzhou, China

At park



Bike Sharing Program of Hangzhou, China

Alongside main roads



Bike Sharing Program of Hangzhou, China

It is a good example of people- and environment-friendly, resource efficient, and socially inclusive mode of transport.



Governmental policies or incentives for private sectors are critical to develop bike sharing schemes.



Co-benefit Impact from Public Transport

Economic benefits	Bus Rapid Transit	System Integration	Fare - free service
Congestion reduction	√	√	√
Consumer spending savings	√	√	√
Employment creation	√		
Small-enterprise development			
Traffic accident reduction	√	√	√
Technology transfer	√		
Energy security	√	√	√
Economic productivity	√	√	√
Environmental benefits			
Greenhouse gas reductions	√	√	√
Particulate matter reduction	√	√	√
Sulphur oxides reduction	√	√	√
Nitrogen oxides reduction	√	√	√
Carbon monoxide reduction	√	√	√
VOC reduction	√	√	√
Noise reduction	√	√	√
Solid waste reduction	√		
Water contaminant reduction	√		
Social benefits			
Health (e.g. obesity reduction)		√	
Crime reduction	√	√	√
Gender equity promotion	√	√	√
Universal access for disabled	√	√	√
Scholar access improvement	√	√	√
Convenience and comfort	√	√	√
Community sociability			√
Reduction in severance			



The TransMilenio BRT in Bogotá. Photo courtesy of Volvo Bus Corporation.



System integration (NMT + Public Transport) /Park-and-ride facilities, Lloyd Wright

Source: Win-Win Solutions to Climate Change and Transport, UNCRD, 2009.

Bus Rapid Transit (BRT) in Mexico City

Affordable, efficient, and convenient



Bus Rapid Transit (BRT) in Mexico City

Location	Policy/ Program/ Initiatives	Description	Policy Approach	Triple Bottom Line Benefits
<p>Mexico</p> <p>other successful examples include</p> <p>Curitiba (Brazil)</p> <p>Bogotá (Colombia)</p> <p>Guangzhou (China)</p> <p>Jakarta (Indonesia)</p> <p>Seoul (S. Korea)</p> <p>Ahmedabad (India) and etc.</p>	<p>Mexico City Bus Rapid Transit (BRT)</p>	<p>In 2005, Mexico City opened Metrobus, a BRT corridor along one of the city's busiest streets.</p> <p>Metrobus replaced about 350 standard buses with 97 new articulated BRT vehicles.</p> <p>Vehicles have a maximum capacity of 160 passengers and run at extremely high frequencies, roughly 56 per peak hour.</p> <p>Currently, the BRT is carrying roughly 600,000 passengers per day. There is a trust fund that manages, invests, and distributes all fare revenues.</p> <p>Given the program's success, the Mayor of Mexico City is actively considering building 10 more Metrobus corridors.</p>	<p>Mexico has issued a series of regulations supporting public transport planning.</p> <p>City Gov't supported the planning, coordination, & management as well as the financing of the construction and maintenance of the corridor infrastructure.</p>	<p>Reduced commute time from 1.5 hours to 1 hour for the route</p> <p>Reduced passenger exposure to CO, benzene, and PM 2.5 by up to 50 percent, as compared with previous bus service in the corridor.</p> <p>Reduction of CO2 by 35,000 tons annually.</p> <p>Increased market opportunities for rapid transit buslines.</p>

Guangzhou BRT – a cost effective option

“ BRT provides a sophisticated metro-quality transit service at a cost that most cities, even developing cities, can afford ”

- GTZ BRT Sourcebook



Guangzhou BRT System

Main features:

- 29 stations and 23km dedicated busways
- free transfer in the same direction (smart card with discount)
- direct physical connections between BRT and metro stations
- integration between BRT and bicycle parking & bicycle sharing
- the world's longest BRT stations

Impacts:

- saves commuting time (1 hour shorter in daily journey)
- daily passenger ridership : 800,000 boardings per day
- the cost of the BRT system infrastructure has been estimated to be equivalent to building around 800 meters of underground metro.

Learning Objectives:

- BRT is one of the most cost-effective transit systems for cities to provide fast, comfortable and high quality public transport service
- Integration with rail-based metro has proven to be an indispensable feature of the BRT and the mass transit network of the city

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Possible contribution towards a Green Economy		
		Env Friendly	Resource Efficient	Socially Inclusive
6. Transport Demand Management	<ul style="list-style-type: none"> • land use development controls • public transport and NMT improvement and integration • car sharing / car pooling • parking pricing and management • regulatory controls (odd/even systems) • congestion charging • removal of fossil-fuel subsidies • vehicle/fuel/carbon taxes • alternative work schedule (flextime, compressed workweek, etc) • promotion of park & ride / bike & ride 	<ul style="list-style-type: none"> √ √ √ √ √ √ √ √ √ √ 	<ul style="list-style-type: none"> √ √ √ √ √ √ √ √ √ √ 	<ul style="list-style-type: none"> √ √ √ √ √ √ √ √ √ √
7. Inter-City Passenger & Goods Transport	<ul style="list-style-type: none"> • high-speed intercity passenger rail • rail and waterway freight transport 	<ul style="list-style-type: none"> √ √ 	<ul style="list-style-type: none"> √ √ 	<ul style="list-style-type: none"> √ √
8. Cleaner Fuels & Technologies	<ul style="list-style-type: none"> • CNG, biodiesel, bioethanol • hybrid electric, hydrogen (fuelcell tech.) • fiscal incentives for cleaner fuels • public procurement for green vehicles and fuels 	<ul style="list-style-type: none"> √ √ √ √ 	<ul style="list-style-type: none"> √ √ √ √ 	<ul style="list-style-type: none"> √ √ √ √

Co-benefit Impact from Transport Demand Management (TDM)

Economic benefits	Vehicle use restrictions	Fuel taxes	Parking levies
Congestion reduction	√	√	√
Consumer spending savings	√		
Employment creation			
Small-enterprise development	√	√	√
Traffic accident reduction			
Technology transfer	√	√	√
Energy security	√	√	√
Economic productivity			
Environmental benefits			
Greenhouse gas reductions	√	√	√
Particulate matter reduction	√	√	√
Sulphur oxides reduction	√	√	√
Nitrogen oxides reduction	√	√	√
Carbon monoxide reduction	√	√	√
VOC reduction	√	√	√
Noise reduction	√	√	√
Solid waste reduction	√	√	√
Water contaminant reduction	√	√	√
Social benefits			
Health (e.g. obesity reduction)	√	√	
Crime reduction	√	√	√
Gender equity promotion		√	√
Universal access for disabled	√	√	√
Scholar access improvement			
Convenience and comfort	√	√	√
Community sociability	√		√
Reduction in severance			

TDM generally refers to policies and measures:

- to reduce the total volume of traffic
- to promote effective shifts towards more sustainable modes of transport.



(City of Seoul)

Source: Win-Win Solutions to Climate Change and Transport, UNCRD, 2009.

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Possible contribution towards a Green Economy		
		Env Friendly	Resource Efficient	Socially Inclusive
9. Emission and fuel quality standards	<ul style="list-style-type: none"> • vehicle standards • vehicle emission standards • fuel quality standards • fuel economy standards 	✓ ✓ ✓ ✓	✓	
10. Inspection & Maintenance (I/M)	<ul style="list-style-type: none"> • establishment of a regular vehicle inspection and maintenance regime 	✓		✓ (job creation)
11. Intelligent Transportation System (ITS)	<ul style="list-style-type: none"> • automatic toll collection • speed limit enforcement • stop line control • dedicated bus lane control • traffic management • parking management • real-time information for public transport • navigation • information provision for assisting safety driving • develop green transport through GPS systems, ITS, green logistics. 	✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Green Economy		
		Env Friendly	Resource Efficient	Socially Inclusive
12. Freight Transport	<ul style="list-style-type: none"> • fuel-reducing technologies for trucks • drop-and-hook to reduce empty miles • introduction of milk run system • consolidation centers/freight centers/ freight village • logistics information platform • freight company consortium • switch to rail • cargo bikes • satellite tracking to reduce truck idling and speeding • fuel economy standards for trucks 	<ul style="list-style-type: none"> √ √ √ √ √ √ √ √ √ √ 	<ul style="list-style-type: none"> √ √ √ √ √ √ √ √ √ √ 	
13. Safety (zero fatality policy for all transport modes)	<ul style="list-style-type: none"> • introduction of various traffic calming measures, including speed humps, pedestrian refuges, curb extensions, roundabouts and etc. • better enforcement on seatbelt, helmet, speeding, and alcohol • national road safety program and campaign 			<ul style="list-style-type: none"> √ √ √

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Green Economy		
		Env Friendly	Resource Efficient	Socially Inclusive
14. Public health	<ul style="list-style-type: none"> • ambient air quality monitoring • stricter emission standards and regulations • non-smoking policy in public transport and stations 	√ √ √		√ √ √
15. Air quality and noise standards (Progressive, health-based, cost-effective, and enforceable)	<ul style="list-style-type: none"> • green car sharing • clean fuels and vehicles • congestion pricing • low emission zone • buffer zones, planting vegetation, and installing noise insulation • import regulations for used cars 	√ √ √ √ √ √	√ √	√ √ √ √
17. Climate Change Mitigation and Energy Security	<ul style="list-style-type: none"> • carbon Taxes • development of the national inventory for GHG emissions in the transport sector • national vision and mater plan for climate mitigation in the transport sector 	√ √ √		

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Green Economy		
		Env Friendly	Resource Efficient	Socially Inclusive
18. Finance and Economics	<ul style="list-style-type: none"> • clean development mechanism • public private partnership • cooperation with regional donors • transport NAMAs • revenue from fuel tax, vehicle taxes, parking charges, and road pricing. 	<p>√</p> <p>√</p> <p>√</p>		<p>√</p>
19. Information and Awareness	<ul style="list-style-type: none"> • incentives or free rides on public transport (e.g., in Seoul, Corvallis city (US)) • bicycle rides & events • car free days & events • advocacy through a Bicycle User Group • working with media (drawing, 3d-models, photos of before and after, site visits, press release, public events, etc) • driver education / eco-driving • labeling of environmental performance of vehicles • Information to raise people's awareness of alternative means of transport 	<p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p>	<p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p>	<p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p>

BKKD 2020 Goals	Best practices, including policies, infrastructures, regulations, et	Green Economy		
		Env Friendly	Resource Efficient	Socially Inclusive
20. Institutions and Governance	• formulation of national EST strategy	√	√	√
	• creation of national EST committee	√	√	√
	• dedicated EST officials at the Ministries of Transport, Environment and Health	√	√	
	• establishment of unit at national and local government level dedicated to NMT	√	√	√
	• establishment of a dedicated research institution for green transport	√	√	
	• environment impact assessment (EIA) as a required condition for building transport infrastructures prior to environmental clearance	√		
	• build capacity of institutions to foster greener transport and to ensure close cooperation with other key sectors	√	√	√

BKKD 2020 Goals -> Green Transport -> Green Economy

