

# SUSTAINABLE URBAN TRANSPORT IN AFRICA: ISSUES AND CHALLENGES

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## Why Talk About Transport in Africa?

- Families and individuals spend upwards of 30% of their incomes on transport and energy services.
- Workers commute up to four hours a day (sometimes walking) to low-paying jobs, wasting time and losing productivity.
- By 2020, transport will kill more than HIV, War and TB combined. The majority of victims are the poor and children.

- Upwards of 50% of foreign exchange earnings go to importing fossil fuels for urban transport bankrupting national treasuries.
- Transport infrastructure investment is one of the leading cause of forced evictions and displacement world-wide.



## Urbanization and Motorization in Africa

- Africa is the Fastest Urbanizing Continent in the World: Urban population growth well above national averages.
- Growth of private vehicle fleet faster than population growth; 10% in some cases.
- Road accidents: Increase of 350% in 20 years in Africa. Kenya has among the highest accident rate in the world.
- Air Quality: Motorization trends coupled with lack of end-of-tailpipe regulations spells disaster.

## OTHER URBAN MOBILITY TRENDS

- Modal Split: Walking (40%); Public Transport (50%); Other (10%).
- Road Network: Designed exclusively for private cars with virtually no NMT or public transport infrastructure provision.
- Transport is a Great Employment Generator: 70,000 persons employed in the sector in Nairobi alone.

## ADDITIONAL URBAN TRANSPORT CHALLENGES IN AFRICA

- Integrating urban mobility with other aspects of city development, including land use.
- Upgrading informal settlement internal circulation and improve access.
- Rationalizing the allocation of road space across all classes of users.
- Ensuring gender equity in urban transport provision.
- Improve travel demand forecasting and emissions modeling capability.

## Cleaning the Air in African Cities: the Air Quality Management Process

- Monitor Ambient air quality.
- Develop an emissions inventory by mode then perform dispersion modeling according to route network.
- Identify transport-related measures to improve emissions and assess their costs.
- These measures may: (1) reduce the emissions per unit of transport activity or (2) reduce the unchecked growth in transport activity.

## Transport Demand Forecasting in Developing Countries

- State of the Practice is Poor (both hardware and software).
- Very low priority in terms of development assistance.
- Poor availability of information (surveys)
- Emissions modeling is difficult if you don't know VKT by mode.
- Need emissions factors geared to local conditions.

## Information Needs for Transport Planning in Africa

- Who is traveling where, how, when and why?
- How would consumers respond to particular sets of changes in price, speed, reliability or convenience and comfort?
- What is their willingness-to-pay for these changes? What are their actual preferences?

## Data Sources for Transport Demand Forecasting

- Traffic counts:
  - -2/3 of countries surveyed had never done them; some do them on a regular basis (Johannesburg); some on an ad-hoc project-by-project basis.
  - Traffic Speed surveys: important as an input or a validation for mobile-source emissions modeling.
  - Household travel surveys, other than RSA, no city in SSA has one.

## Why is Travel demand Forecasting Important For Air Quality Planners?

- Transportation planning affects air quality more than emissions control technology does.
- We must forecast travel demand under different sets of policies to be able to know the cost-effectiveness of different pollution control strategies.

## These Policies affect air quality:

- Public Transport:
  - -fixed-guideway investment
  - -priority bus treatment
  - -level of service in terms of coverage and quality (crowding frequency safety)
  - -capital and/or operating costs
  - -market segmentation in terms of service provision

## These Policies Affect Air - Quality

- Roadway Infrastructure: grade separation at intersections; road capacity or expansion; pricing; traffic management
- NMT: NMT infrastructure expansion; pedestrian improvements
- Land Use: Settlements serviced by public transport; -Growth controls

## Regulatory Measures for the Demand Management of Urban Transport

- Traffic management
- Parking controls
- Area-wide traffic bans
- Traffic controls and priority for public transport
- Land use controls
- Deregulation/Privatization of public transport
- Staggering work hours
- Vehicle technologies and alternative fuels
- Park and ride facilities

## Transport demand-management planning measures

- Land Use controls and trip minimization
- Decentralized economic development planning to increase densities
- Restraint on economic growth of principle city centres
- Designated areas for growth control over patterns of development
- use of preferred locations for extreme travel-generating land uses
- fiscal inducements for relocation to specific areas

## Transport Demand Management Planning Measures

- zoning regulations (controlling densities)
- regeneration of decaying areas or urban in-fill
- overall improvements to housing and neighborhood development in particular areas
- Parking standards for new development

## Targets and standards for local authorities to set and implement

- Targets for improved road safety, reduction of noise and air pollution levels.
- Targets for reduced traffic levels and certain types of traffic (e.g. restrictions of heavy freight deliveries).
- Targets for reduced fuel consumption and CO2 emissions.
- Targets for increased carpooling, public transport use, cycling and walking.
- Setting tailpipe emissions standards, enforcement of standards.
- Vehicle , Inspection and maintenance programs.

## Economic Instruments for Demand Management of Urban Transport

- Road Pricing
- Area Licensing
- Vehicle Ownership charges, or surcharges, taxes, import duties, licensing, registration etc.
- Targeted Use taxes, Fuel levies etc.
- Parking charges
- Public Transport Subsidies
- Automobile Restraint and Pricing
- Pedestrian and bicycle priority

## SUSTRAN Africa's GEF Program

- Develop a framework to identify/analyze/implement transport measures to address local environmental priorities while simultaneously reducing GHG emissions.
- Cost-effectiveness analysis, based on locally identified parameters and internationally recognized climate change costs, must be included.