



**HIGH VOLUME  
TRANSPORT**  
APPLIED RESEARCH

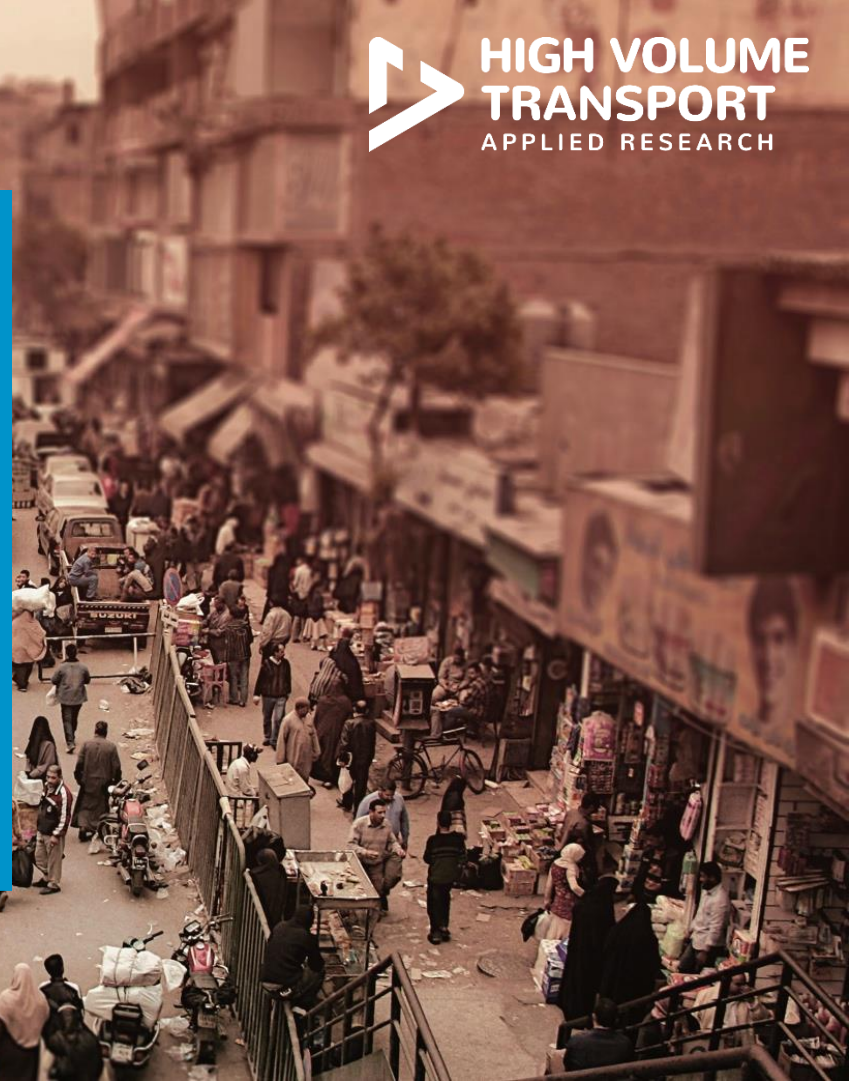
## Towards sustainable mobility in Africa

Holger Dalkmann

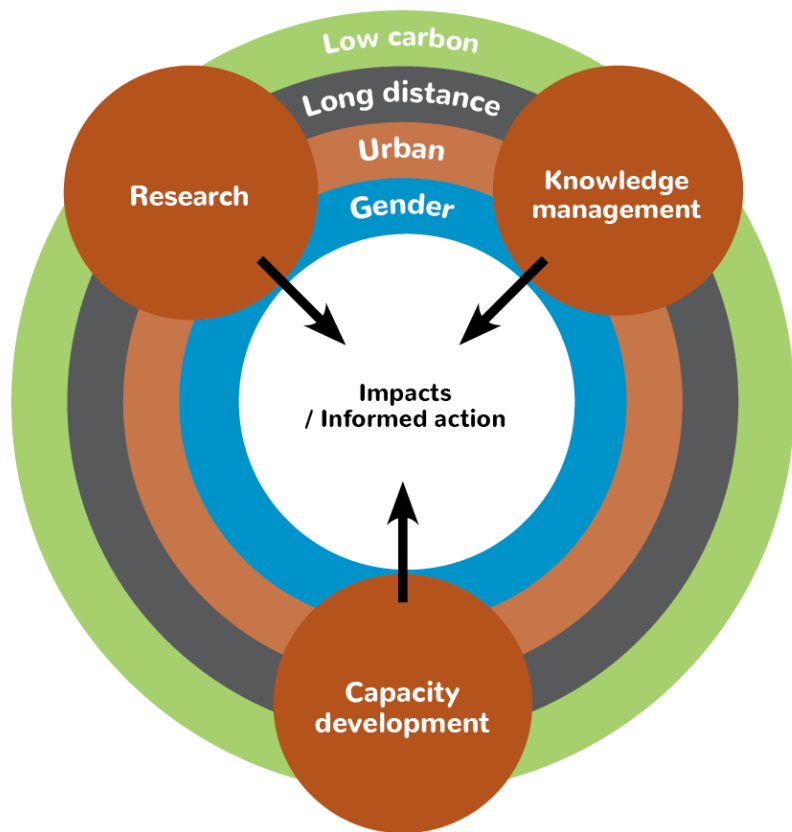
Independent Consultant – Sustain 2030  
Urban Theme Lead, HVT Programme

# DFID High Volume Transport

A five-year research programme funded by DFID will strengthen the evidence base that will support increased access to transport services, more affordable trade routes, and safer, low carbon transport in low income countries.



# Main THEMES AND ACTIVITIES



## 4 research themes

1. Long distance strategic road and rail transport
2. Urban transport
3. Low carbon transport
4. Gender, vulnerable groups and inclusion in high volume transport

## **3 activities**

- i) Research, ii) knowledge management, iii) capacity development

# THE COMMON CHALLENGES (IN AFRICA)



**3- 10% loss of GDP through congestion in African cities**



# The common challenges (in Africa)



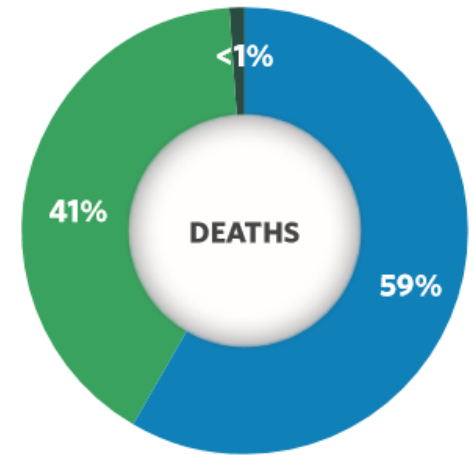
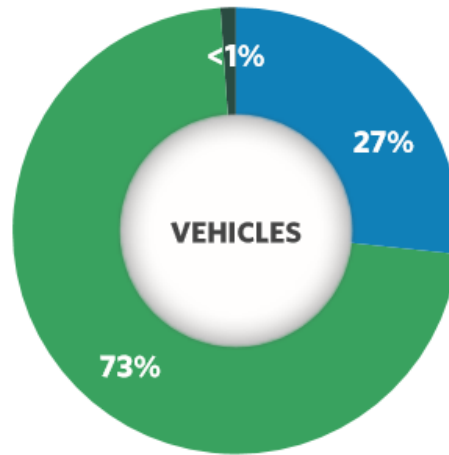
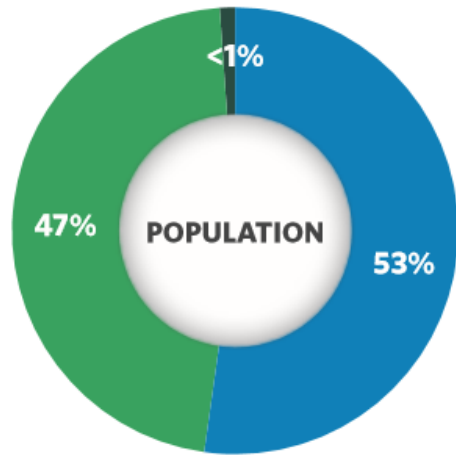
**600 million deaths annually through air pollution**



**200,000 deaths annually through road accidents**

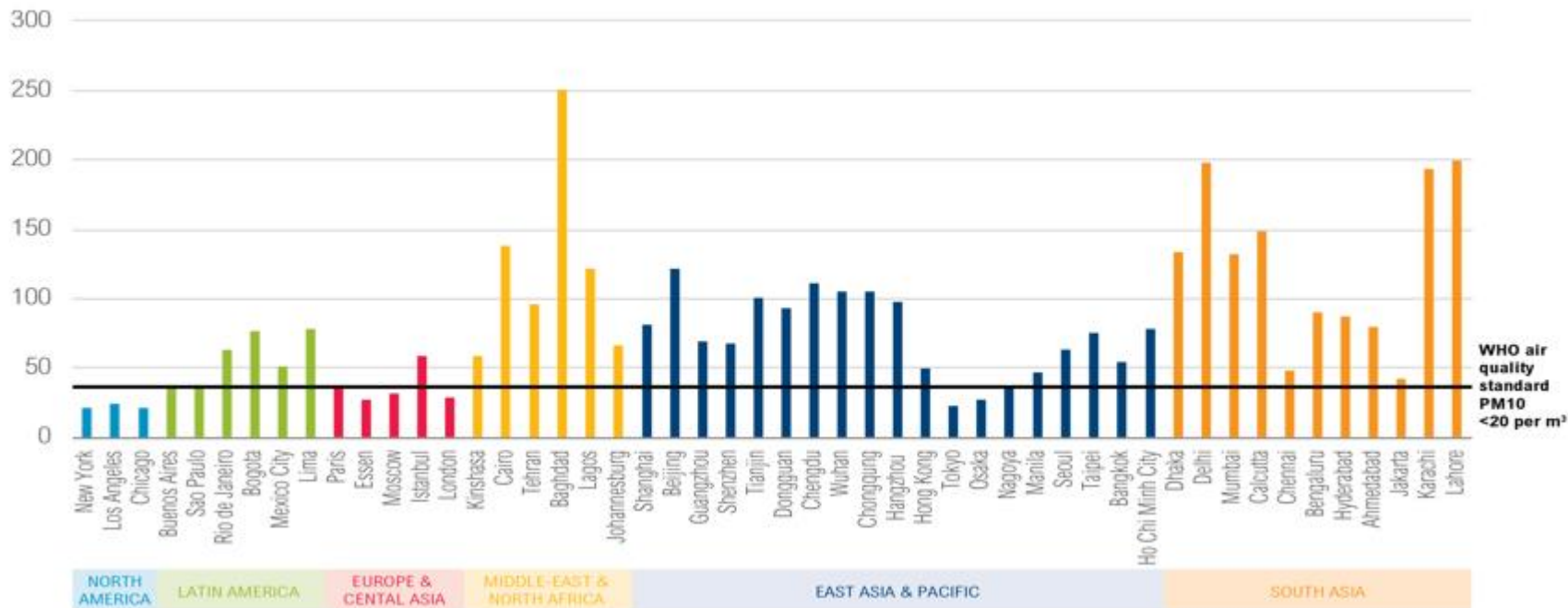
# PROPORTION OF POPULATION, ROAD TRAFFIC DEATHS, AND REGISTERED MOTOR VEHICLES BY COUNTRY INCOME CATEGORY, AFRICAN REGION, 2016

■ Low-income ■ Middle-income ■ High-income

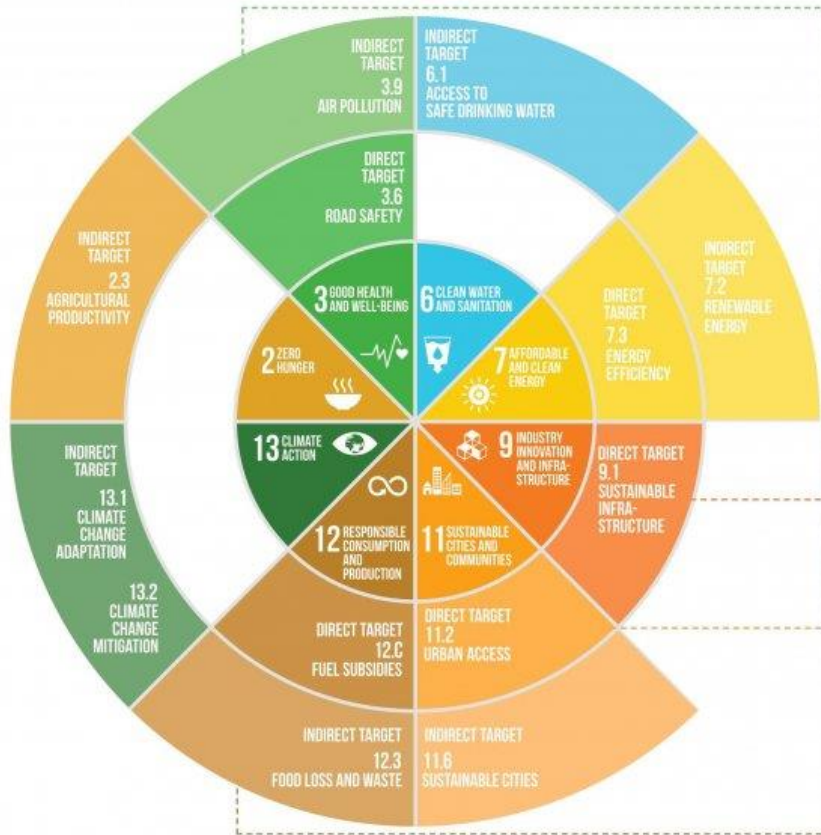


# NONE OF THE WORLD'S TOP 50 CITIES BY POPULATION MEET WHO AIR QUALITY STANDARDS

PARTICULATE MATTER PER M3 FOR TOP 50 CITIES –  
HIGHER PARTICULATE MATTER MEANS WORSE AIR QUALITY



# SUSTAINABLE TRANSPORT AND SDGs



## Transport-related indicators:



Death rate due to road traffic injuries



Proportion of the rural population who live within 2 km of an all-season road



Passenger and freight volumes, by mode of transport



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



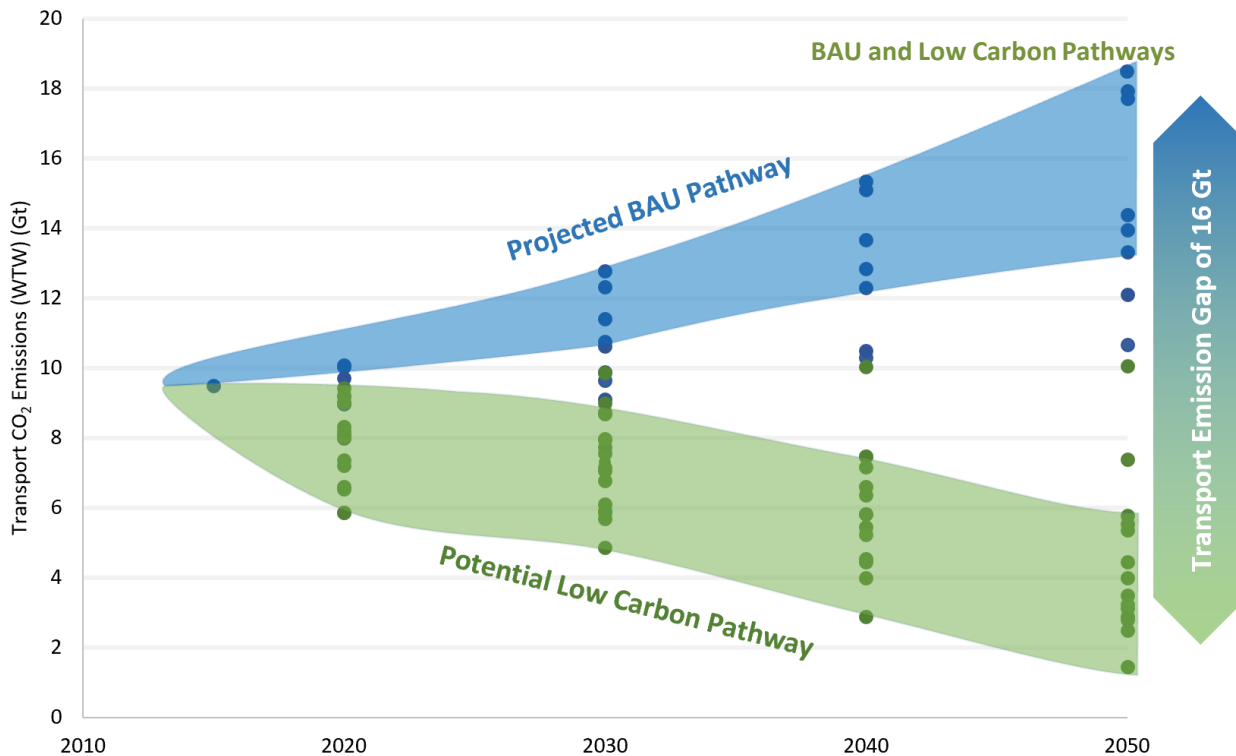
Amount of fossil-fuel subsidies per unit of GDP and as a proportion of total national expenditure on fossil fuels

SAFE  
AFFORDABLE  
UNIVERSAL ACCESS  
RESILIENT  
LOW  
EMISSION/CLEAN/GREEN  
EQUITABLE  
EFFICIENT

*PLAN FOR PEOPLE  
NOT FOR CARS*

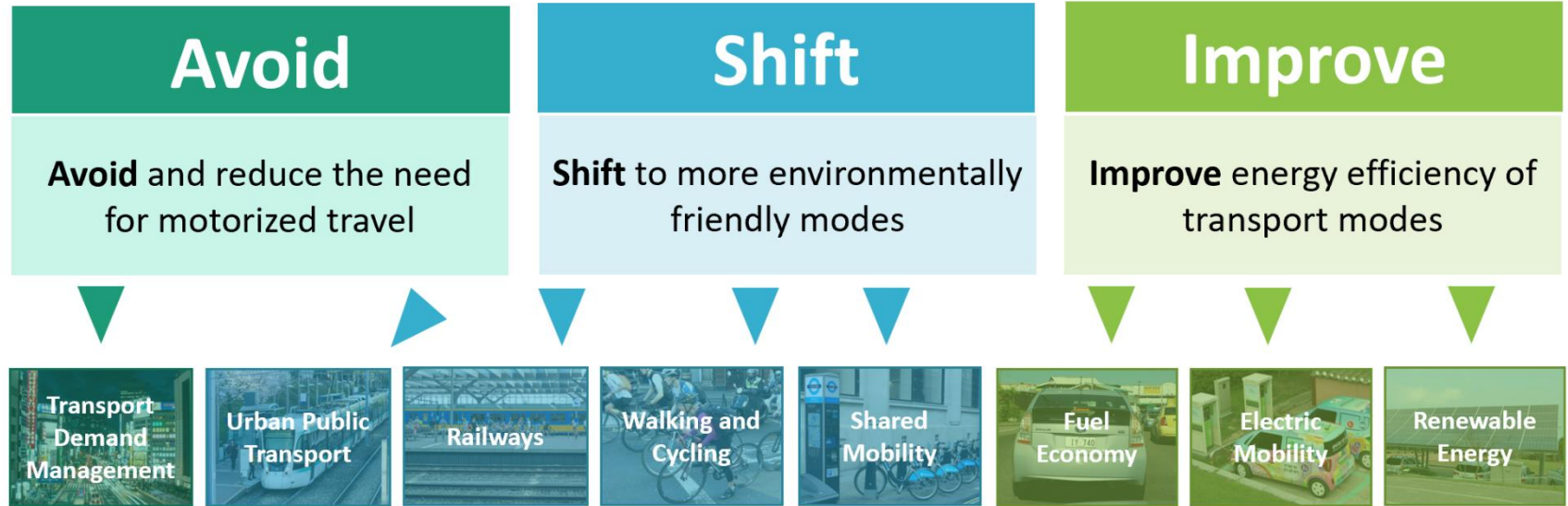


# EMISSION GAP GROWING, BUT LOW CARBON TRANSPORT HAS HIGH MITIGATION POTENTIAL



Source: Various

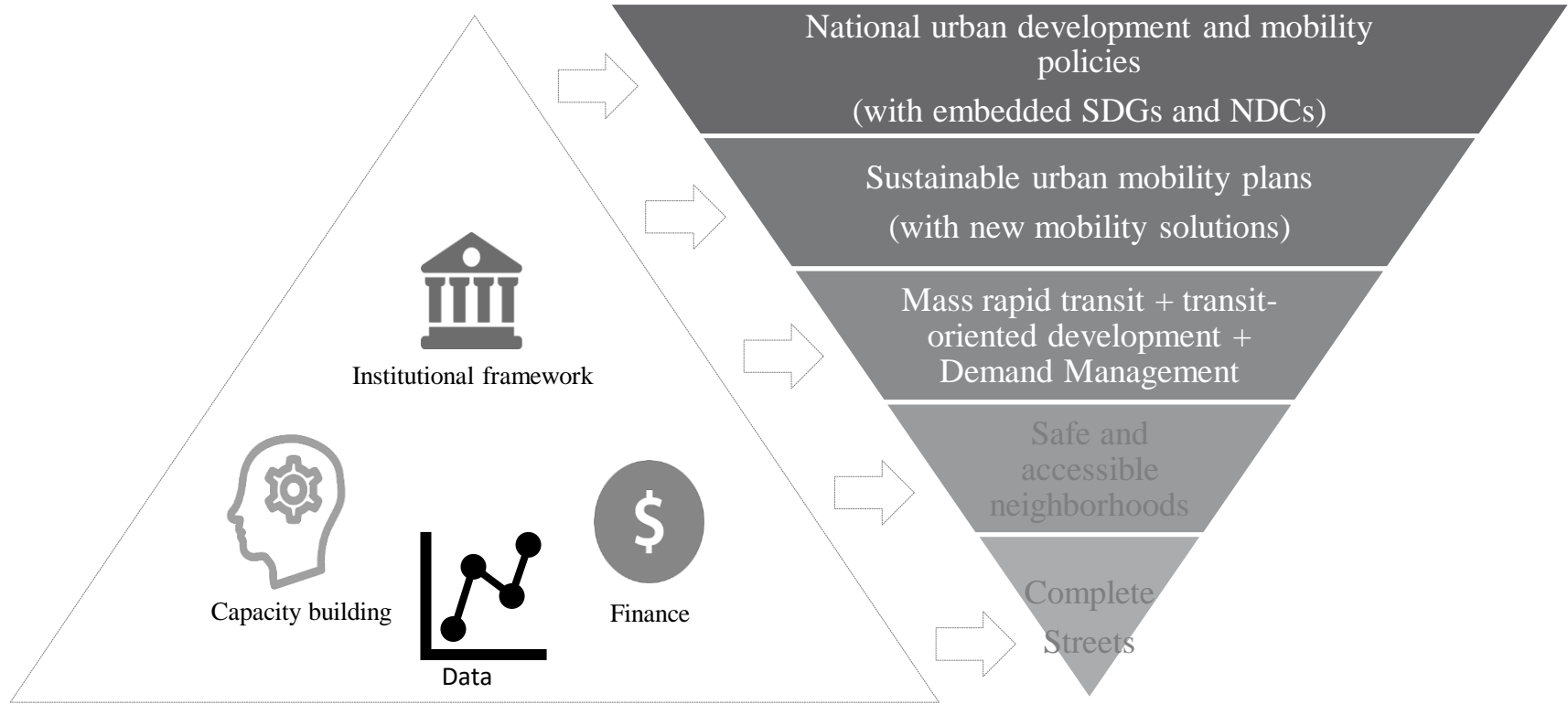
# AVOID-SHIFT-IMPROVE FRAMEWORK IN SUPPORT SUSTAINABLE MOBILITY



# Avoid-Shift-Improve in an African Context

| AVOID  | SHIFT/MAINTAIN   | IMPROVE  |
|--|--|--|
| Tackling Urban Sprawl: TOD<br>Upgrading Informal Settlements<br>Transport Demand Management                        | Safe walking and cycling<br>Integrated Informal transport<br>Establish Mass Rapid Transit<br>Increase Non-motorized urban freight<br>Develop railfreight opportunities | Freight load efficiency<br>Manage import second hand vehicles<br>Electrification of two/threewheelers/public transport |
| Sustainable Urban Mobility Plan (SUMP)<br>National Urban Mobility Policy<br>National Determined Contribution (NDC) |  |  |

# ENABLER AND VERTICAL INTEGRATION

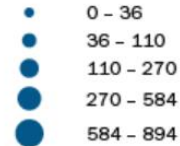


# AVOID: TACKLING SPRAWL – TRANSIT ORIENTED DEVELOPMENT - JOBURG



Public Investments for the Targeted Corridors (2018–2010)

**Corridors of Freedom Capital Expenditures  
(Rs millions)**



# AVOID: TACKLING SPRAWL – TRANSIT ORIENTED DEVELOPMENT – CURITIBA

1974



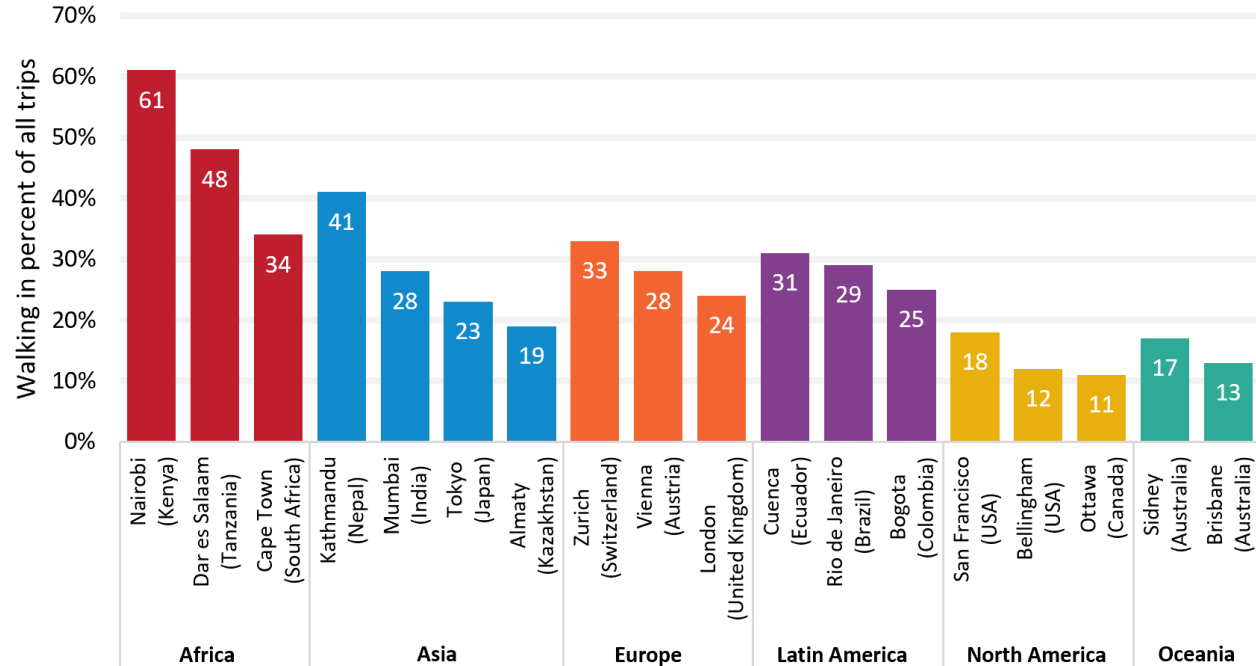
2006



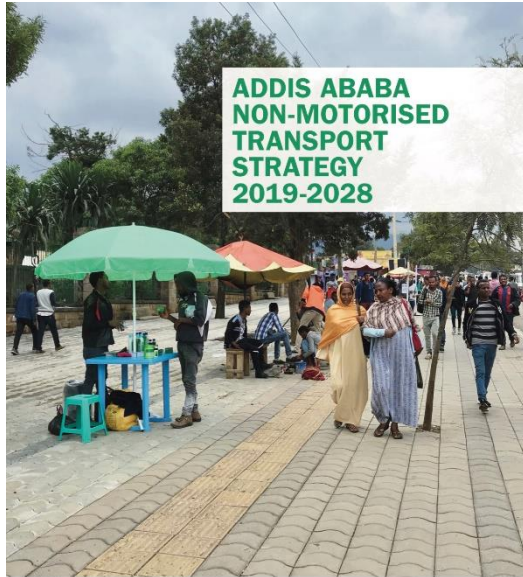
# SHIFT: WALKING AND CYCLING

## Walking share highest in dense cities and developing countries

- Walking in **Nairobi** accounts for 61% of trips
- **Cities in Africa** record between 34 and 61%
- **High walking rate based on constraint choices**



# SHIFT: SAFE WALKING AND CYCLING



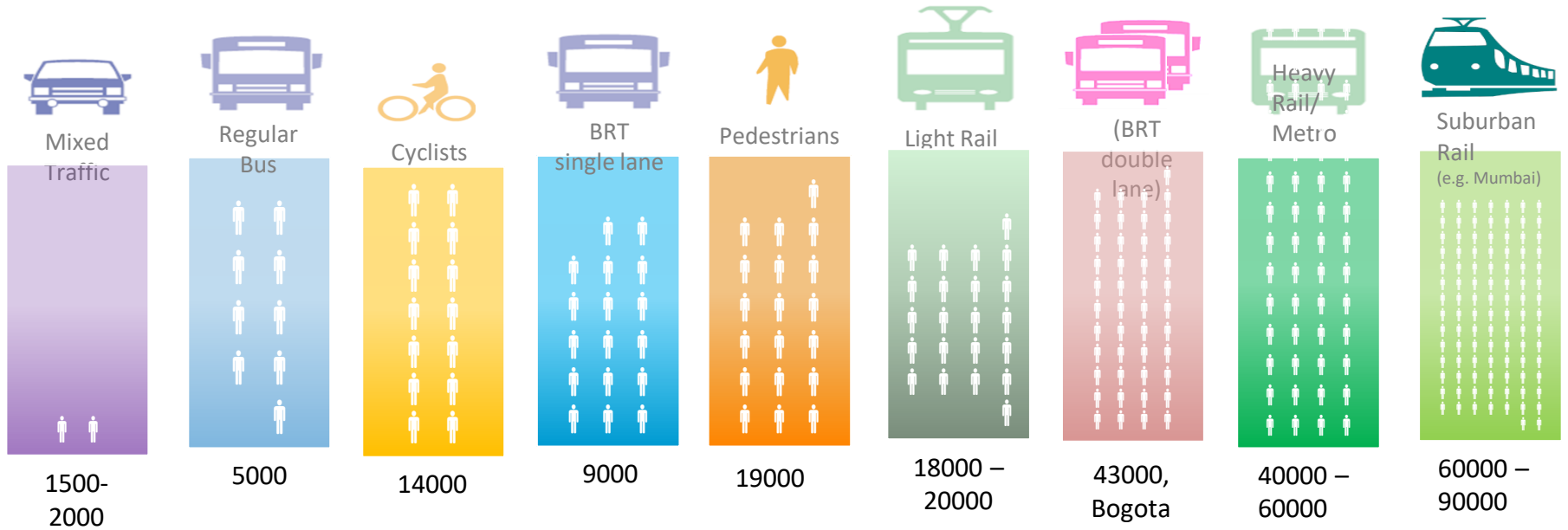
ADDIS ABABA CITY ADMINISTRATION

The NMT Strategy outlines a holistic set of measures to make walking and cycling safe, convenient, and easy to use. Over the next ten years, the NMT Strategy envisions:

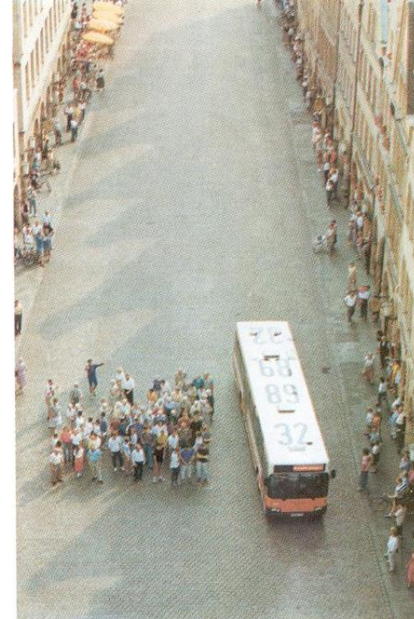
- The construction of 600 km of footpaths and 200 km of cycle tracks.
- The introduction of a modern, IT-enabled bicycle sharing system with bicycles available from a network of closely spaced stations.
- Safer access to public transport through traffic-calmed pedestrian crossings



# SHIFT: MOST EFFICIENT USE OF ROAD SPACE



# SHIFT: Most efficient modes



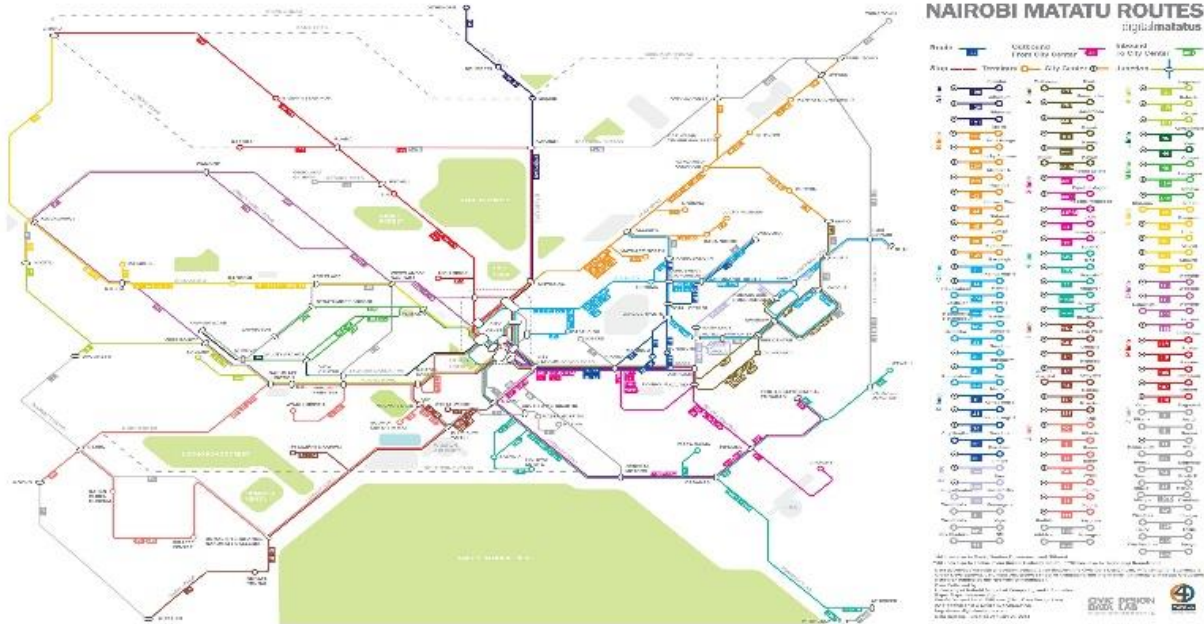
# SHIFT: MASS RAPID TRANSIT



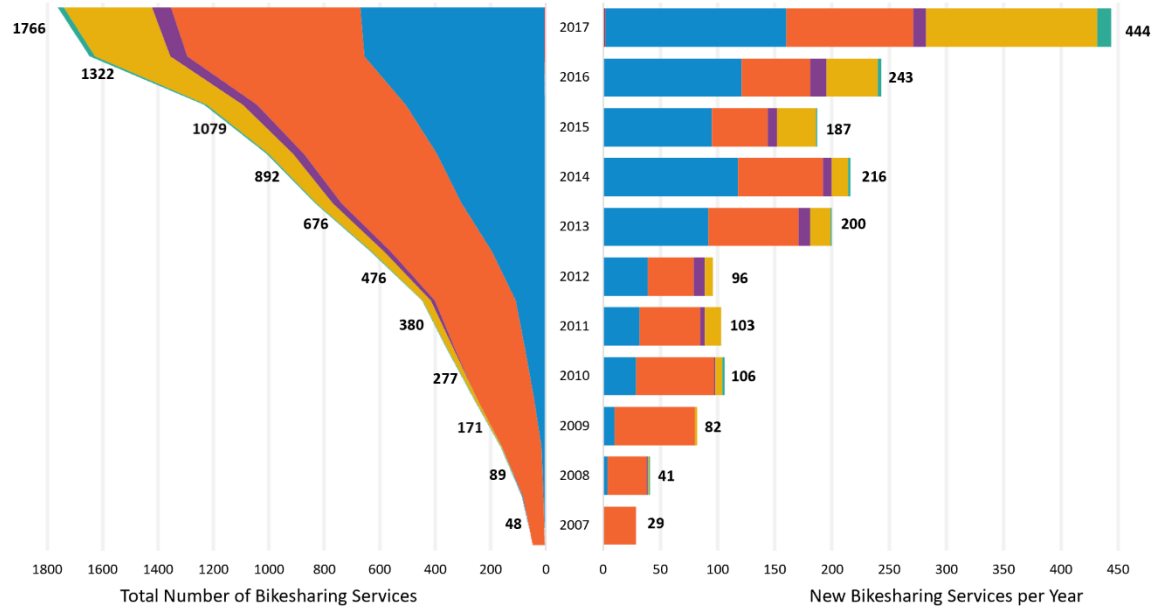
# SHIFT: BUS RAPID TRANSIT (BRT)



# SHIFT: INTEGRATION OF PARATRANSIT



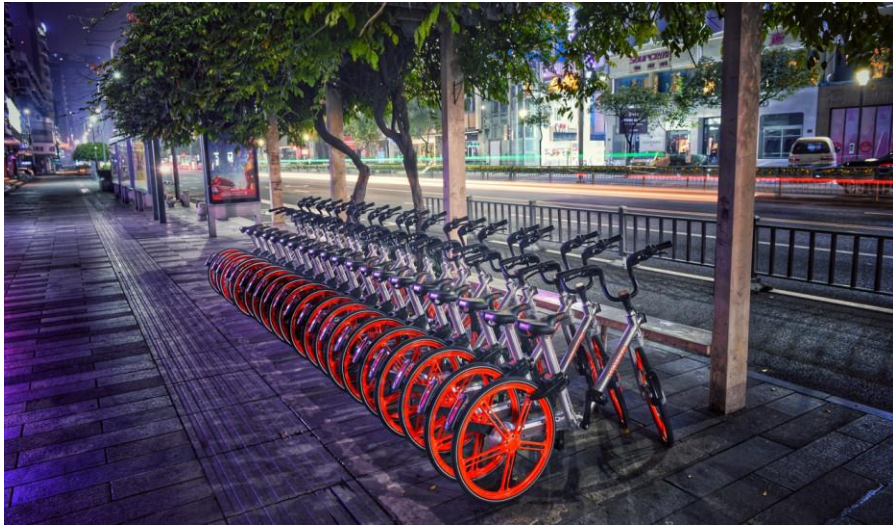
# SHIFT: THE FUTURE OF NEW MOBILITY SERVICES



■ Africa   
 ■ Asia   
 ■ Europe   
 ■ Latin America and the Caribbean   
 ■ Northern America   
 ■ Oceania

# NEW MOBILITY - HEAVEN OR HELL?

Good practice: Geo fencing, Pricing policy, local regulation, Integration



# SHIFT: NON MOTORISED URBAN FREIGHT





# Second HAND VEHICLES

- 42,510,000 vehicle in use in Africa
- Used vehicle market has been estimated at about \$60-70 billion in sales worldwide
- Annual vehicle fleet growth rate in Kenya and Ethiopia is 12% and 10% respectively
- In Ethiopia and Nigeria used vehicle imports account for 80% of all vehicle sales (2016)
- Policies: 5 year age limit + emission standards

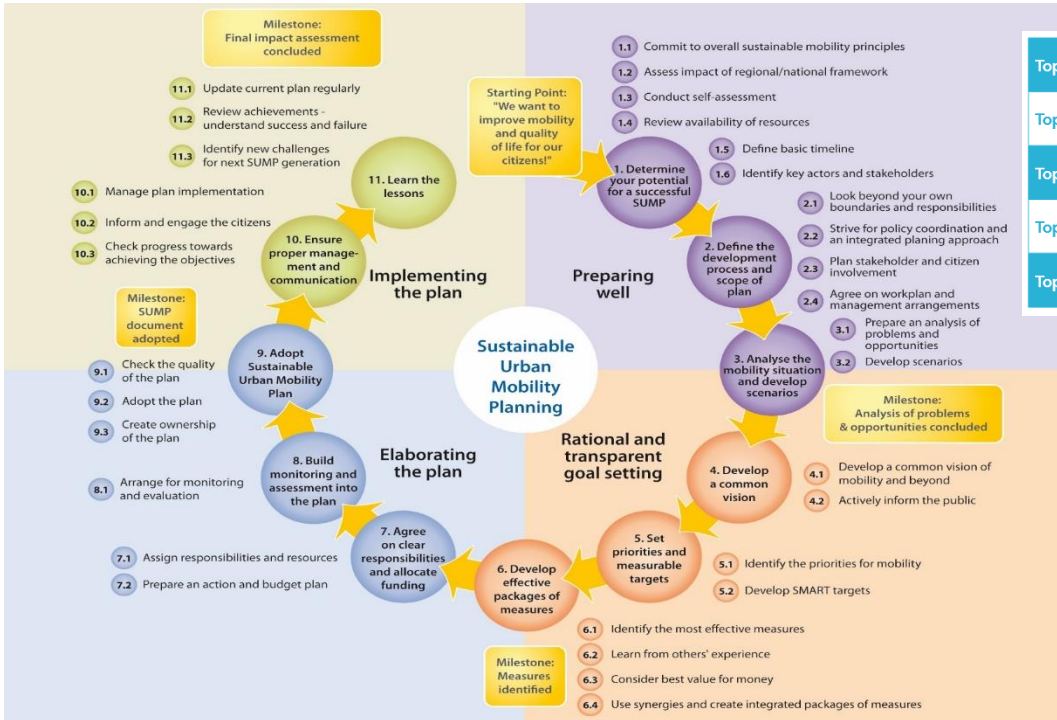
Status of African Countries based on a recognized 'strong' 5 year age limit



# A-S-I: SUSTAINABLE URBAN MOBILITY PLAN

Cameroon  
- Douala

European Union



|         |                                      |                           |
|---------|--------------------------------------|---------------------------|
| Topic 1 | Initiation ("MobiliseDays")          | June 2016                 |
| Topic 2 | Inventory & Evaluation               | January – May 2018        |
| Topic 3 | Goal Setting & Strategic Phase       | June – September 2018     |
| Topic 4 | Action Plan and Funding Pattern      | September – December 2018 |
| Topic 5 | Governance and Participatory Process | January – December 2018   |



# A-S-I: NATIONAL URBAN MOBILITY POLICY

## Policy objective:

Agree on **targets**, establish a **framework** and **allocate authorities and means** to national institutions and/or city administrations to **regulate, plan, finance & implement** sustainable transport infrastructure and management projects in a **comprehensive and integrated** manner

## Policy components:

- A sector vision, strategy, targets
- Institutional organization)
- A comprehensive set of laws & regulations, tech. guidelines etc.
- Budgeting & financing (medium and long term)

## Investment Program objective:

Agree and establish **regulatory and financial framework programs**, which lead to **significant transformation effects** in sustainable urban mobility through **development of selected transport modes** by the public and/or private sector.

## Investment Program examples:

- National scrapping program of polluting vehicles
- Subsidy program to cities for construction of mass-rapid-transit systems
- Subsidy program to private sector to develop and maintain e-mobility infrastructure

# A-S-I: RAISING PUBLIC AWARENESS



**Safe Streets Festival –  
a Unique and First event of  
its kind in the after civil war  
Liberia!**



# CLOSING MESSAGES

- AVOID FUTURE LOCK IN THROUGH SPRAWL
- COMBINE PUSH AND PULL
- IDENTIFY OWN LOCAL ADAPTABLE SOLUTIONS
- COMBINE LONG TERM VISION AND SHORT TERM ACTION
- VERTICAL INTEGRATION A KEY ELEMENT



# Thank you.

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**HIGH VOLUME  
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APPLIED RESEARCH