



**HIGH-LEVEL POLITICAL FORUM  
ON SUSTAINABLE DEVELOPMENT**

***Side Event on  
Rural-Urban Connectivity in Integrated Regional Development ~  
Implications towards Livelihood Security and Poverty Alleviation,***

***(18:15-19:30 pm / 14 July 2017 / Conference Room B / UN HQ-New York)***

Environmentally Sustainable Transport (EST) in the context of inclusive Development

**Choudhury Rudra Charan Mohanty  
14 July 2017**

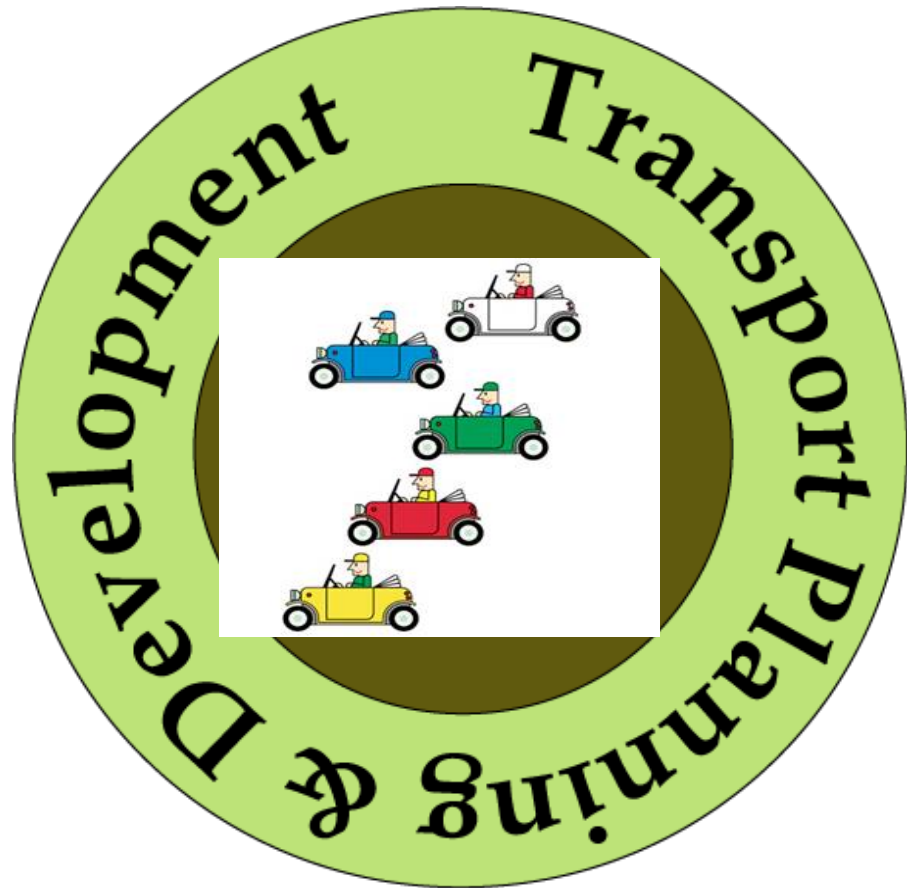


**UNCRD**

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***United Nations Centre for Regional Development***

# Inclusive transport policy, planning and development



**-OR-**



**The focus of the 2030 Agenda for Sustainable Development and SDGs on inclusiveness underscores the need to identify who is being left behind and in what ways.**



Environmentally  
Sustainable  
Transport

# ASIAN EST INITIATIVE



**Aichi Statement**  
(defining core EST areas)

**Kyoto Declaration**  
(endorsed first by 22, now 47 Asian Mayors with addendum 2014)

**Seoul Statement**  
(climate change)

**Bangkok 2020 Declaration**  
(20 goals)

**Colombo Declaration for Next Generation Low-carbon Transport Solutions in Asia**

**Bali Declaration on Vision Three Zeros**  
(Zero Congestion, Zero Pollution, Zero Accidents)

**Vientiane Declaration on Sustainable Rural Transport (2017)**



25 EST Member Countries



Awareness Raising on Sustainability Transport in Asia

Formulation of National EST Strategies (Philippines, Viet Nam, Cambodia, Lao PDR, Indonesia, Nepal)

Development Banks start shifting funding to Sustainable Transport

Promotion of Green Freight in Asia/Green Freight Agreement in Asia

Greater focus on sustainable transport, low carbon solutions for livable society in Asia in line with Rio+20 outcome – *The Future We Want*, SG's Climate Summit (2014), Post-2015 Development Goals/SDGs.

- Avoid trips
- Shift to most efficient mode
- Improve efficiency

# Integrated EST Strategy – Aichi Statement (2005)



**Avoid-Shift-Improve Principles:**

**Avoid** – avoid or reduce travel or the need to travel

**Shift** – shift to more environmentally friendly modes

**Improve** – improve the energy efficiency of transport modes and vehicle technology

# Integration of Transport and Land Use Planning for inclusive development

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 inter-connects 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.

# TOD & Smart Growth supports inclusive development through efficient integration of land use planning, public transport, cycling and walking..



Photo by JKT-c, Wikipedia Commons  
Nagoya Station in Japan, one of the world's largest train station by floor area (446,000 m<sup>2</sup>) and highest station building (245m )



Curitiba, Brazil has long provided a global model for successful integration of transportation and land use planning, with a focus on environmental preservation



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



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

- ✓ *More compact form of urban development reduces travel requirements - a critical component in building sustainable and inclusive cities*
- ✓ *ToD, supported by zoning and planning regulations, aims to locate people, jobs and services in areas within walking distance of public transportation*

# NMT remains a peripheral issue though it is an integral part of inclusive transport policy, planning and development

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Despite numerous co-benefits, NMT receives very low priority in most transport planning and infrastructure design and development, which is most often oriented to promote motorized transport rather than to support people movement or pro-poor mobility needs....

consequence => thousands of non-polluting pedestrians and cyclists are killed by accidents each year in developing countries!



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

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	√			√

# Transport Demand Management (TDM) for Inclusive Development

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)

*Traffic congestion adds significant burden and costs to the society and individuals through longer travel duration, increased pollution level, fuel consumption and GHG emissions, and degraded urban amenity which ultimately affects the users of public transport, cycling and walking;*



# Social Equity & Gender Considerations

- women often carry out frequent and short trips during off-peak hours and off the main-routes for child care, household management activities, informal sector employment, etc.
- social safety and security of public transport for women given that women commuters are on rise due to increased women work force in many business and commercial sectors.
- trip making is deterred for the poor, particularly for women, children, and the elderly, due to their vulnerability as pedestrians to traffic accidents and to personal violence.
- for the physically impaired and the elderly, proper public transport accessibility is a critical consideration to prevent higher risk of social exclusion .





<http://www.gtkp.com/themepage.php&themepgid=162>



**Poverty Eradication in Viet Nam:** Rural access improved significantly from an average of 76% to 84 % at the provincial level during 2002 to 2004 and the poverty also dropped with an average 24% in the same period (Regmi, 2013).

**Access to Education in India:** Data analysis of Indian PMGSY rural road project show school attendance increased by 22% as a result of the new village access roads (Mukherjee, 2012).

**Women empowerment in Pakistan:** Improved mobility options and access to transport provide numerous opportunities for women which help to improve their education, health care and livelihood. Photograph shows women actively participating in a rally in Pakistan.

**Accessibility and rural-urban connectivity brings numerous benefit to different segments of society mainly disadvantaged groups such as poor, elderly, physically disables, children, women and girls, youth and farmers.**



Photos courtesy of GMB Akash/Save the Children

**Access to Health in Bangladesh:** In the last decade, due to rural-urban connectivity, health facility for deliveries increased rapidly from 12% to 37% in rural communities, reducing both maternal and infant mortality incidences .



**Cambodian Case:** Rural-urban connectivity significantly helps Cambodian farmers for selling their vegetables using bicycles and tricycles.



**Access to drinking water:** India has the maximum number of people — 63 million — living in rural areas without access to clean water, according to a new global report released on World Water Day (Source: Indian express, 21 March 2017).

# Long way to go in bridging the accessibility gaps in rural areas.....

Many rural areas in developing countries lack adequate rural-urban connectivity. This poor connectivity constrains inclusive and sustainable development.



**Lack of accessibility (India Case):** The pregnant woman was carried by the men across the Nagabali river with waist deep water and all the way for five kilometres on the potholed road. (Source: <http://odishatv.in>; published in Jul 11, 2017)



**Lack of infrastructure (Indonesia Case):** In Batu Busuk Village, Indonesia, students have to walk over 30 feet above river to reach their school. If they don't use this method of going school then they have to walk 7 miles through forest root. (Source: <http://www.listotop.com>)



**Lack of connectivity (Nepal case):** Students are using ropes and pulleys (Gondola bridges) to pass the river without any safety. There are so many accidents appeared but there is no other option to reach school (Source: <http://www.listotop.com>).



Image Source: [descansitoviral](https://www.instagram.com/descansitoviral)

**China case:** Students live in boarding school in Pili, China. To reach their school they have to pass in dangerous mountain area (Source: <http://www.listotop.com/top-10-most-dangerous-school-routes-around-the-world/>).

**It is estimated that 40 per cent of the Asia Pacific region's rural population i.e. 700 million people, do not have access to an all-weather road (ESCAP 2015)**

### **Benefits of rural-urban connectivity: Indian case**

- ❑ Rural-urban linkage leads to stronger agricultural productivity and improved food security. A study that analyzed large survey database in India with many variables concluded that roads contributed directly agricultural production by 7 per cent (Binswanger, Khandker and Rosenzweig, 1993).
- ❑ An analysis of the data associated with the large Indian PMGSY rural road project, suggested that school attendance increased by 22 per cent a result of the new village access roads (Mukherjee, 2012)
- ❑ Connecting villages by all-season roads in Orissa, as part of the PMGSY rural road project, demonstrated that significant lives had been saved and the death rate was lower (Bell and van Dillen, 2012).
- ❑ Study in India found that road construction could impact healthcare accessibility by 30 per cent (Kanuganti, Sarkar, Singh, and Arkatkar, 2015).