Towards sustainable mobility in Africa

Holger Dalkmann
Independent Consultant – Sustain 2030
Urban Theme Lead, HVT Programme

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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

http://eepurl.com/dxrgkX
3- 10% loss of GDP through congestion in African cities
The common challenges (in Africa)

- 200,000 deaths annually through road accidents
- 600 million deaths annually through air pollution
PROPORTION OF POPULATION, ROAD TRAFFIC DEATHS, AND REGISTERED MOTOR VEHICLES BY COUNTRY INCOME CATEGORY, AFRICAN REGION, 2016

Source: WHO 2018
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

SOURCE: Mortality data from World Health Organisation:
http://apps.who.int/gho/data/node.wrapper.ENVHEALTH3
SUSTAINABLE TRANSPORT AND SDGS

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

PLAN FOR PEOPLE
NOT FOR CARS

Transport-related indicators:

- **3.6.1**
  - Death rate due to road traffic injuries

- **9.1.1**
  - Proportion of the rural population who live within 2 km of an all-season road

- **9.1.2**
  - Passenger and freight volumes, by mode of transport

- **11.2.1**
  - Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

- **12.c.1**
  - Amount of fossil fuel subsidies per unit of GDP and as a proportion of total national expenditure on fossil fuels

Source: SLoCaT 2019
EMISSION GAP GROWING, BUT LOW CARBON TRANSPORT HAS HIGH MITIGATION POTENTIAL

Source: SLoCaT, various

Source: Various
AVOID-SHIFT-IMPROVE FRAMEWORK IN SUPPORT SUSTAINABLE MOBILITY

**Avoid**
- Avoid and reduce the need for motorized travel

**Shift**
- Shift to more environmentally friendly modes

**Improve**
- Improve energy efficiency of transport modes

Source: SLoCaT
Avoid-Shift-Improve in an African Context

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

Sustainable urban mobility plans (with new mobility solutions)

Mass rapid transit + transit-oriented development + Demand Management

Safe and accessible neighborhoods

Complete Streets

Institutional framework

Capacity building

Data

Finance

ENABLER AND VERTICAL INTEGRATION
AVOID: TACKLING SPRAWL – TRANSIT ORIENTED DEVELOPMENT - JOBURG
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

Source: SloCaT
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.

Source: ITDP 2018
SHIFT: MOST EFFICIENT USE OF ROAD SPACE

<table>
<thead>
<tr>
<th>Traffic Type</th>
<th>Capacity (vehicles/day)</th>
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<tbody>
<tr>
<td>Mixed Traffic</td>
<td>1500-2000</td>
</tr>
<tr>
<td>Regular Bus</td>
<td>5000</td>
</tr>
<tr>
<td>Cyclists</td>
<td>14000</td>
</tr>
<tr>
<td>BRT single lane</td>
<td>9000</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>19000</td>
</tr>
<tr>
<td>Light Rail</td>
<td>18000 - 20000</td>
</tr>
<tr>
<td>(BRT double lane)</td>
<td>43000, Bogota</td>
</tr>
<tr>
<td>Suburban Rail (e.g. Mumbai)</td>
<td>40000 - 60000</td>
</tr>
<tr>
<td></td>
<td>60000 - 90000</td>
</tr>
</tbody>
</table>

Source: GIZ div
SHIFT: Most efficient modes

Source: City of Muenster
SHIFT: MASS RAPID TRANSIT
SHIFT: BUS RAPID TRANSIT (BRT)
SHIFT: INTEGRATION OF PARATRANSIT
SHIFT: THE FUTURE OF NEW MOBILITY SERVICES

Source: Berger 2018, SLoCaT
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
A-S-I: SUSTAINABLE URBAN MOBILITY PLAN

European Union

Cameroon - Douala

Source: Rupprecht Consulting, MYC

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
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

Source: MYC
A-S-I: RAISING PUBLIC AWARENESS

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

Source: GIZ, Open Street Cap Town
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.

Holger Dalkmann
hdalkmann@sustain2030.net

Join our online network:
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