

11th Regional EST Forum in Asia

(2-5 Oct 2018, Ulaanbaatar, Mongolia)

Pre-event 2: Workshop on Capacity Building Strategy for the Implementation of Low Carbon High Volume Transport in South Asia

2 October 2018 / 14:00-18:00, Ball Room 1, Shangri La Hotel, Ulaanbaatar

Role of Low Carbon, High Volume Transport in Achieving the Bangkok 2020 Declaration

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2 October 2018, Ulaanbaatar, Mongolia



United Nations Centre for Regional Development



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)



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

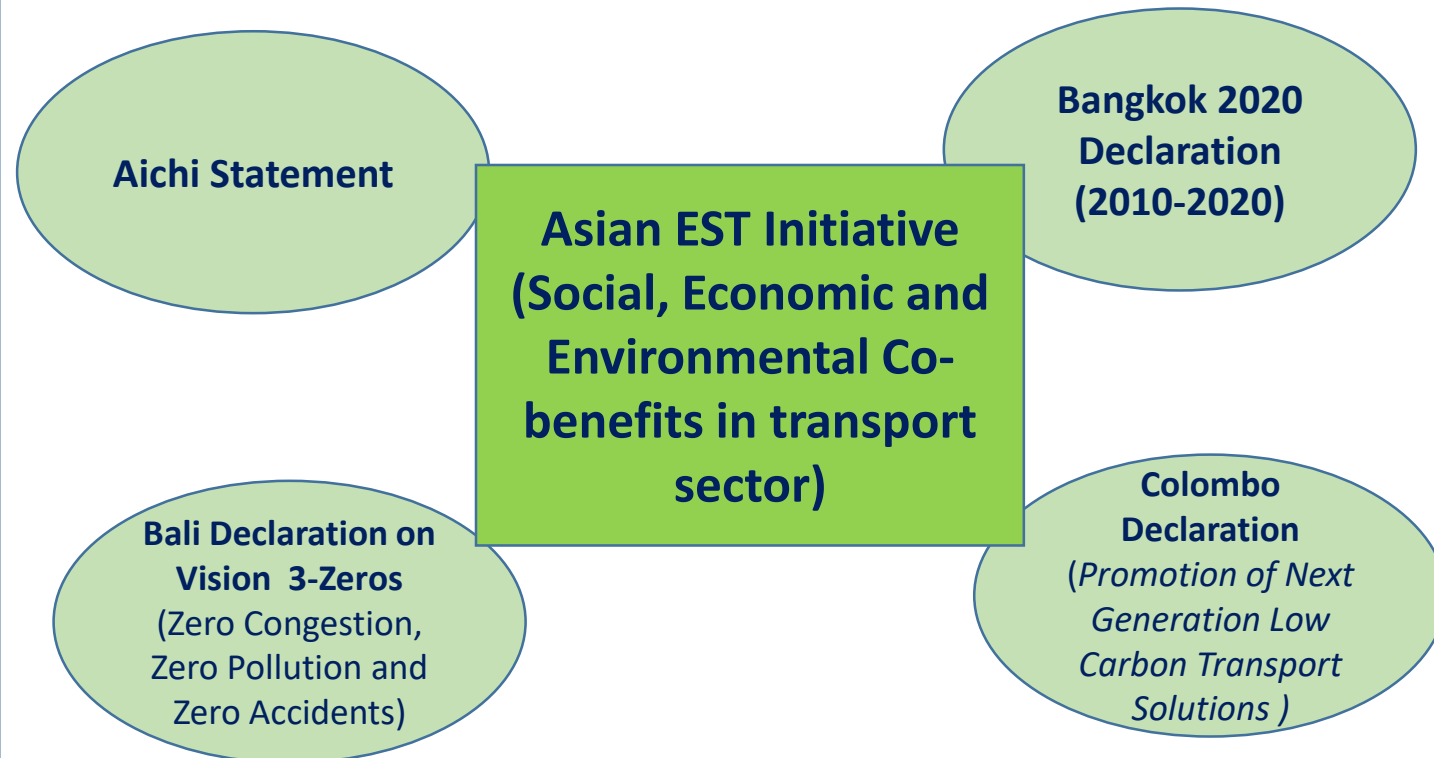
Greater focus on sustainable transport, low carbon solutions for livable society in Asia in line with Rio+20 outcome – The Future We Want, SG’s Climate Summit (2014), Post-2015 Development Goals/SDGs.

Avoid trips
Shift to most efficient mode
Improve efficiency

Governmental Statements/Declarations Adopted by EST Member Countries

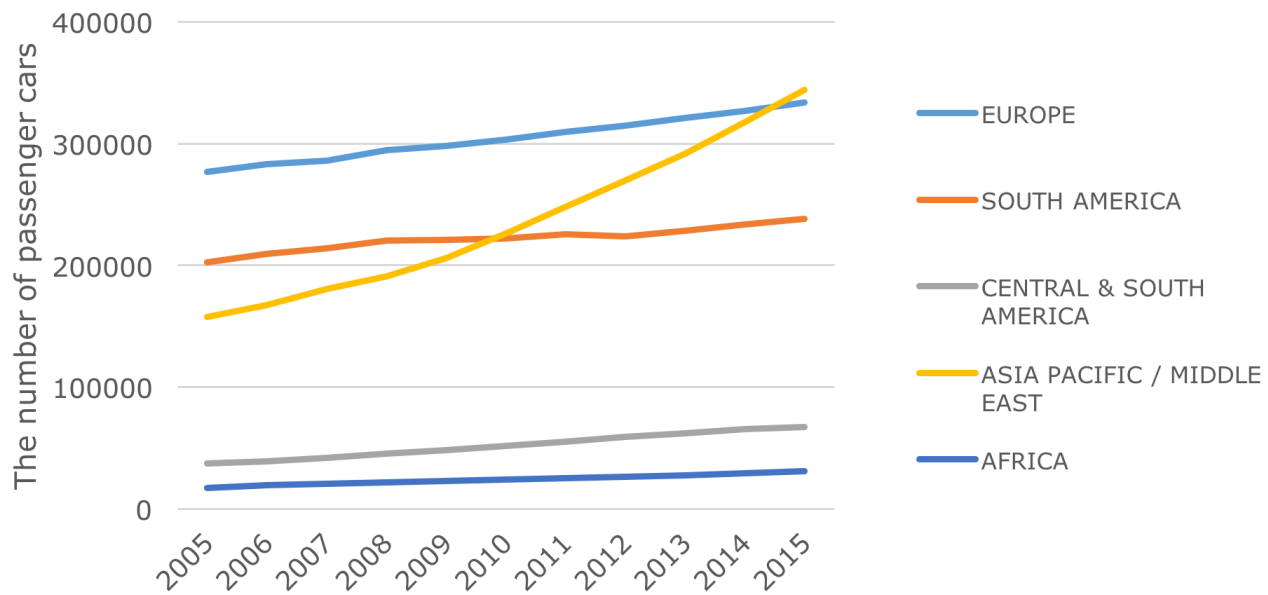
The Bangkok 2020 Declaration (2010-2020) adopted at 5th Regional EST Forum in Asia (2010, Thailand), the first regional declaration or consensus on the strengthening of environmentally sustainable (land) transport in developing Asia, aims to catalyze actions by governments & other key transport stakeholders in the region towards realization of safe, secure, affordable, efficient, people- and environment-friendly, and inclusive transport in rapidly urbanizing and modernizing Asia. The Bangkok 2020 Declaration, with twenty time-bound EST goals and monitoring indicators (to assess progress in meeting them) embedded in avoid-shift-improve strategy.

- 1) The Bangkok 2020 Declaration (2010-2020) & Bali Declaration on Vision Three Zeros - *Zero Congestion, Zero Pollution and Zero Accidents* Towards Next Generation Transport Systems in Asia provide an important basis for countries and cities to develop and implement next generation transport solutions - including required transport infrastructure development;
- 2) there is an expressed need by countries to strengthen the implementation of sustainable transport towards - poverty eradication, national productivity, human development, public health and safety, energy security, resilience of cities, improved accessibility, social equity, regional connectivity and economic integration and improved rural-urban linkage, among others - towards achieving the 2030 Agenda & SDGs.



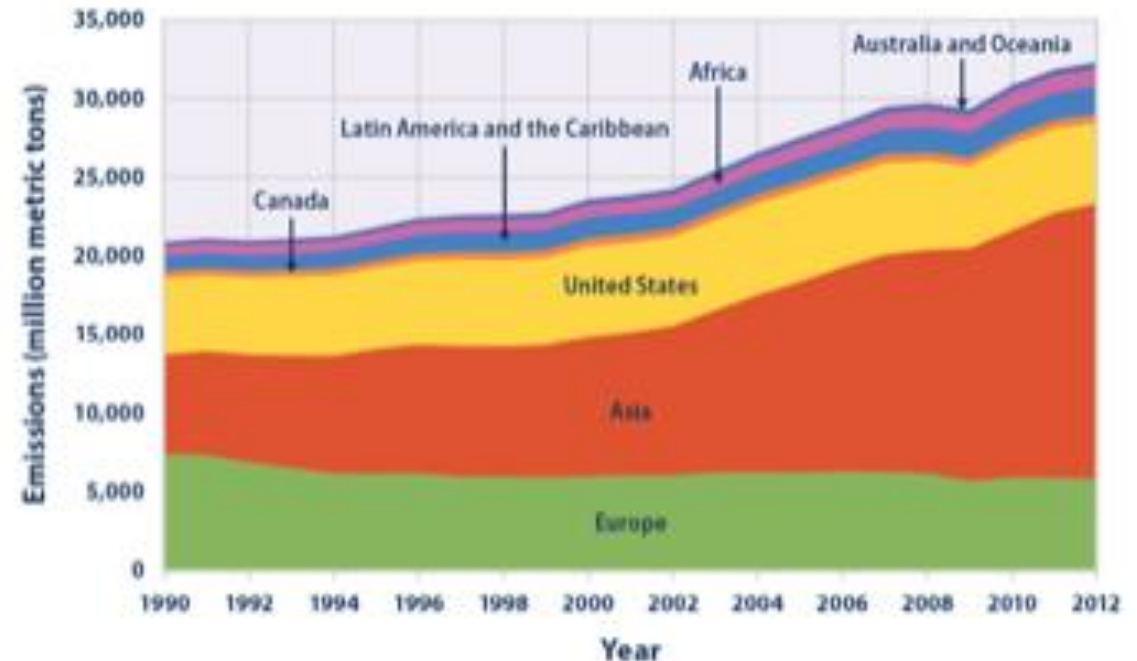
Carbon dioxide emission in Asia

Vehicle in Use by Regions (2005-2015)



Source: International Organization of Motor Vehicle Manufacturers (2015)




Carbon Dioxide emission by regions (1990-2012)












Source: WRI Climate Analysis Indicators Tool 2.0,





Asia is the fastest growing region of automobile and CO2 emissions





Approach of EST : A-S-I and Cross cutting measures

EST Approach	Goals in Bangkok Declaration	Example
<p>AVOID</p>  <p>TRANSIT ORIENTED DEVELOPMENT www.shutterstock.com - 704602960</p>  <p>www.shutterstock.com - 198055214</p>  <p>www.shutterstock.com - 130396826</p>	<p>1. Integrating land-use and transport planning processes and related institutional arrangements at the local, regional, and national levels</p>	<ul style="list-style-type: none"> • Singapore's successful land-use transport integration led way to the city's world class transport system, along with TDM policies
	<p>2. Achieve mixed-use development and medium-to-high densities along key urban corridors</p>	<ul style="list-style-type: none"> • High dense mixed use developments along mass transit corridors in Hong Kong
	<p>3. Supporting Information and Communications Technologies (ICT), to reduce unneeded travel</p>	<ul style="list-style-type: none"> • ICT enabled parking meters in Singapore help reduce empty miles driven in search of parking

EST Approach	Goals in Bangkok Declaration	Example
 <p>www.shutterstock.com · 144058351</p>	<p>4. Require Non-Motorized Transport (NMT) components in transport master plans in all major cities and prioritize NMT transport infrastructure investment</p>	<ul style="list-style-type: none"> NMT increasingly become part of city master plans in Indian cities – New Delhi, Aizwal, Mumbai, etc.
 <p>www.shutterstock.com · 489025282</p>	<p>5. Improve public transport services including high quality and affordable services on dedicated infrastructure</p>	<ul style="list-style-type: none"> 164 cities worldwide have built bus rapid transit (BRT) systems, carrying close to 33 million passengers a day – NCE2018 report
 <p>www.shutterstock.com · 722719189</p>	<p>6. Reduce urban mode share of private motorized vehicles through Transportation Demand Management (TDM) measures</p>	<ul style="list-style-type: none"> TDM measures adopted by Singapore, Hong Kong, Japan
 <p>www.shutterstock.com · 220559419</p>	<p>7. Achieve shifts to sustainable modes of inter-city passenger and goods transport for both passenger and freight movement</p>	<ul style="list-style-type: none"> India's Dedicated Freight Corridor aims to shift freight movement from roads to more sustainable railways by building dedicated rail tracks

EST Approach	Goals in Bangkok Declaration	Example
<p>IMPROVE</p> 	<p>8. Diversify towards more sustainable transport fuels and technologies like electric vehicles based on electricity generated from renewable sources, hybrid technology, and natural gas</p>	<ul style="list-style-type: none"> Chinese consumers are on track to buy more than 1 million electric vehicles (EVs) 2018, sales grew by 53% in 2017
	<p>9. Set progressive, appropriate, and affordable standards for fuel quality, fuel efficiency, and tailpipe emissions for all vehicle types</p>	<ul style="list-style-type: none"> Progressively stringent norms adopted in India – Bharat stage (BS) IV currently adopted and to adopt BS VI by 2020
	<p>10. Establish effective vehicle testing and compliance regimes, like vehicle registrations and inspection and maintenance requirements</p>	<ul style="list-style-type: none"> Strict vehicle inspection schemes followed in Japan and Singapore
	<p>11. Adopt Intelligent Transportation Systems (ITS)</p>	<ul style="list-style-type: none"> Electronic Road Pricing (ERP) in Singapore to discourage vehicle use
	<p>12. Achieve improved freight transport efficiency, including road, rail, air, and water, through policies, programs, and projects</p>	<ul style="list-style-type: none"> Need for a Regional Cooperation Agreement on Green Freight in Asia

EST Approach	Goals in Bangkok Declaration	Example
<p>CROSS-CUTTING</p> 	<p>13. Adopt a zero-fatality policy with respect to road, rail, and waterway safety and implement appropriate traffic measures and better post-accident care</p>	<ul style="list-style-type: none"> • Pedestrian zone project, green zone, child safety policies in Korea – cut traffic fatalities for children by almost one-third in only 5 years, according to 2011 statistics
	<p>14. Promote monitoring of the health impacts from transport emissions and noise, assess the economic impacts of air pollution and noise, and devise mitigation strategies</p>	<ul style="list-style-type: none"> • Chiba (Japan) has 19 monitoring stations to cover a population of 96,000.
	<p>15. Establish country-specific, progressive, health-based, cost-effective, and enforceable air quality and noise standards, and mandate monitoring and reporting</p>	<ul style="list-style-type: none"> • National level Environmental Quality Standards for various air pollutants have been adopted by Japan and has 1,660 ambient air pollution and 441 roadside air pollution monitoring stations
	<p>16. Implement sustainable low-carbon transport initiatives to mitigate the causes of global climate change and to fortify national energy security, and to report the inventory of all greenhouse gases emitted from the transport sector in the National Communication to the UNFCCC</p>	<ul style="list-style-type: none"> • By 18 April 2016, a total of 190 Parties had communicated an INDC (97% of all Parties to the UNFCCC) with a total CO2 coverage of 94.6%, many of these countries were submitting their first INDCs

EST Approach	Goals in Bangkok Declaration	Example
<p>Cross-cutting</p>  <p>shutterstock.com · 677475589</p>	<p>17: Adopt social equity as a planning and design criteria in the development and implementation of transport initiatives</p>	<ul style="list-style-type: none"> Car free communities in Japan -Chiba City developed people friendly infrastructure to enhance quality of life
	<p>18. Encourage innovative financing mechanisms for sustainable transport infrastructure and operations</p>	<ul style="list-style-type: none"> Toronto has raised US\$309 million for public facilities through 'density-for-benefit' agreements
 <p>Photo by Lloyd Wright</p>	<p>19. Encourage widespread distribution of information and awareness on sustainable transport to all levels of government and to the public</p>	<ul style="list-style-type: none"> Car free days adopted across various Asian cities – Jakarta, Delhi, Mumbai, Singapore, etc.
 <p>www.shutterstock.com - 1034726555</p>	<p>20. Develop dedicated and funded institutions that address sustainable transport-land use policies and implementation</p>	<ul style="list-style-type: none"> Cities/ states in India are creating institutions solely to look into transport issues – eg. Directorate of Urban Land Transport (DULT) by Karnataka, Unified Metropolitan Transport Authority for Hyderabad Metropolitan region
		

Co-benefits of EST – BRT



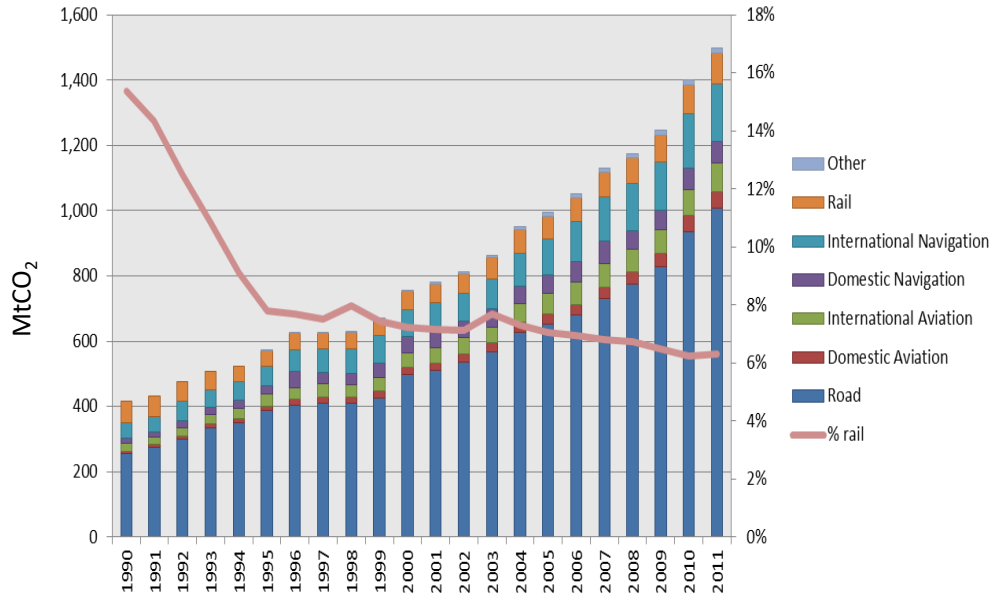
Example of Bus Rapid Transit in Guangzhou, China

Economic Benefits	Social Benefits	Environmental Benefits <small>(Source: Pinterest)</small>
<ul style="list-style-type: none"> • 35 million hours saved annually for BRTS commuters • Benefit to the economy of US\$16 million from time savings (Hughes 2011) 	<ul style="list-style-type: none"> • Reduced out of pocket bus trip costs, by a factor of almost two • 50% increase in cycling in some areas, improved safety for pedestrians (UNFCCC 2010) 	<ul style="list-style-type: none"> • Estimated 45,000 tonnes of carbon savings in 2010 • Carbon savings expected to increase by 100,000 metric tonnes by year 2019 (Hughes, Colin and Zhu, Xianyuan 2011)
<ul style="list-style-type: none"> • USD \$14 million savings in due to increased efficiency and fuel savings (Centre for Clean Air Policy, 2012) 		<ul style="list-style-type: none"> • Reduces the amount of particulate matter by an estimated average of four metric tonnes annually (Centre for Clean Air Policy, 2012)

The higher sustainability of rail

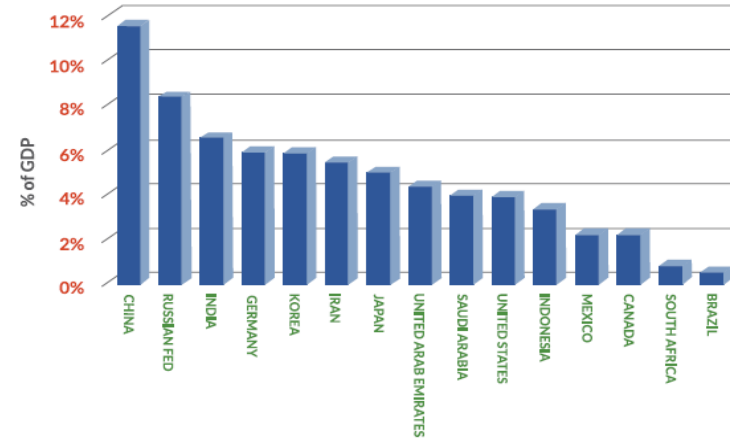
Urban road-related transport is responsible for the majority of CO₂ and NO_x emissions. Particulate matter, whose main source is road vehicles, leads to diseases and high rates of mortality.

The modal shift to urban rail can drastically reduce these impacts.

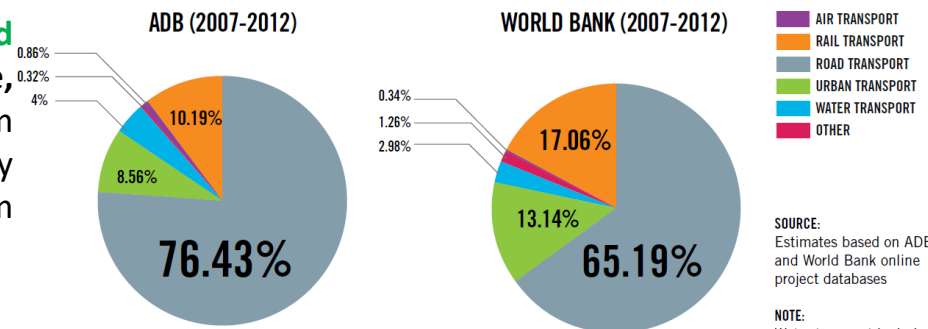


Total CO₂ emissions from transport in Asia have increased almost four fold from 1990 to 2011. In the same timeframe, emissions from railways have been halved, dropping from nearly 16% of total transport emissions to about 6%, mainly due to better energy efficiency, substantial reduction of steam traction and more use of electrical traction systems.

COST OF MORTALITY FROM OUTDOOR PM 2.5 EXPOSURE -AS % OF GDP (MEDIAN ESTIMATES), 2010, 15 LARGEST CO₂ EMITTERS



ADB and World Bank investment in transport, 2007-2012



SOURCE: Estimates based on ADB and World Bank online project databases
NOTE: Water transport includes both maritime and inland water transport projects.

Benefits of EST - high volume passenger & freight transport



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Economic benefits	Social benefits	Environmental benefits
<ul style="list-style-type: none"> Road and parking cost savings 	<ul style="list-style-type: none"> Improved accessibility and mobility 	<ul style="list-style-type: none"> Energy/ fuel savings
<ul style="list-style-type: none"> Reduced congestion -Time savings, increased productivity 	<ul style="list-style-type: none"> Transport for all – more equitable, livable cities 	<ul style="list-style-type: none"> Improved air quality, reduced green house gas emissions
<ul style="list-style-type: none"> Fuel cost savings, improved energy security 	<ul style="list-style-type: none"> Increased affordability, mixed income neighborhoods 	<ul style="list-style-type: none"> Carbon savings
<ul style="list-style-type: none"> Efficient movement of people and goods 	<ul style="list-style-type: none"> Increased safety and security – accident and crime 	<ul style="list-style-type: none"> Ecosystem and health benefits due to improved air quality
<ul style="list-style-type: none"> Reduced transport cost for individuals and businesses 	<ul style="list-style-type: none"> Improved health conditions – reduced air pollution, increased use of active modes of transport 	<ul style="list-style-type: none"> Sustainable land consumption- compact developments