

Urbanization and Mobility in Africa

Africa Climate Resilient Infrastructure Summit, 27th-29th April 2015, African Union Conference Center, Addis Ababa, Ethiopia

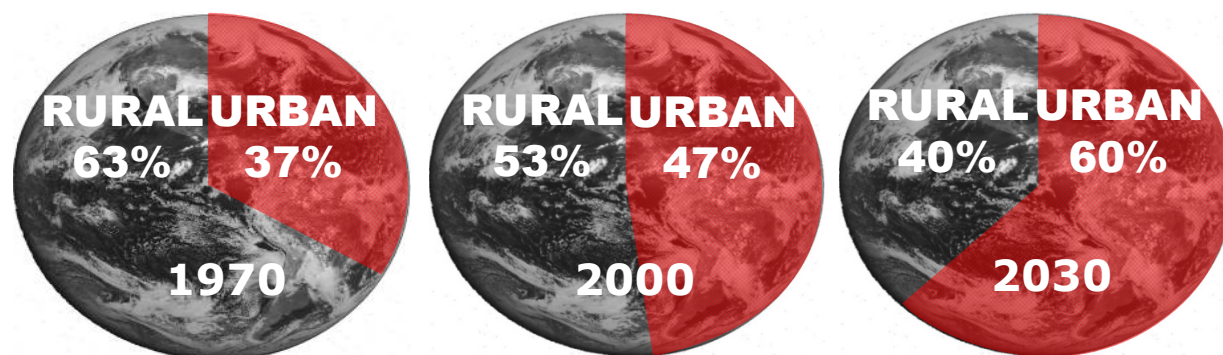
Debashish Bhattacharjee

Lead Urban Mobility

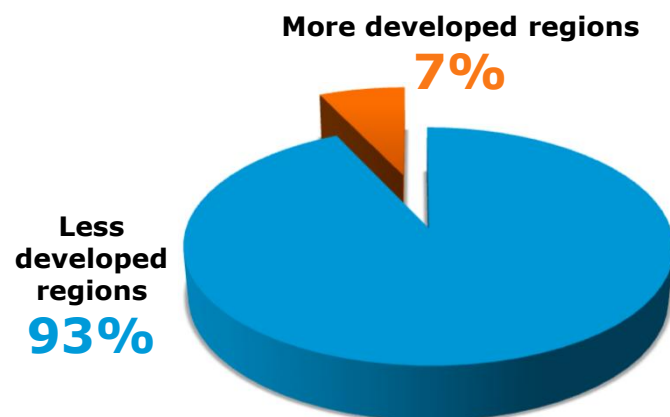
Urban Basic Services Branch

UN-Habitat

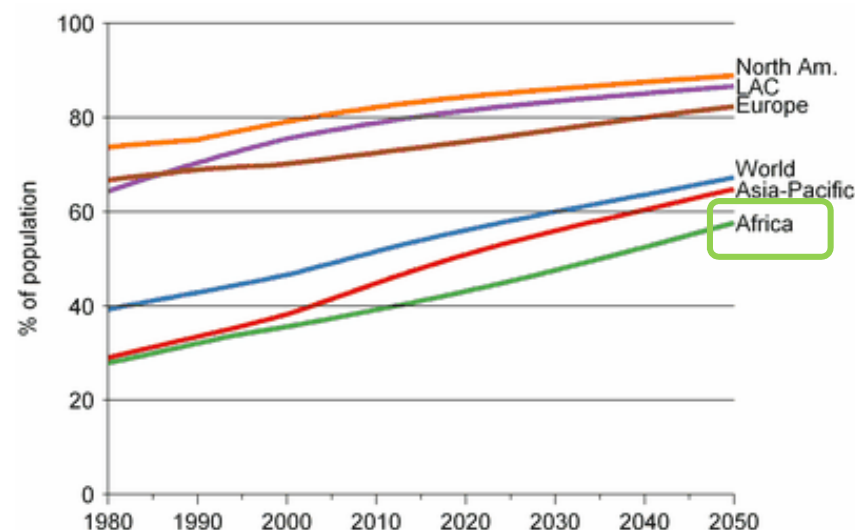
Urbanization Trend: Africa is the fastest urbanising continent



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

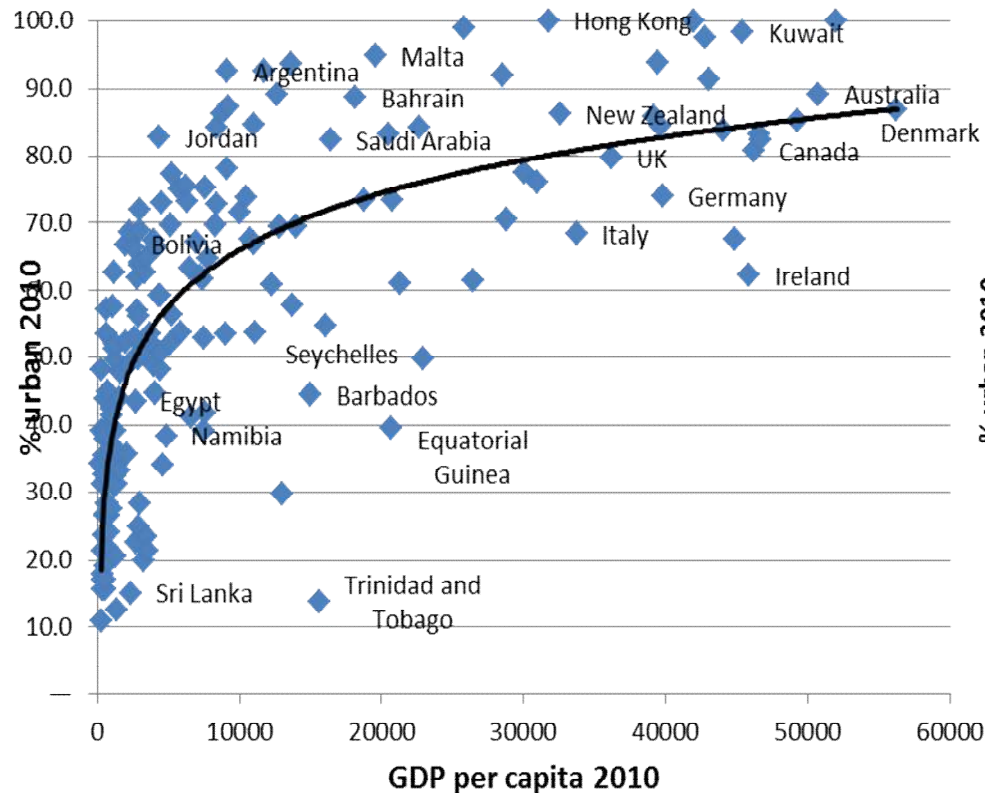


URBAN POPULATION, WORLD AND WORLD
REGIONS, 1980-2050

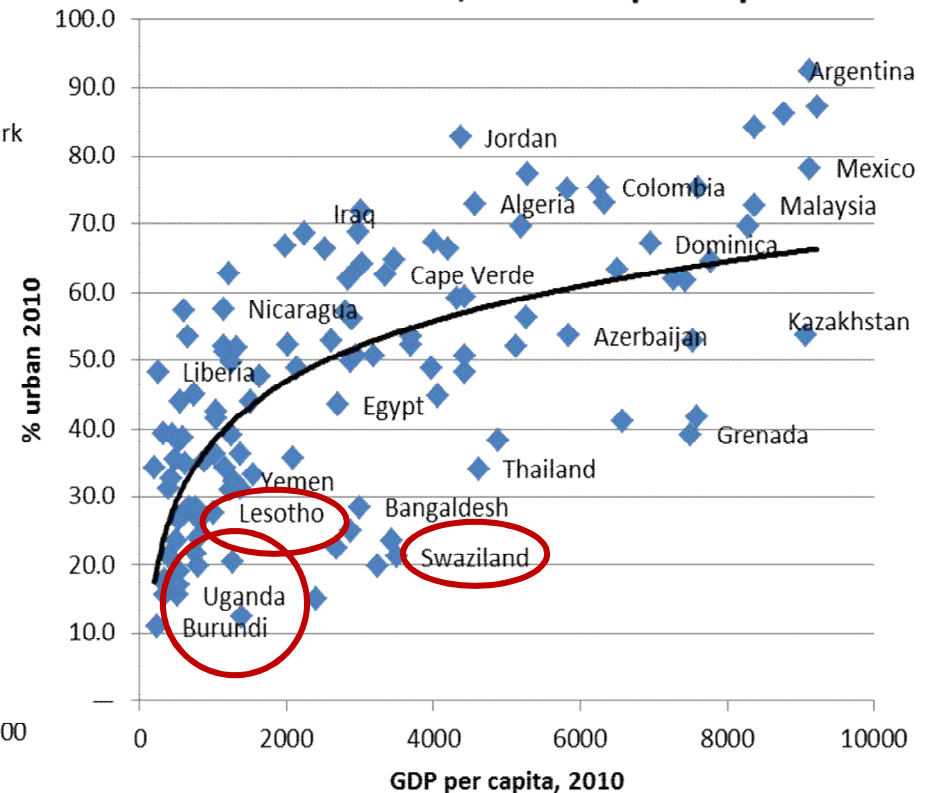


Urbanization can be a very powerful engine for development

Urbanization and GDP



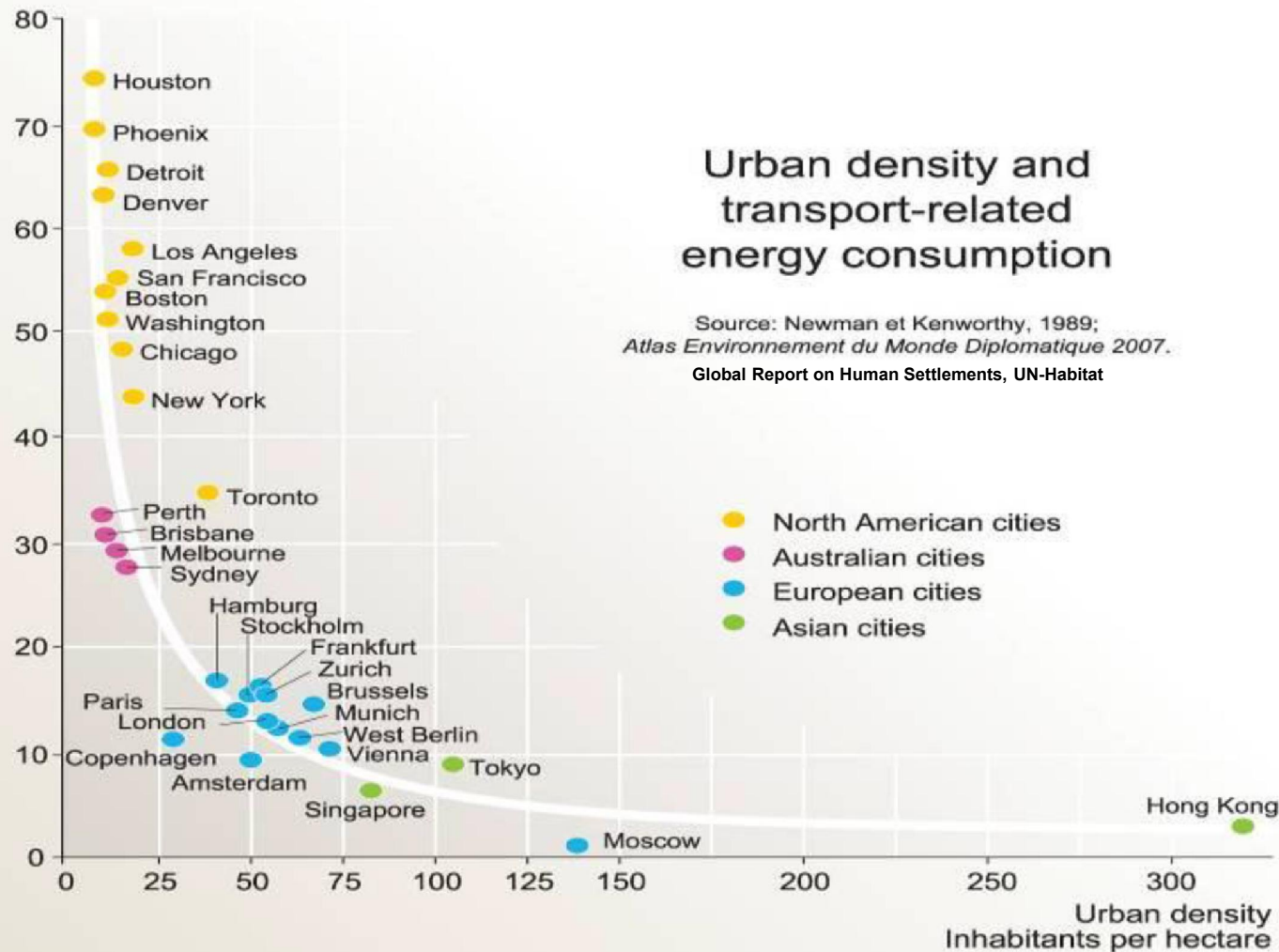
Urbanization and GDP Countries below 10,000 GDP per capita



Source: UNDESA (2012) percent urban; World Bank (2012) GDP per capita.

Urban Density & Carbon Intensity

Transport-related energy consumption
Gigajoules per capita per year



The Urban Mobility Challenge in Africa

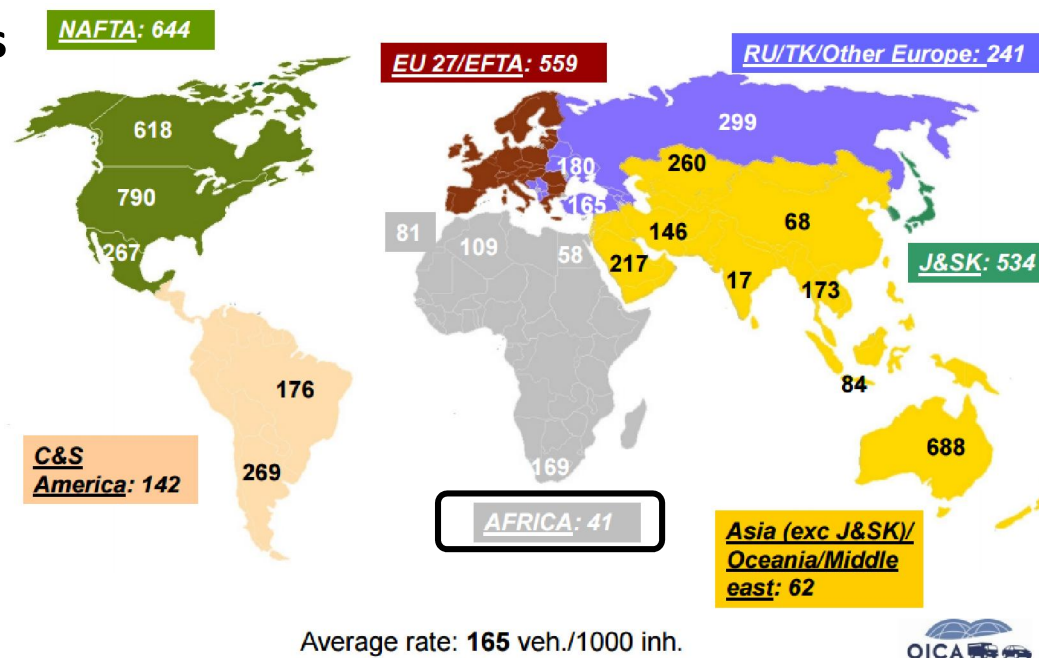
- **Mobility flows** are the key dynamics of urbanization, with the associated infrastructure constituting the backbone of urban form.
- Urban planners in African cities have largely **focused on** facilitating urban mobility by investing in new and expanded **infrastructure for private cars**.
- Rapidly rising **Motorization Rates** in African **Cities-Faster than population growth**



Africa an emerging market



Example: Johannesburg-Pretoria metropolis has to cope with an annual traffic increase of 7% (mainly private cars)



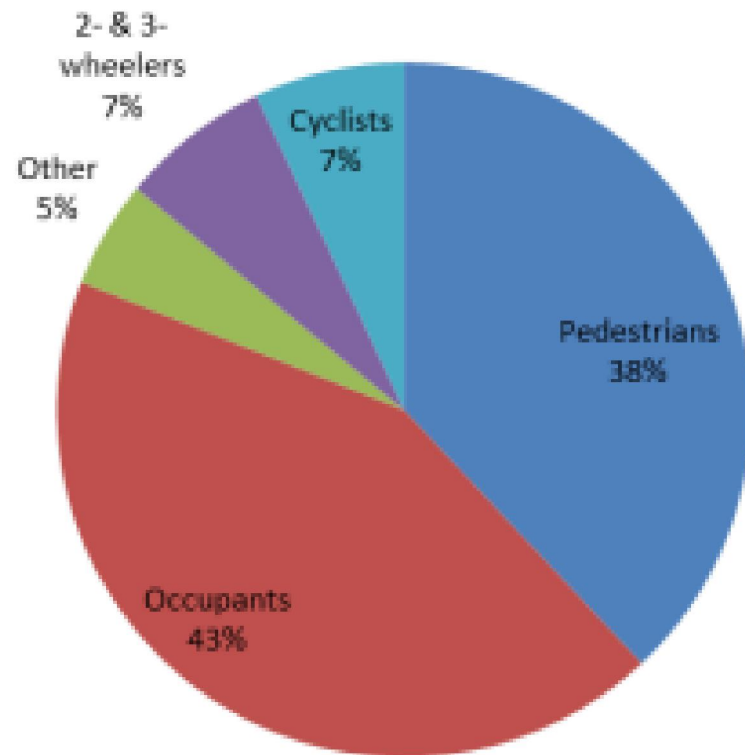
Urban Mobility Challenges in Africa

- Car based development Paradigm; Leading to Sprawl, congestion, emissions;
- Families and individuals can spend 30% of their incomes on transport;
- Workers commute up to four hours a day (sometimes walking) to low-paying jobs, wasting time and losing productivity;
- Walking accounts for more than half of all trips but less than 1 % of costs, accommodating private vehicles incurs 50% of system costs in some countries;



Sustainable Urban Mobility Challenges in Africa - Road Traffic Accidents

Road Traffic Deaths by type of road user in African Cities



The African Region possesses only **2% of the world's vehicles** but contributes **16% to the global deaths**

- Africa is experiencing the **highest per capita rate of road fatalities** currently in the world
- Particularly affected are **Non-Motorized Transport Users**

Sustainable Transport Challenges

Urban Air Pollution & Emissions

- Urban air pollution is on the rise in African Cities → major cause is the use of fossil fuels;
- Growing vehicle fleet with a high proportion of imported used vehicles
- Air pollution estimated to cause roughly 49,000 deaths per year in African Region;
- Vehicle emission standards are inadequate and poorly enforced;
- Few countries have emission inventories, and there is only limited or no outdoor air quality monitoring in the cities.



Urban Modal Shares in Africa

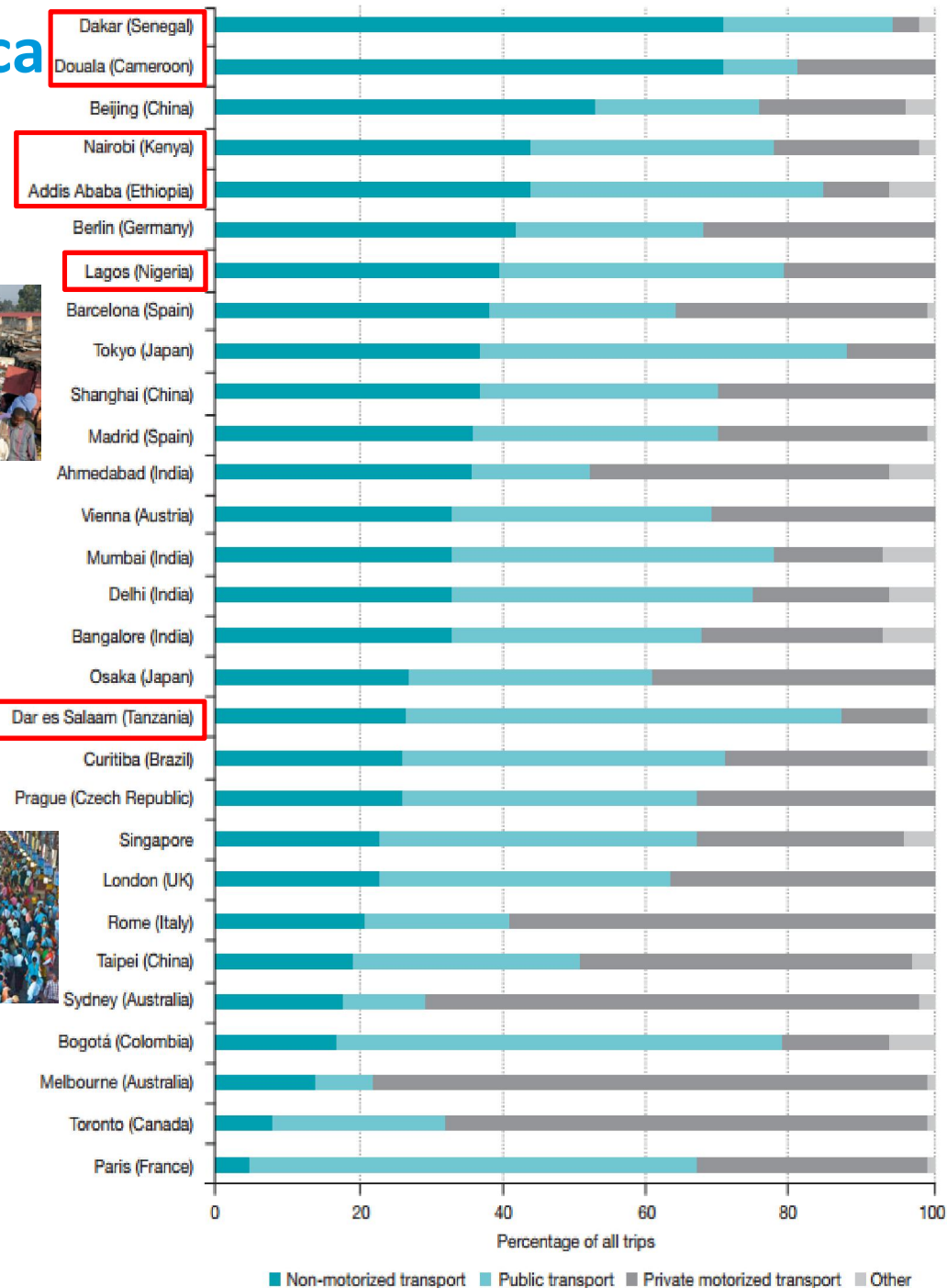
NMT in Urban Africa:

- Most urban trips in Africa are made by **foot or bicycle**
- Examples: Dakar: 71% NMT/ Douala: 60% NMT
- Often **not by choice** but rather driven by **lack of affordable and accessible alternatives** (Example Nairobi: Low-income HH spend more than 30% of their income on transport)
- **Poor & unsafe** infrastructure for NMT
- NMT is **marginalized** in urban planning and investments



Public Transport in Urban Africa:

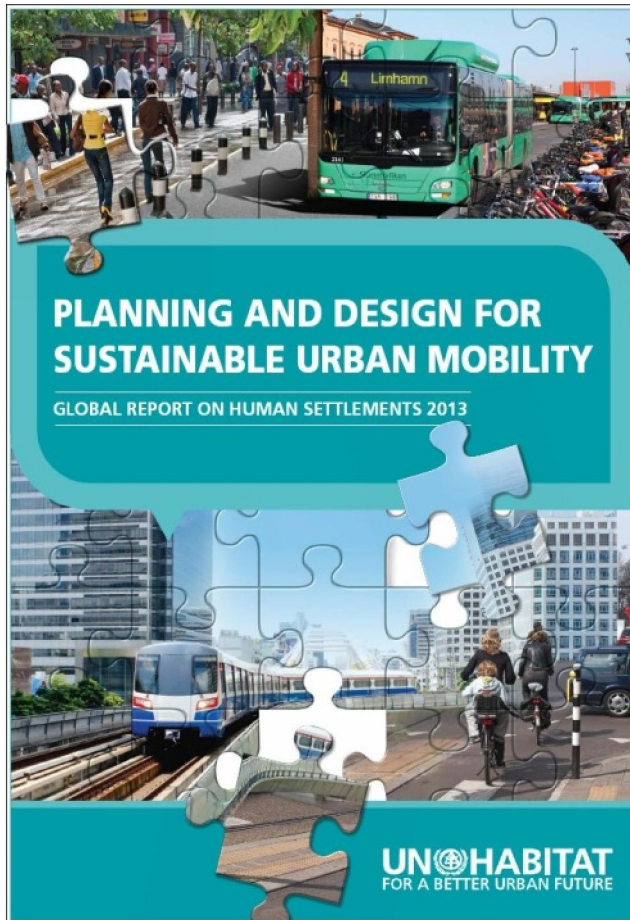
- **Few efficient public transport** systems in African cities (however, BRT in Cape Town, Lagos, Johannesburg)
- **Informal PT** on the rise (Example Harare: 90% of PT done by minibuses)
- Often unsafe, uncomfortable, varying schedules and fares, unregulated management, polluting



Sources: ITa academy, 2011; UITP and UaTP, 2010 (in GRHS, 2013)

GRHS 2013: The Key Messages

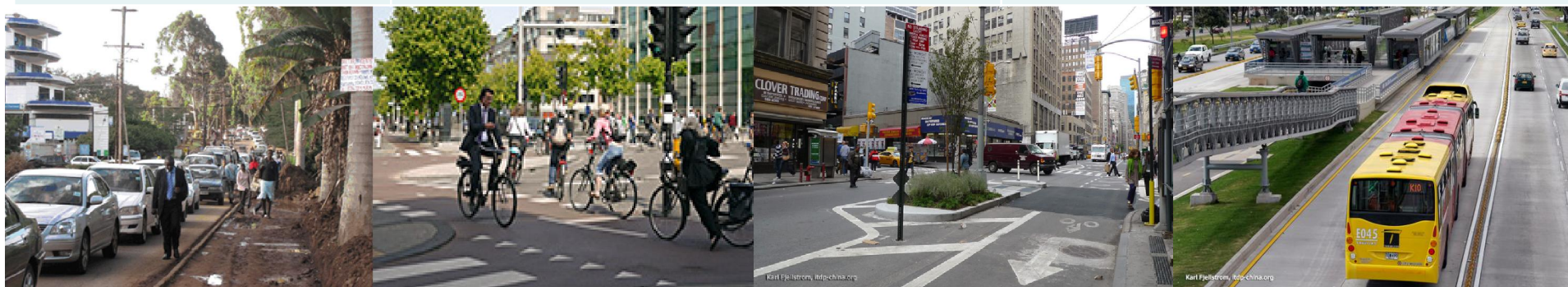
→ Published **every two years** under a UN General Assembly mandate to **inform governments and partners** of global human settlements conditions and trends



- **Need for a paradigm shift: Access is the aim of transportation**
- **Urban Form** is key to urban mobility planning: *How to bring people and places together;*
- **Coordinated Planning** at multiple geographical scales and appropriate institutional and regulatory frameworks;
- Priority to **non-motorised** and **public** transport ; *Integrated systems;*
- The **integration of land-use planning and transport planning** is essential for sustainable urban mobility systems
- Urban goods transport must be **integrated** in urban planning and design;
- Develop the “Business Case for **Access**”: What is the **economic and social value**?

The Avoid-Shift-Improve Paradigm

	Aim	City Intervention
Avoid (System Efficiency)	Reduce or Avoid the Need for Travel	Compact city planning/ Mixed Land Use/ Pricing and Regulatory Mechanisms
Shift (Trip Efficiency)	Modal shift from energy intensive modes (cars) to Walking, cycling and Public Transport	Make cycling and walking safer and attractive; Promote Public Transport; Improve street design, provide adequate public spaces; link walking and cycling with PT; Pricing and Regulatory mechanisms.
Improve (Vehicle Efficiency)	Improve energy efficiency of vehicles and vehicle technology	Telematics; Regulatory Mechanisms; Facilities for Public recharging of Electric Vehicles



UN-Habitat Urban Mobility Strategy: Vision; Process and Solutions

Socially Inclusive, Environmentally Sustainable and Economically Vibrant Cities



UN-Habitat Process and Engagements:

National Urban Policies; Field Demonstration Projects; Capacity Building; Guides and Toolkits; Strategic Partnerships; Governing Council; WUF; Regional Fora; Flagship Publications; Campaigns

Sustainable Mobility Solutions:

Mobility planning integrated with land use planning- Plan for Compact cities at the human scale.

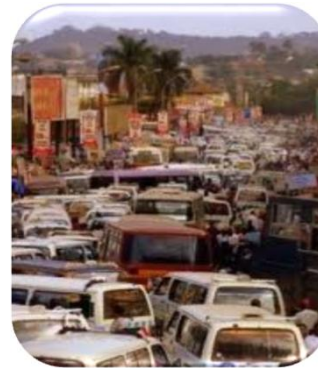
Make Walking and Cycling Safer and More Attractive and Integrate with Public Transport

Safe, Affordable, Reliable and Comfortable Public Transport

SUSTRAN East Africa:

Integrated Sustainable Transport Projects - Strategic Response

Preparing for continued urban growth now provides the opportunity to avoid mistakes made by other cities already further along in their development paths.



Supporting the **design and implementation of integrated sustainable transport projects** in Addis Ababa, Kampala and Nairobi

Strategic Response

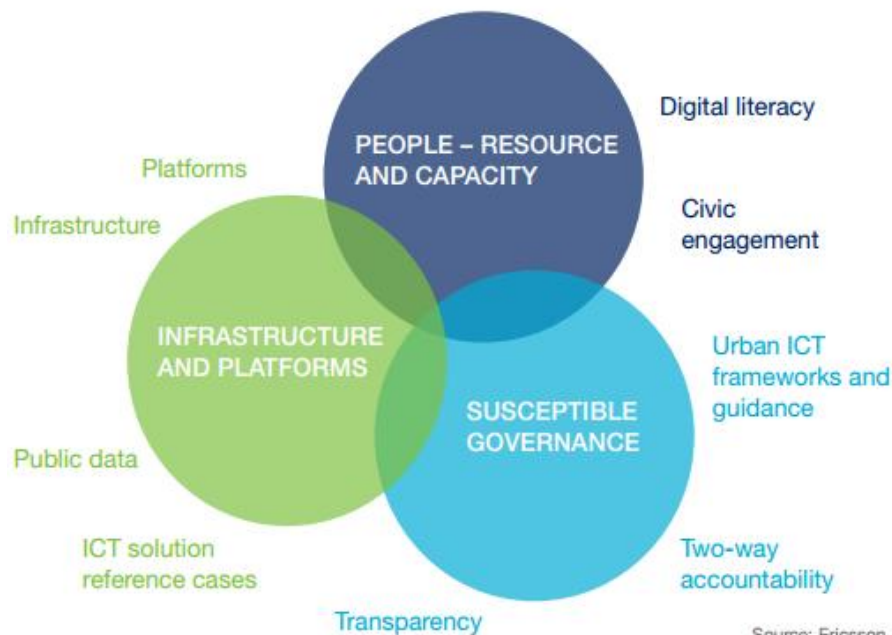
Upgrade transit systems - Introduce BRT
Implement improved non-motorized transport infrastructure
Integrate transport modes
Apply travel demand management

Reduce growth in private motorised vehicles

Potential Direct Global Environmental Benefit :
Reduction of 2.5 Million Ton Co2e

The Potential to “Leapfrog”

An ICT enabling environment



- Urban transportation needs can be addressed through **innovative ICT** enabled applications
- ICT solutions can contribute to **efficiency, accessibility and safety** of transportation systems *(Example Abidjan: Reduction of 10% of travel time of collective passenger transport across the city by utilizing phone information)*
- **Areas of Application:** shared transport systems, integration of transportation systems, GPS tracking, big data on transport demand, cashless payment, travel booking, etc.
- Large **penetration of cellular networks** in Africa
- Reshaped city spaces tying work/shopping/living areas closer together and use of improved telepresence technology and virtual interactions can **limit need for travel**

Role of ICT in Mobility (Example: Nairobi)

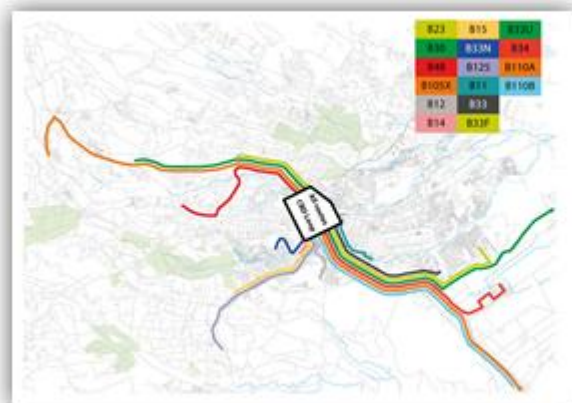
1. Digital Mapping of Nairobi Matatu Routes (via Smart Phones)



2. Students being trained on conducting demand surveys



3. Results of Demand Survey

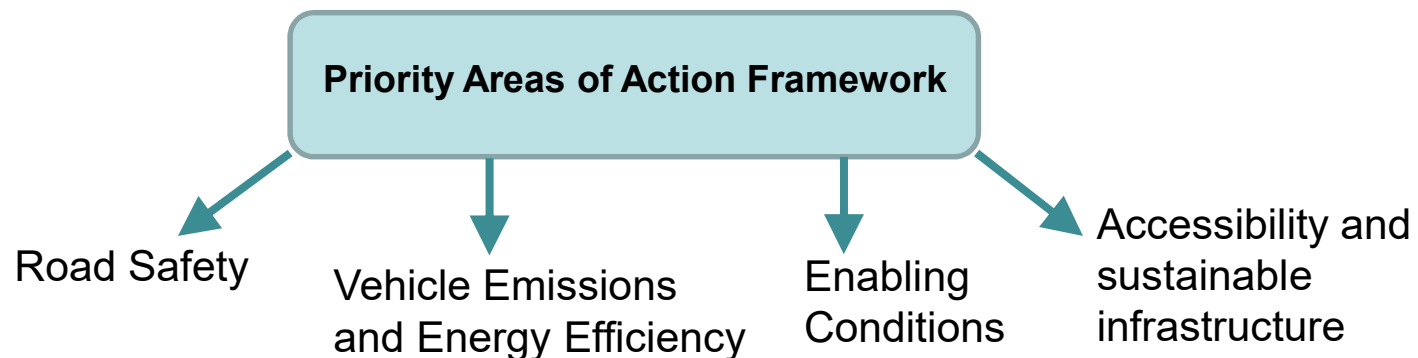


4. Proposal for Bus Rapid Transit Service Scenario

ASTF – Africa Sustainable Transport Forum



- 1st Ministerial and Experts Conference in October 2014 at the UNEP/ UN-Habitat Headquarters in Nairobi, Kenya
- Discussion on the challenges and solutions in the context of green growth and emissions reductions
- Outcome: 13 point ASTF Action Framework that outlines a **harmonised roadmap** for achieving sustainable transport in Africa



The Way Forward to Sustainable Mobility

- *Accessibility* is the goal of transportation; both adaptation and mitigation gains;
- Focus on the “demand side” – compact city planning/ mixed land use to reduce travel;
- Promote efficient, safe, affordable public transport;
- Integrate *Active Transport* (NMT) with Public Transport;
- Develop National Policy Framework to guide cities

More at www.unhabitat.org

Thank You for your Attention

