Torwards Sustainable Urban Mobility in Developing Countries

Debashish Bhattacharjee

20 February 2019

A Global Vision to Promote Sustainable Urban Mobility

Sustainable Development Goals
SDG 11 : Make cities inclusive, safe, resilient and sustainable

Target 11.2 : By 2030, provide access to **safe, affordable, accessible and sustainable transport systems for all**, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, and children, persons with disabilities and older persons.

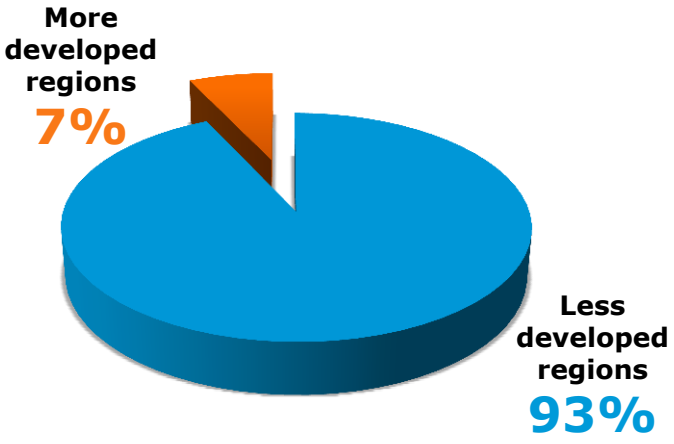
Indicator : Proportion of the population that has **convenient access to public transport** by sex, age and persons with disabilities

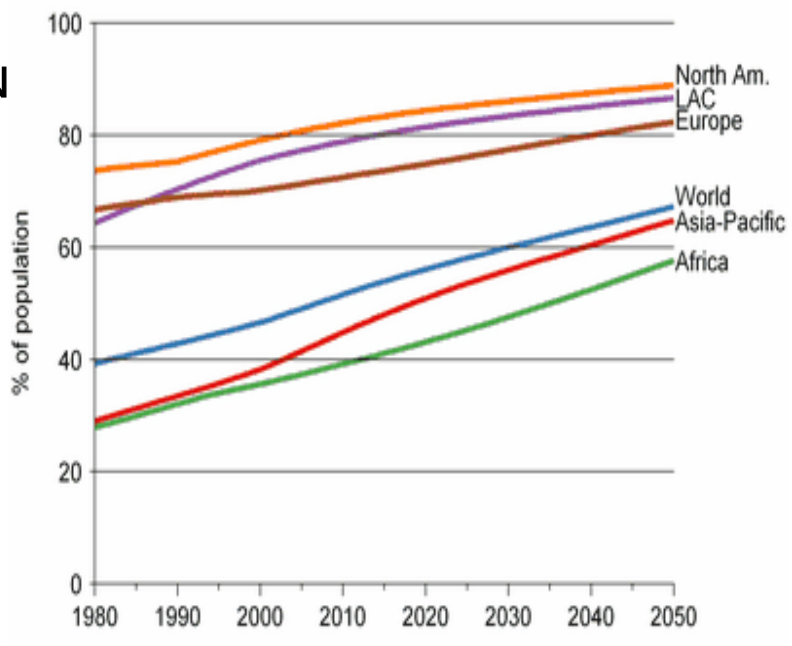
Paris Agreement
National Commitments to Low Carbon Transport

New Urban Agenda
Habitat III : Localising the SDGs; Safe, inclusive, transport – walking, cycling and Public Transport

World urbanisation trends

PERCENTAGE GROWTH OF URBAN POPULATION BY REGION (2005-2020)

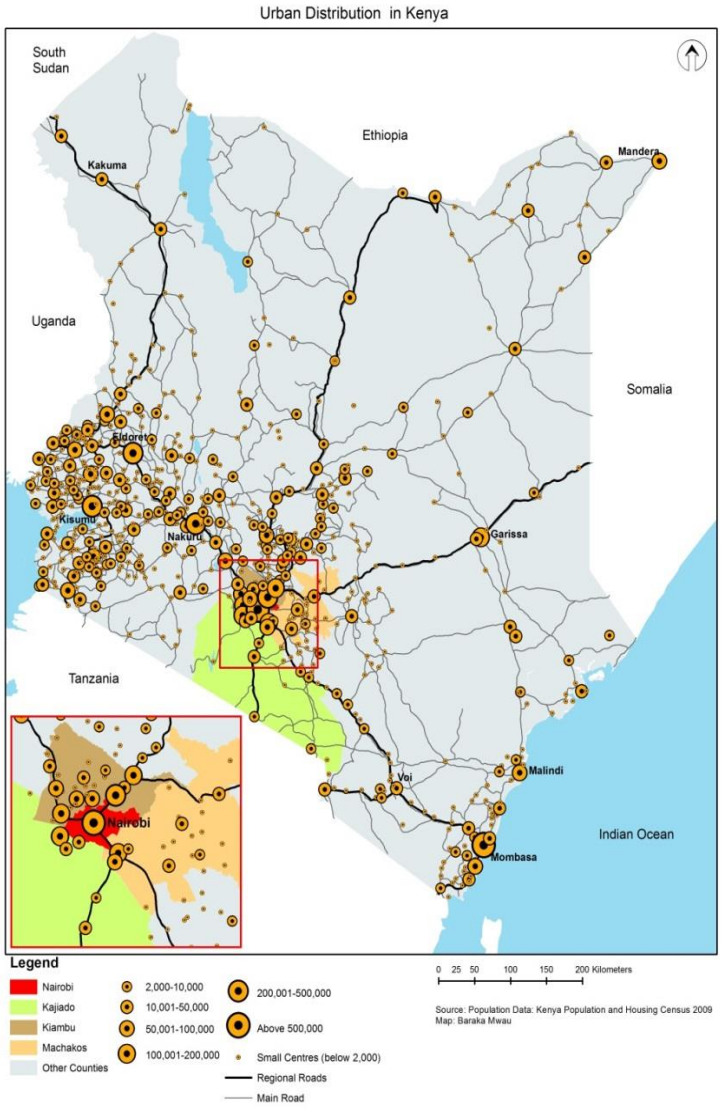




- The world is rapidly urbanizing: from 37% in 1995 to 60% in 2030
- Africa and Asia are urbanizing fastest

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

New spatial configurations in Africa: metropolitan areas



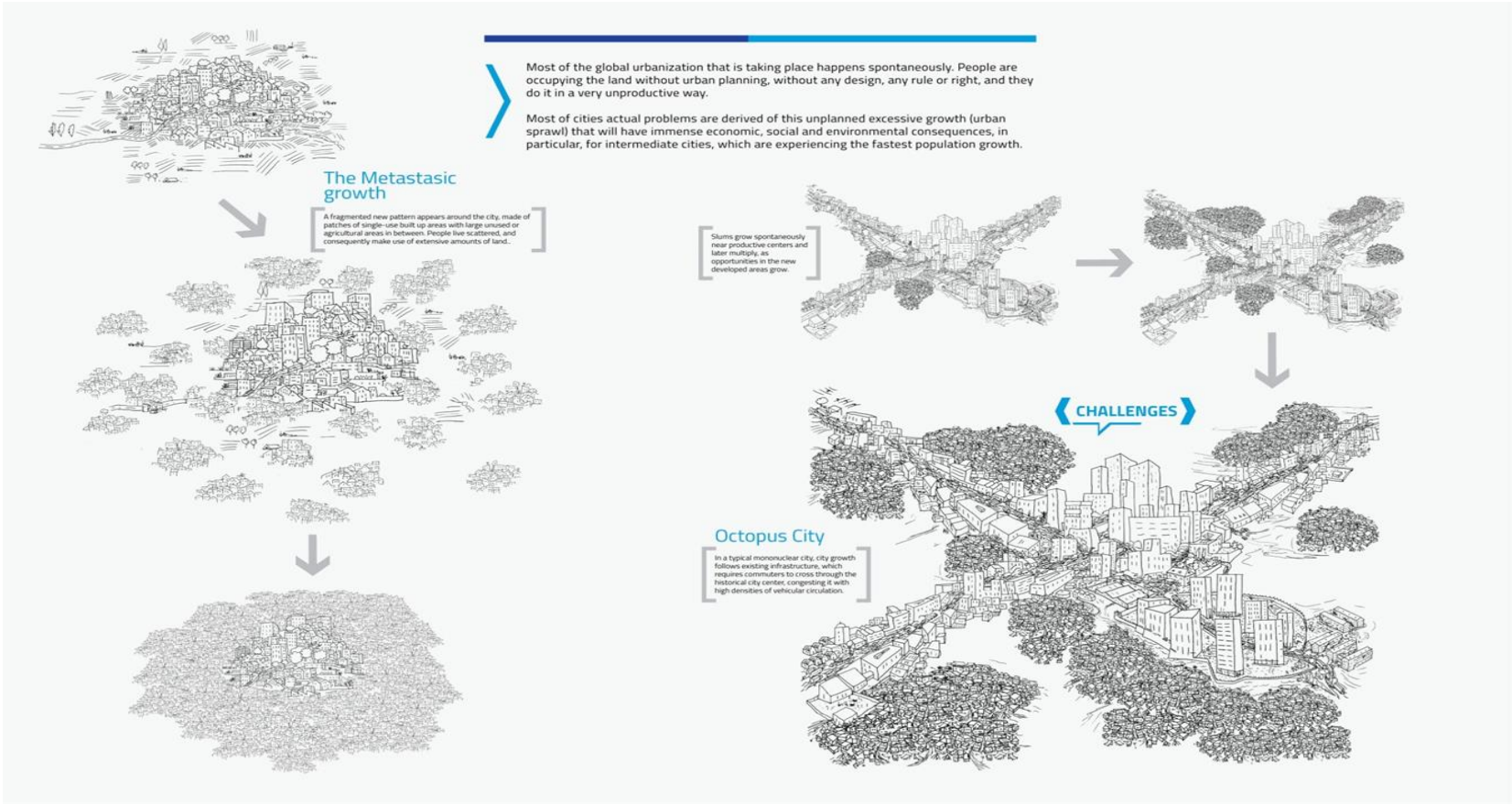
New spatial conÞgurations: city clusters, large urban agglomerations, urban corridors and city-regions

Rural Urbanization: Small and Intermediate Towns in vicinity of bigger towns become spatially "connected"

Challenge: Often unplanned city expansion/ lack of public transport connectivity

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

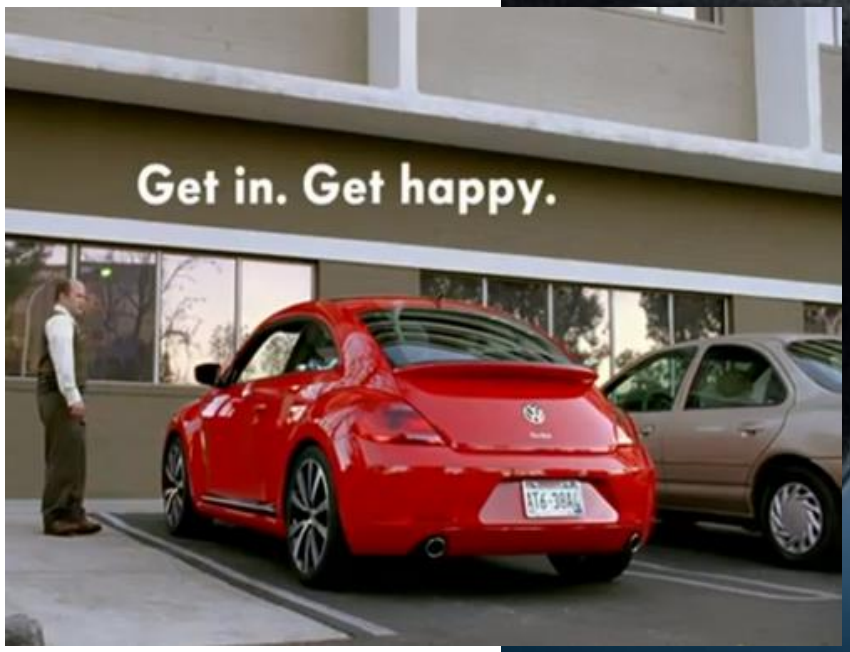
Spontaneous and unplanned urban development



The city for the car and of the car

- Low density, urban sprawl, mono-functional use
- **Car-based** transit corridors contributing to traffic congestion
- **No Integration**: Often separate mobility systems
- **NMT users forgotten** even though they form majority
- People walk sometime up to 4 hours a day out of choice not preference

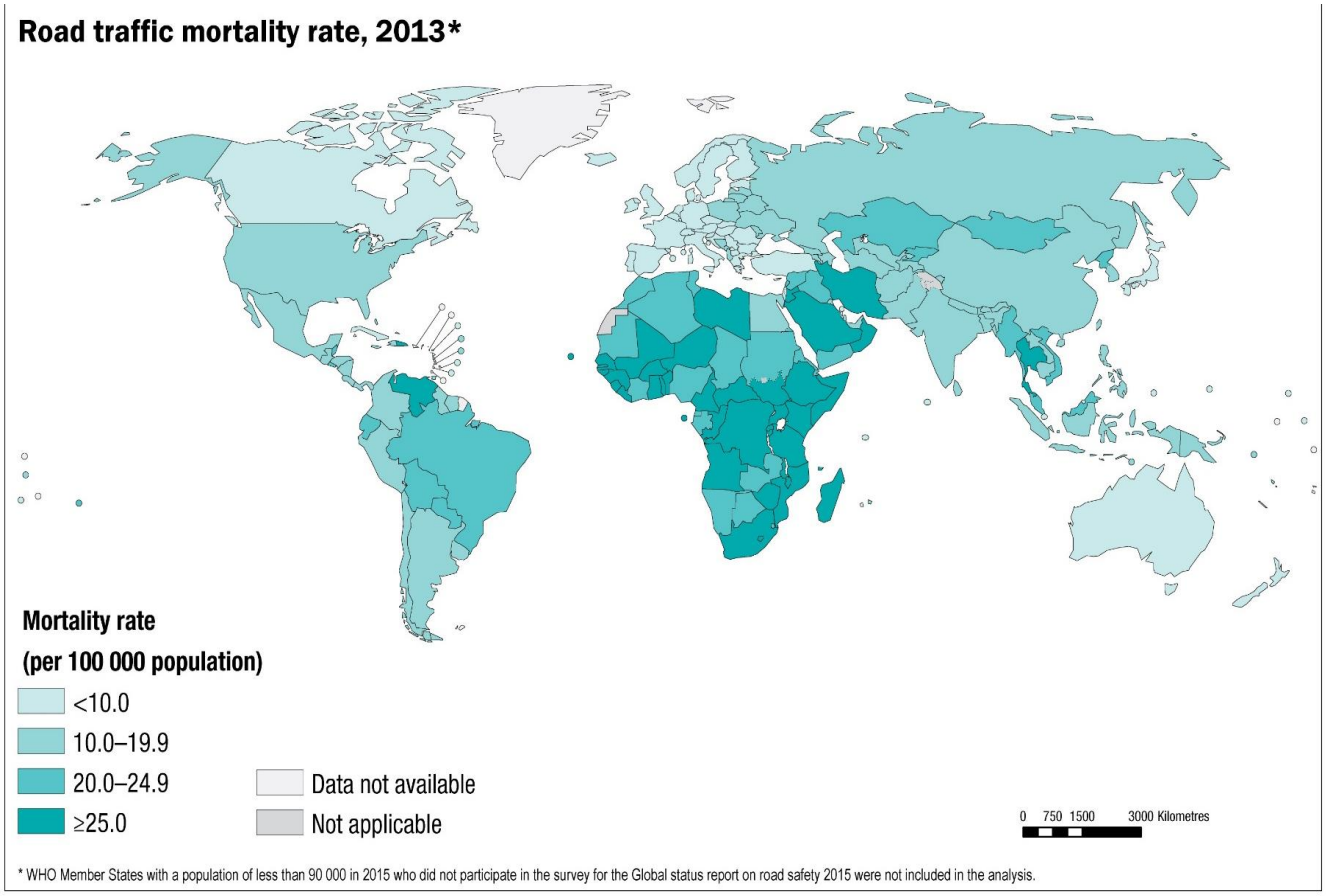
.....But the car dominates....



A City In Your Hands?

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

Road safety: a critical issue in developing countries



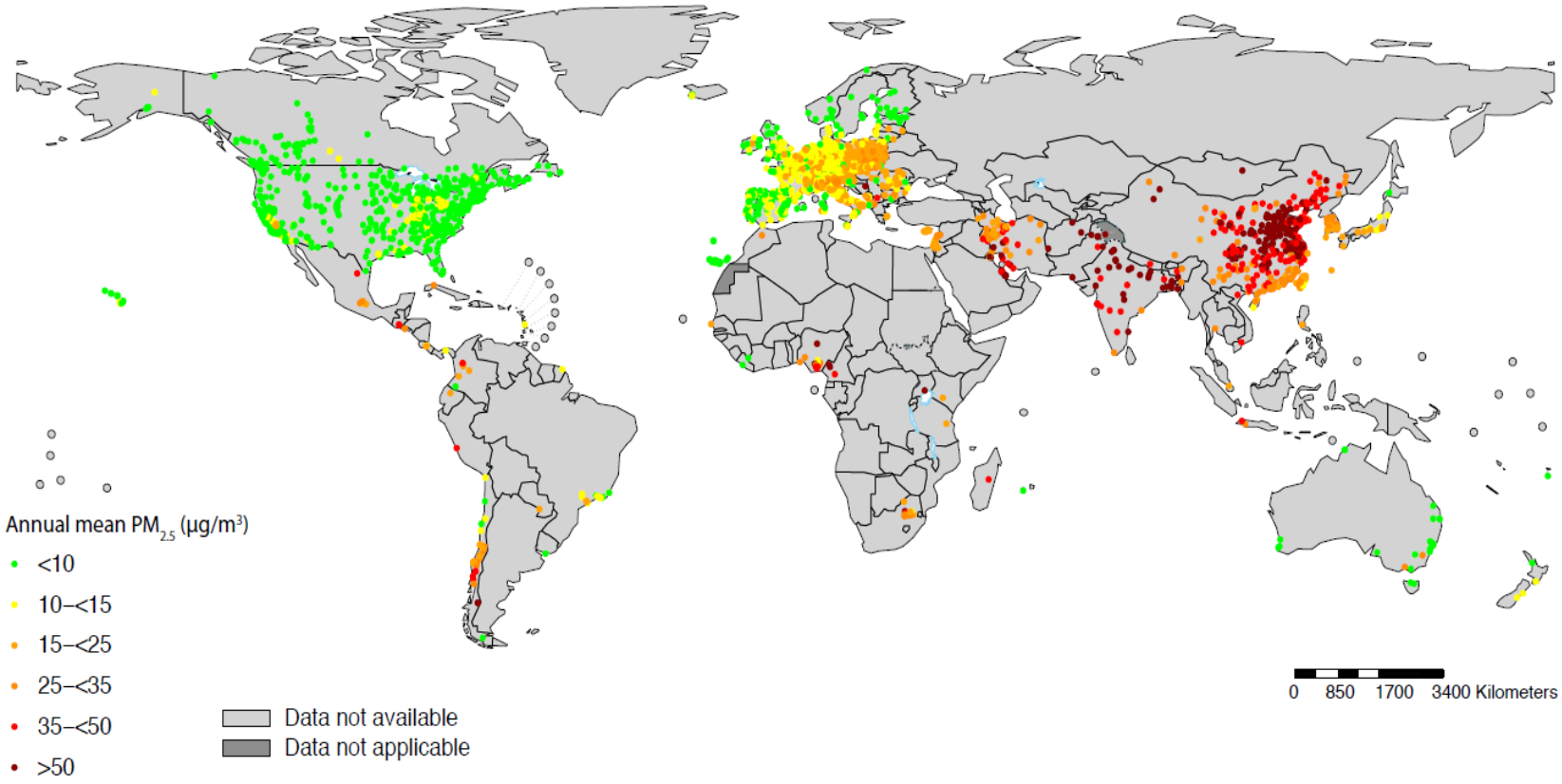
Data Source: World Health Organization
Map production: Information Evidence and Research (IER)
World Health Organization

World Health Organization

1.3 million people die on the world's roads and 20 - 50 million are injured every year.
The risk of dying in a road traffic crash is more than 3 times higher in low-income countries than in high-income countries.

SUM BIO '19 SUSTAINABLE URBAN MOBILITY CONGRESS

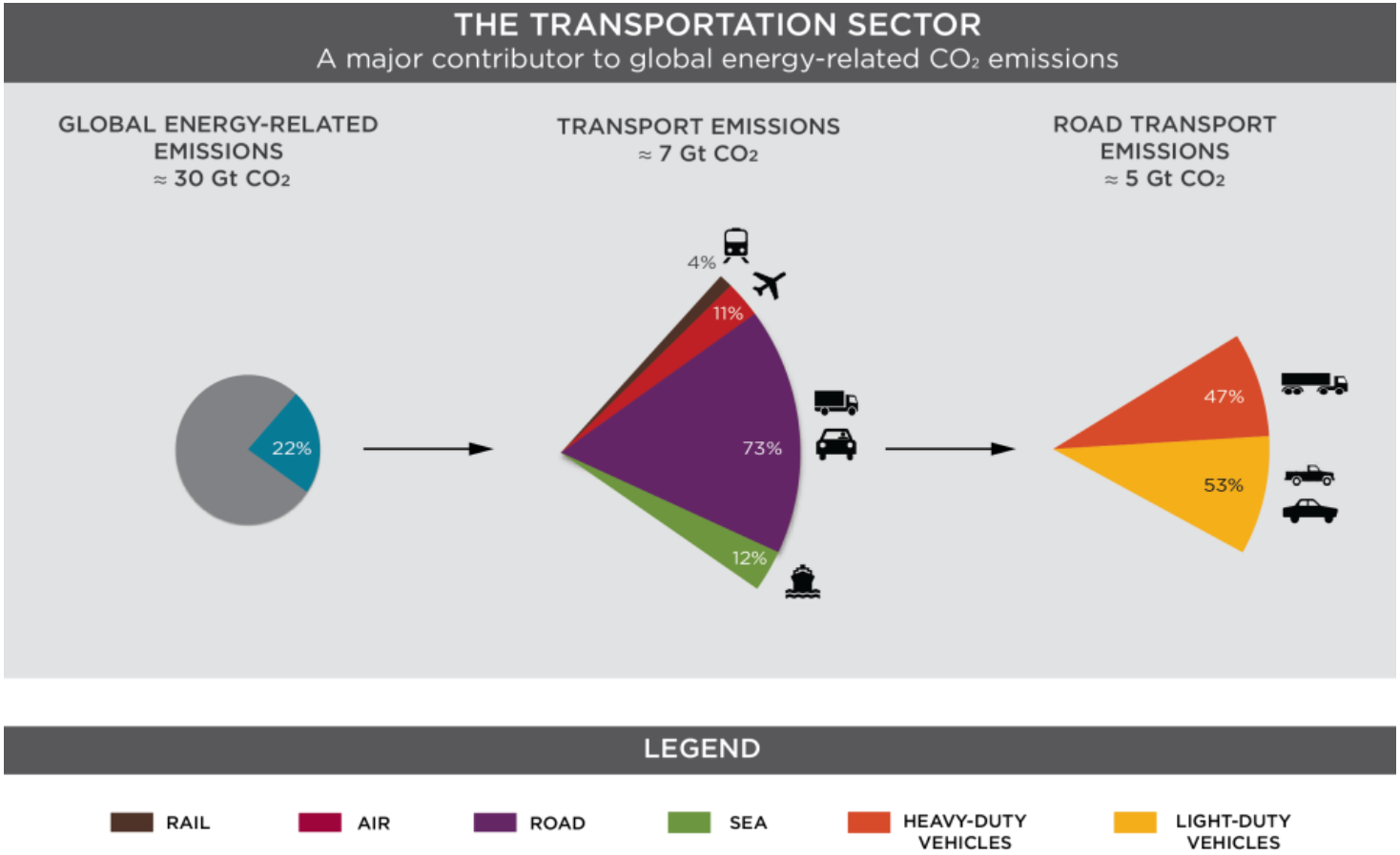
Ambient air pollution – a growing problem



- 4.2 million estimated premature deaths from ambient air pollution;
- Highest Air Pollution in S.E and South Asian cities; probably increasing in Africa but measurement lacking – *Source WHO*

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

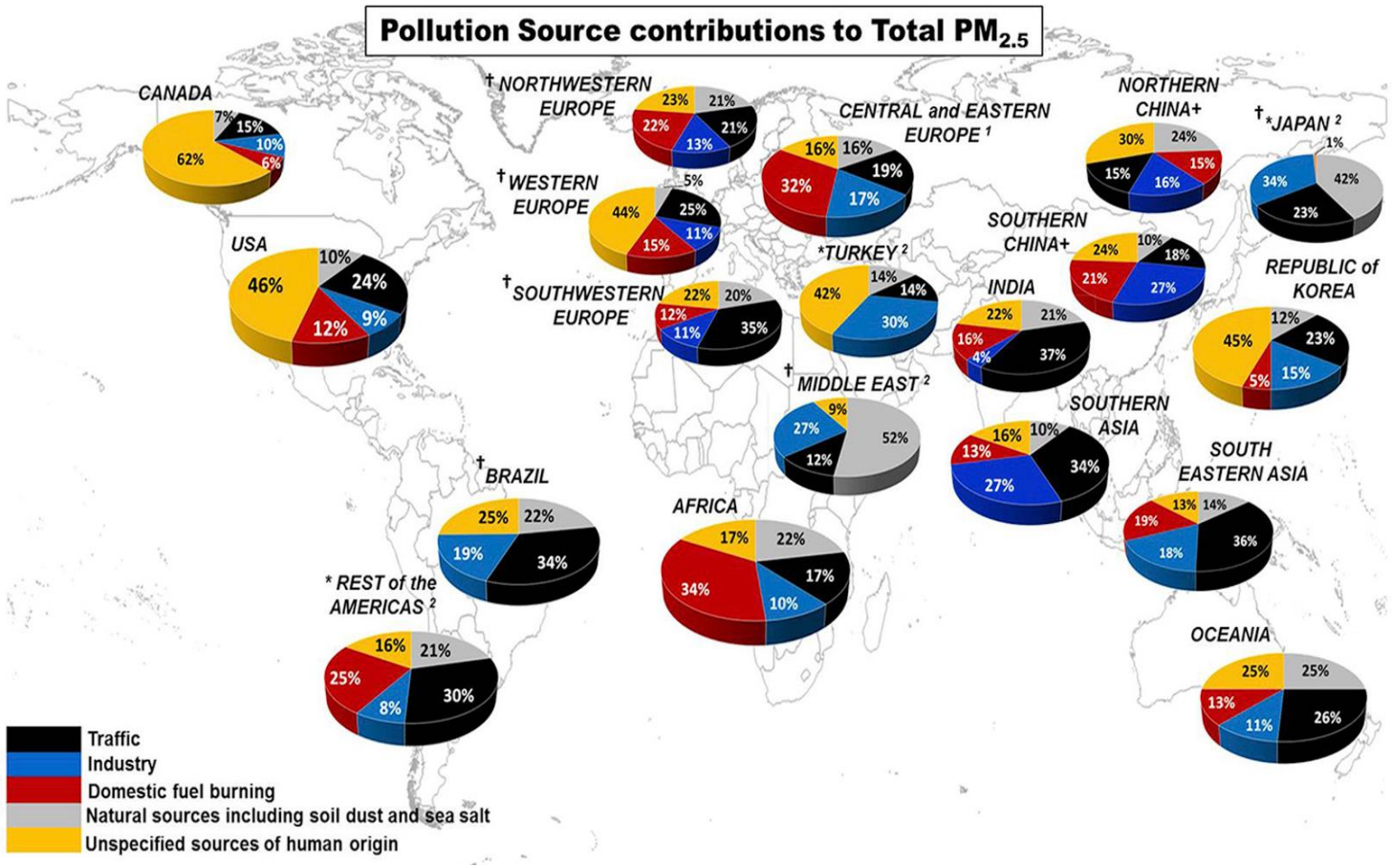
Contribution of transportation to emissions (and pollution)



Sources:
ICCT (2014). Global Transportation Roadmap Model. Version 2.0. More information available at http://www.theicct.org/global-transportation-roadmap-model.
IEA (2012). CO2 Emissions from Fuel Combustion: Highlights. 2012 edition. Retrieved from https://www.iea.org/co2highlights/co2highlights.pdf.

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

Where does the pollution come from ?



Source: Karagulian, F. *et al.* (2015) 'Contributions to cities' ambient particulate matter (PM): A systematic review of local source contributions at global level', *Atmospheric Environment*. doi: 10.1016/j.atmosenv.2015.08.087 (presented by UNEP 2018).

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

Striving towards a more inclusive urbanisation

And Everyone Benefits !

Striving towards a more inclusive urbanisation

A vision of inclusive transport: streets for people

Better facilities for walking and cycling; BRT an effective solution (Dar Es Salam Tanzania)

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

Inclusive Mobility = Universal Access

Design for people with disabilities : segregation, low gradients, illumination…… (Right Picture : Outside City Hall, Bilbao)

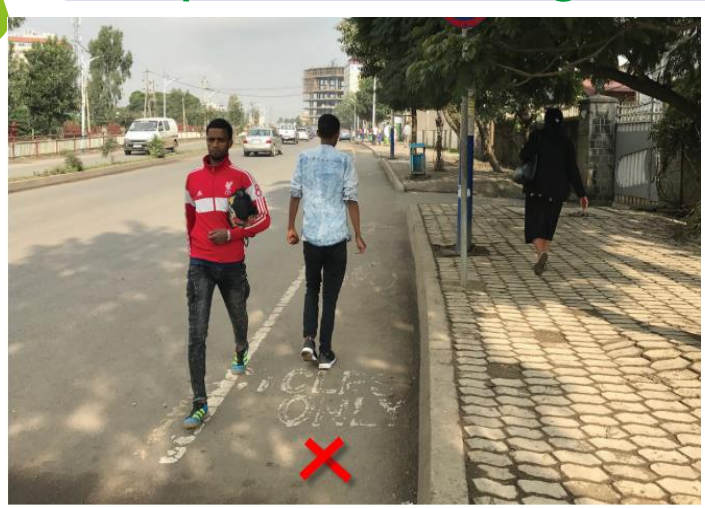
SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

A Vision of Inclusive Transport: integrating public transport with walking and cycling

Universally Accessible Vehicles

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

A Vision of Inclusive Transport: integrating public transport with walking and cycling

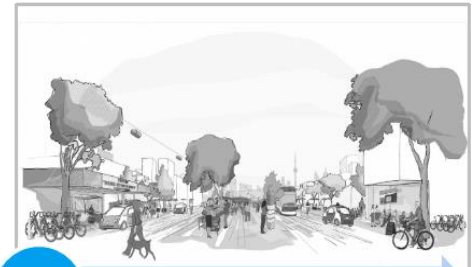


Cycle Tracks should be separated from high speed vehicular traffic

"Eyes on the Street" improve security; Organized vending creates jobs

Source: UN-Habitat and ITDP : Streets for walking and cycling ; Designing for safety, accessibility and comfort in African Cities

Making it happen: participatory processes (SUMP)



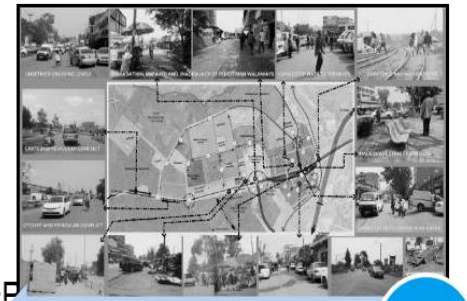
Develop a common vision

Analyse mobility situation
and develop scenarios

Engage all transport modes/
Identify mobility challenges

Stakeholder Validation workshop/
Agree on clear responsibilities & budget

Propose Action Plan



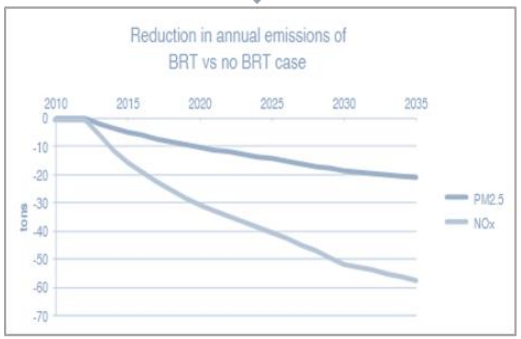
Problem Map/
Identify Mobility Priorities

SUMBIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

Results : Inclusive Accessibility, Safety and Reduced Emissions

Nairobi Bus Rapid Transit

- BRT system in Nairobi will result in benefits in the range of $42 to $51 million per year in 2035
- Advanced technology choices result CO2 emissions reductions in the range of 600,000 cumulative tons by 2035



Kiambu Transport Policy

Expected Outcomes / 15 year target:

- Increased mode share of 90% of walking, cycling and PT in 15 years
- Zero fatalities related to road crashes
- 90% reduction of emissions of GHG from transport system
- Car VKT no more than baseline

Outcome	5-year target	10-year target	15-year target
Increased mode share of walking, cycling, and public transport	25% of final target	50% of final target	At least 90% of all trips
Improved road safety	25% Reduction of fatalities and injuries from crashes	At least 75% Reduction of fatalities and injuries from crashes	Zero fatalities related to road crashes
Reduced number of km travelled by private cars	25% reduction	75% reduction	Private car VKT no more than baseline levels
Reduced environmental impact	25% reduction	75% reduction	90% reduction of emission of greenhouse gases from transport system

Ruiru SUMP

Action Plan - Ruiru Boulevard:

- Reduce through traffic by diverting
- Enhance human-friendly greening through appropriate landscaping
- Renew street furniture for public use
- Enhance safety - crossing levels, speed breakers, and lighting

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

UN-Habitat Global Experiences

EMPOWER Rewarding Change	Using positive incentives to encourage citizens to reconsider their travel choices and reduce the extent of using conventionally fuelled vehicles.
solutions	SOLUTIONS aims to support the exchange on innovative and green urban mobility solutions between cities from Europe, Asia, Latin America and the Mediterranean. Promotes the “Urban Electric Mobility Initiative” (UN-Habitat)
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety	Urban Pathways - Supporting Low Carbon Plans for Urban Basic Services in the context of the New Urban Agenda (Brazil, India, Kenya, Vietnam)
GEF-SUSTRAN	Reduce growth in private motorized vehicles, thus decreasing traffic congestion and greenhouse gas (GHG) emissions. Introducing BRT in Addis Ababa, Kampala and Nairobi integrated with walking and cycling
FUTURE-RADAR	Create and implement research and innovation strategies for a sustainable and competitive European road transport system. Promotes Electric Mobility.

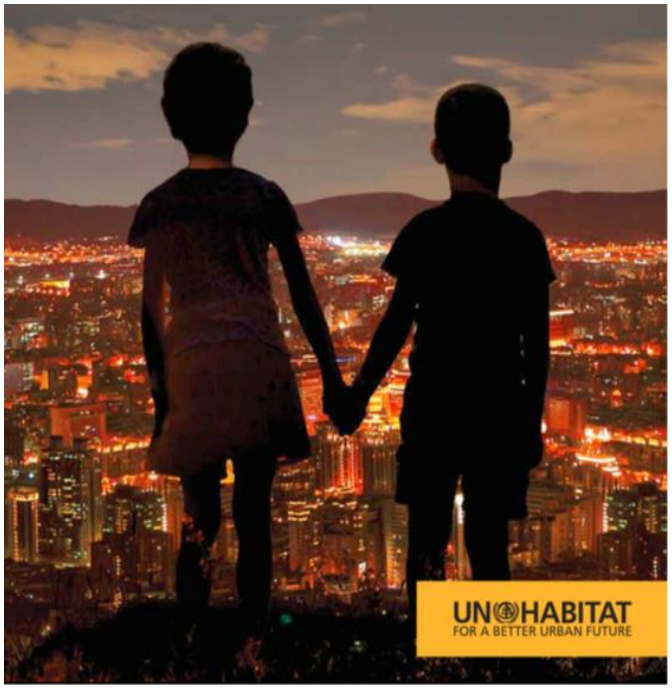
Bringing it together: Global - Local - Global

Key Actors : National and Local Governments, Civil Society, Academic and Research Institutions, Industry

SUMBIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

Conclusions and Recommendations

- Developing country cities are growing: a reason as well as an opportunity for **sustainable mobility**
- National Policy + City Capacity = **sustainable urban mobility**
- **National Policy**: prioritize walking, cycling and public transport; provide fiscal incentives, institute design standards and monitoring requirements (KM of NMT/KM); fuel and vehicle import policies
- **Local Implementation** : participatory and consensus based planning; devise revenue schemes (e.g. parking , congestion charging); capacity building needs.
- **Promote city-city learning**



Thank You for Your Attention

SUM BIO '19
SUSTAINABLE URBAN MOBILITY CONGRESS

SUM BIO '19

SUSTAINABLE URBAN MOBILITY CONGRESS

#SUMBILBAO19

www.sumbilbao19.com

info@sumbilbao19.com