Bridging the gap

Pathways for Transport in the Post 2012 Process

Sustainable Urban Transport Solutions for East African Cities 'SUSTRAN Project'

Bridging the Gap between Transport and Climate Change in Africa,

Doha, 01.12.2012

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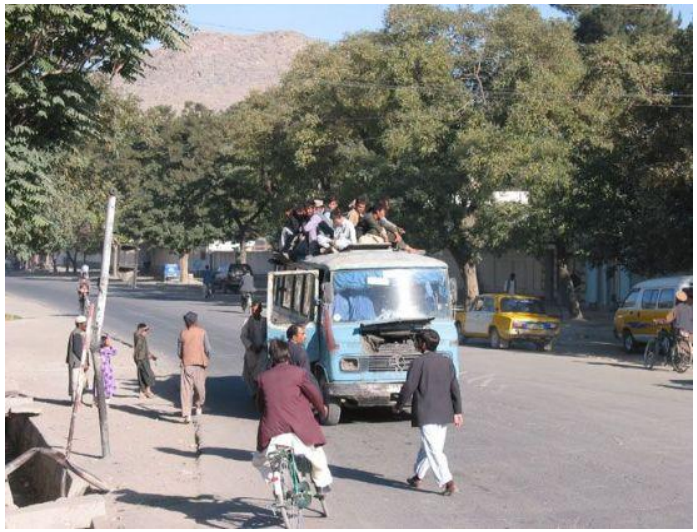
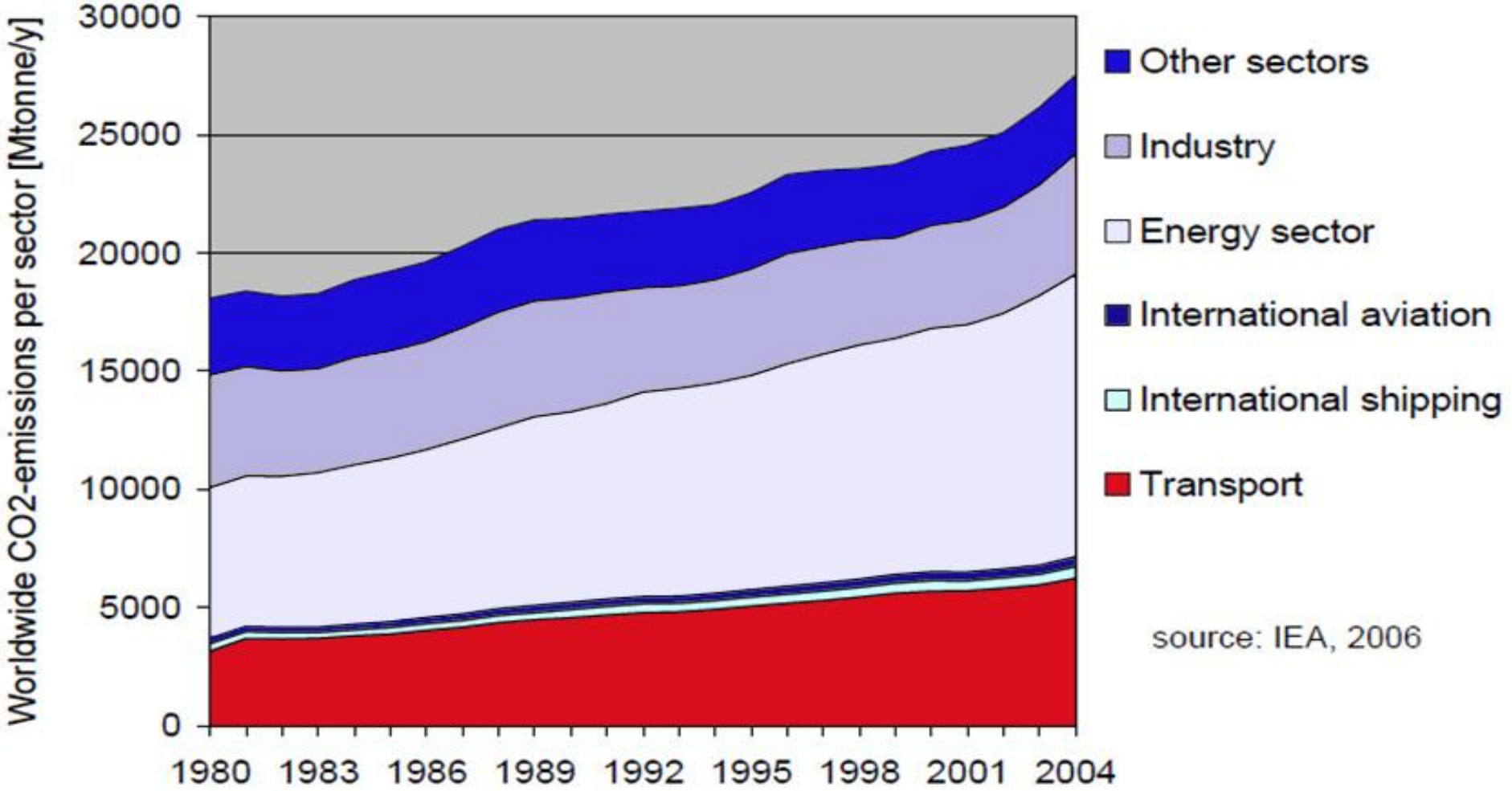


Background



Energy-related CO2 emissions of various sectors (worldwide)

Introduction

BACKGROUND

By 2030, the population living in urban areas in East Africa will increase from 7.5% of the average annual population (1950 to 2000) to 22.6% (2000 – 2030)

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

Start: June 2011

GEF funding: USD 2.8 million

Model initiative supporting the design & implementation of integrated sustainable transport projects in the three capital cities of Kenya, Uganda and Ethiopia

Strategic Response

Upgrade transit systems

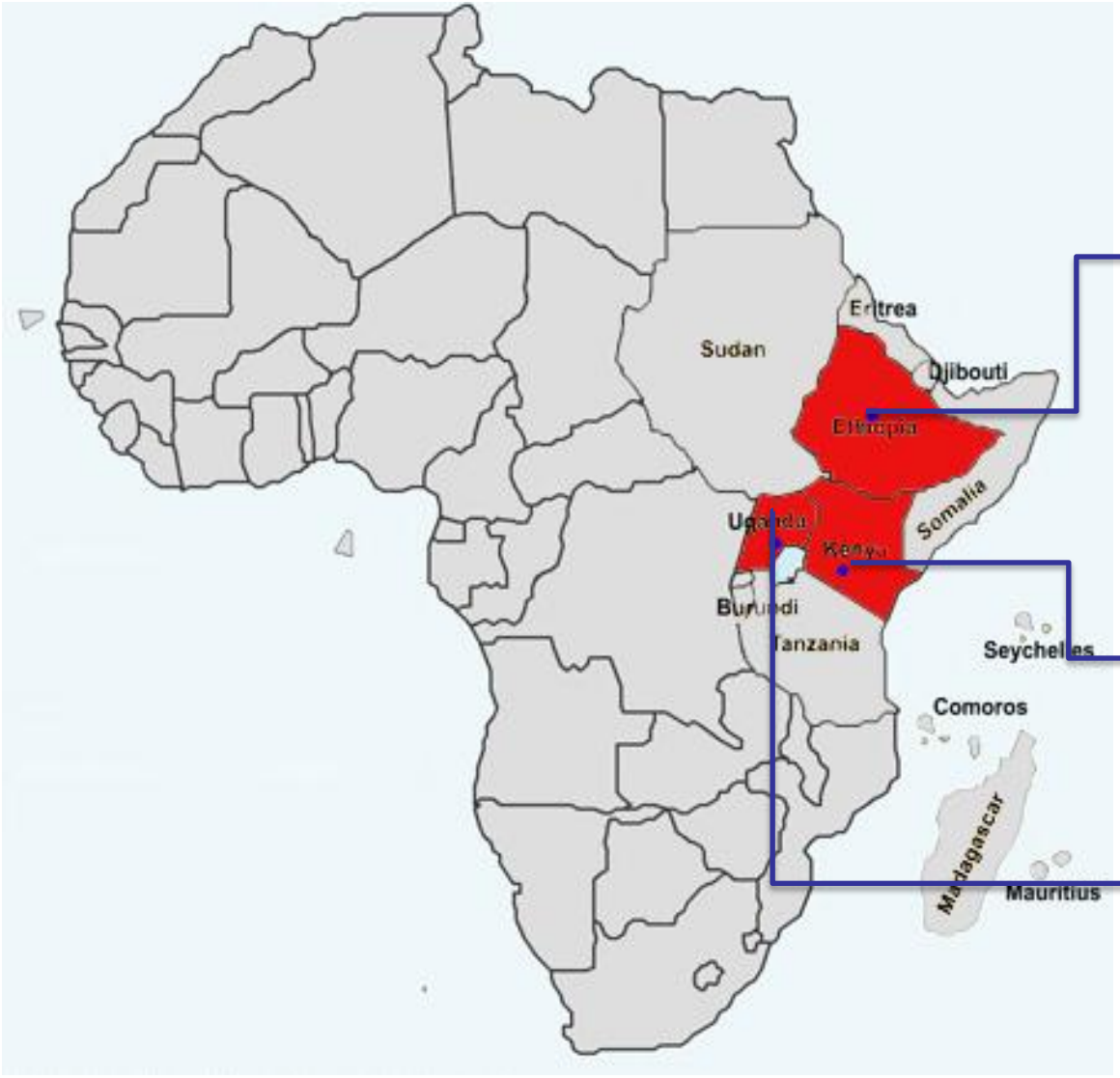
Implement improved non-motorized transport infrastructure

Apply travel demand management

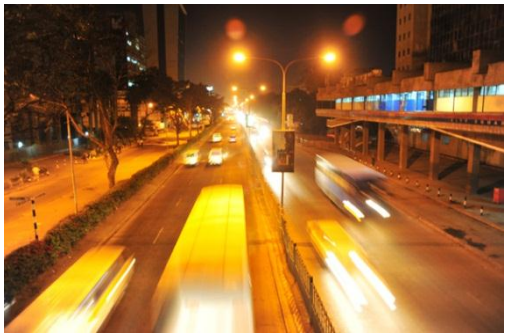
Other supporting policies

Reduce growth in private motorised vehicles

SUSTRAN Project cities



Addis Ababa



Nairobi

Kampala

Objective

Create the technical and institutional basis for implementing metropolitan sustainable transport networks.

Technical basis: Establish a demonstration corridor for sustainable urban mobility.

Institutional basis: Building awareness, understanding, skills in public institutions, the public and other stakeholders.

Project components

1. *Technical assistance and institutional support* for the development of a **comprehensive sustainable metropolitan transport system** in Addis Ababa, Kampala and Nairobi

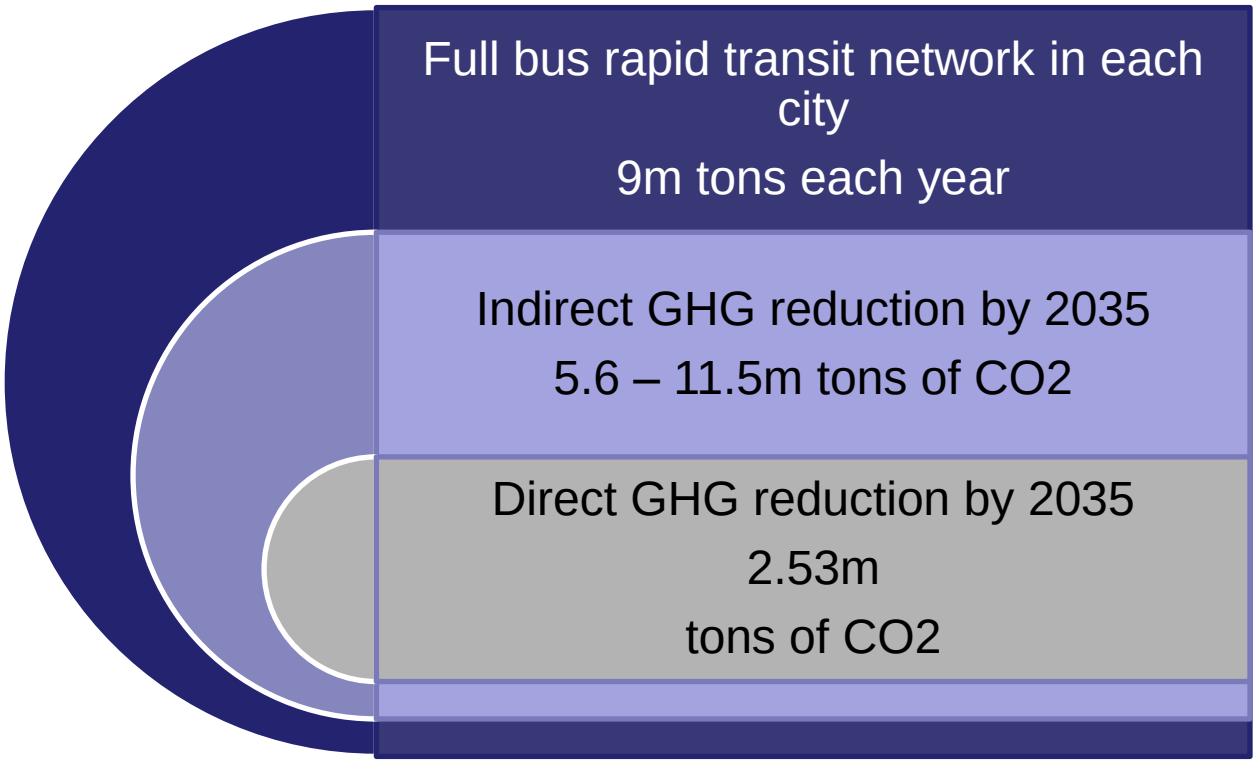
2. *Planning & design* for implementation of a **demonstration sustainable transport corridor** in each city: bus rapid transit (BRT), non-motorized transport (NMT) & transportation demand management (TDM) measures

3. Feasibility of application of **clean vehicles and fuel technology initiatives** in Addis Ababa, Kampala and Nairobi

4. Regional **capacity building, awareness raising and networking**

Anticipated project benefits

Anticipated project benefits:

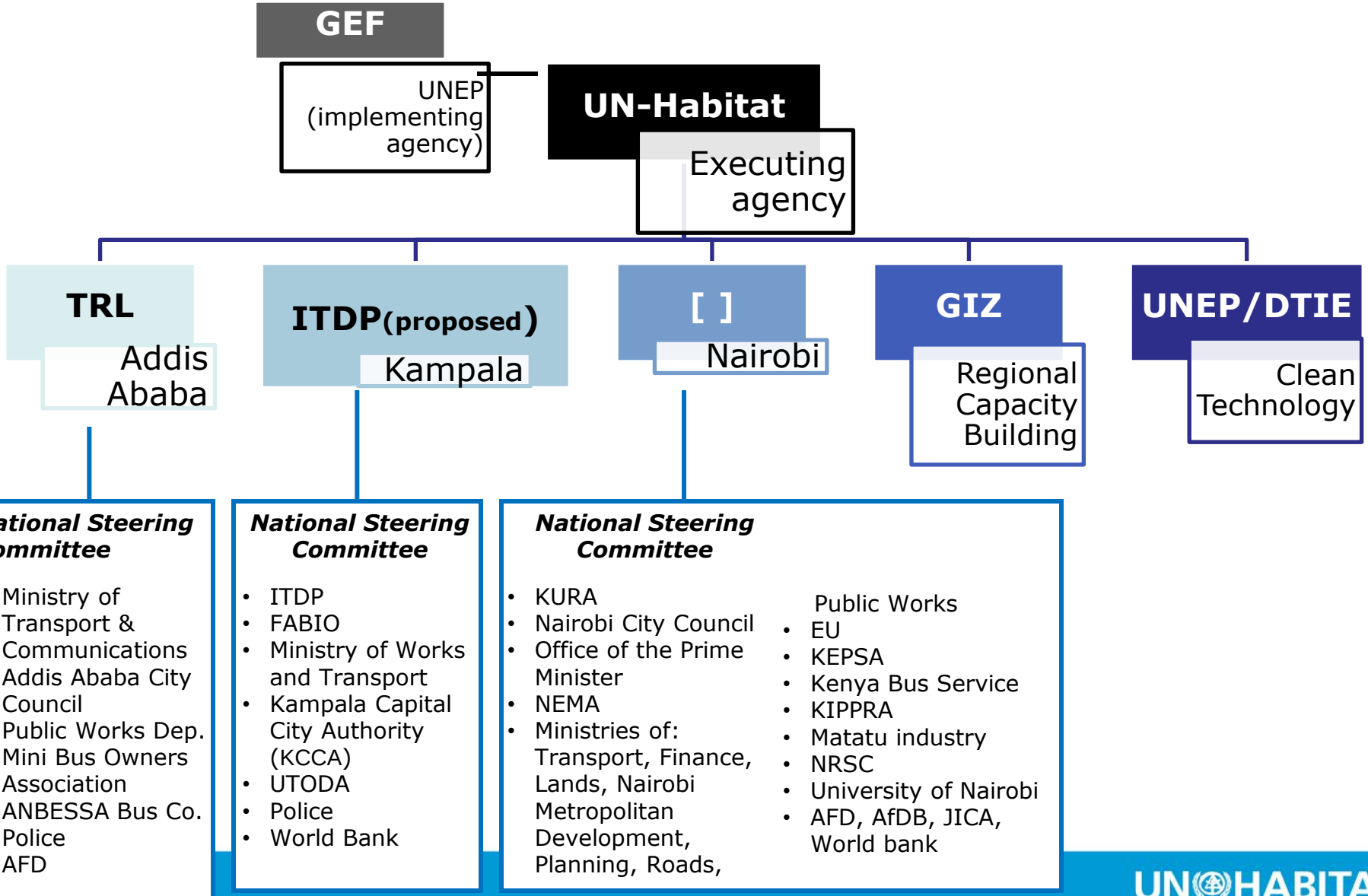


Coupled with land use regulations and as a natural result of better access, property value increases, stimulating denser urban development

If gold standard BRT is built, indirect GHG reductions through replication or expansion in that city. Expansion factor: 4 to 8 times.

Corridors in each city by 2035:
Kampala – 65 km.
Addis - at least 58 Km.
Nairobi - 75 Km.

Implementation partners

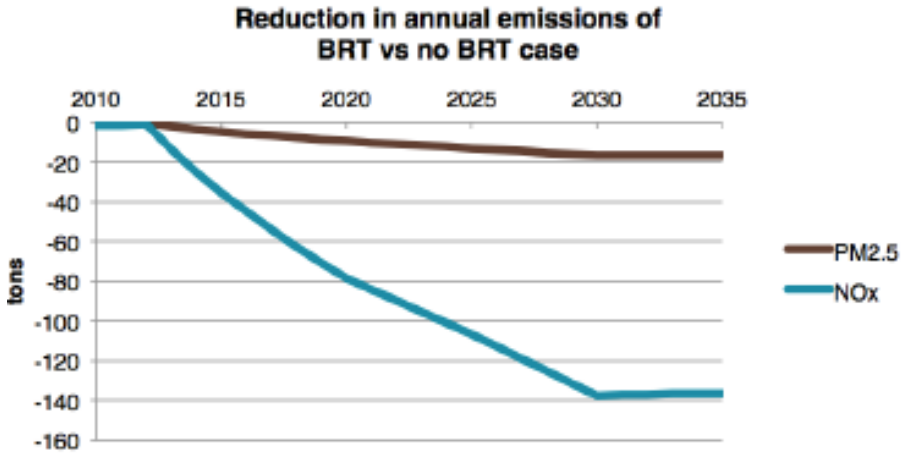


SUSTRAN lessons – Clean Technology

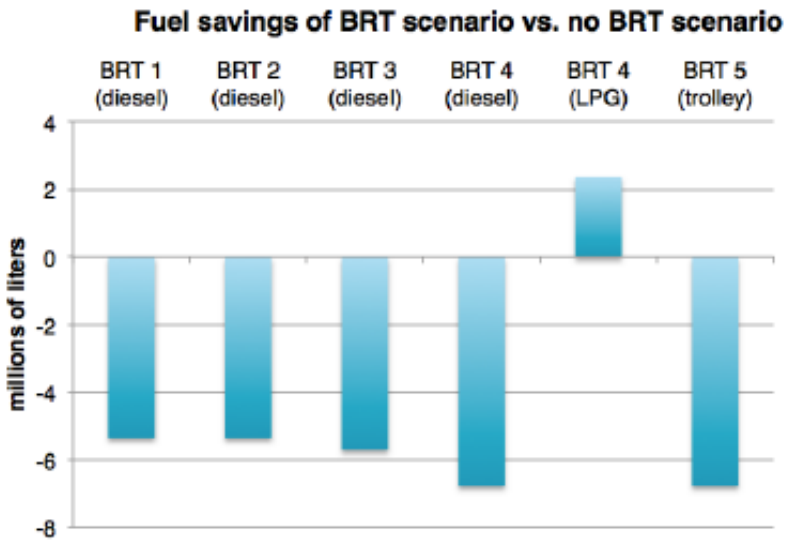
CLEAN TECHNOLOGY OPTIONS

Cost and benefit analysis carried out in the three cities based on:

- Technology availability
- Fuel availability and quality
- Maintenance practices and capacity.



ICCT report

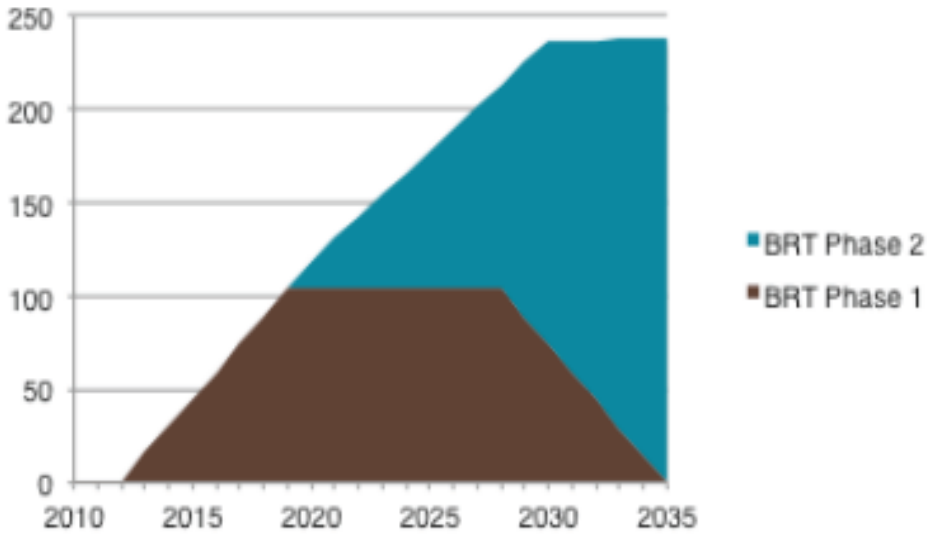


Main probable emissions reductions will result from modal shift to BRT system

SUSTRAN lessons – Clean Technology

City	Assumed BRT bus demand, 2030
Nairobi	295
Kampala	100
Addis Ababa	237

Fleet of BRT buses – ADDIS ABABA



Brown – Euro IV diesel
Blue -- Electric
Assuming that half of the buses will be deployed in Phase 1 (2013-2020) and half in Phase 2 (2020-2030). BRT bus fleet growth assumed to be linear over each phase (ICCT).

Hybrid diesel Euro IV buses recommended for the initial phase (2013-2020) and electric buses in the second phase (2020-2030)

Clean Technology assessment – Addis Ababa

Scenarios	Annual technology cost	Annual health benefits	Annual fuel savings benefit	Annual time savings benefit
BRT 1: Diesel BRT	$17.5	$0.14 to 1.4	$10.0	$7.7
BRT 2: Clean diesel BRT	$18.9	$0.14 to 1.5	$10.0	$7.7
BRT 3: Hybrid diesel BRT	$20	$0.14 to 1.5	$10.7	$7.7
BRT 5: Diesel + Electric trolley BRT	$22.4	$0.14 to 1.5	$12.7	$7.7

Summary of cost and benefits of technology scenarios in 2035 - ICCT

Clean Technology assessment – Kampala

Scenarios	Annual technology cost	Annual health benefits	Annual fuel savings benefit	Annual time savings benefit
BRT 1: Diesel BRT	$8.7	$0.02 to 0.21	$5.9	$3.4
BRT 2: Clean diesel BRT	$9.4	$0.02 to 0.22	$5.9	$3.4
BRT 3: Hybrid diesel BRT	$9.6	$0.02 to 0.22	$6.3	$3.4
BRT 5: Diesel + Electric trolley BRT	$9.7	$0.02 to 0.22	$7.5	$3.4

Summary of cost and benefits of technology scenarios in 2035 - ICCT

Clean Technology assessment – Nairobi

Scenarios	Annual technology cost	Annual health benefits	Annual fuel savings benefit	Annual time savings benefit
BRT 1: Diesel BRT	$23.7	$0.06 to 0.6	$19	$6.6
BRT 2: Clean diesel BRT	$25.6	$0.07 to $0.7	$19	$6.6
BRT 3: Hybrid diesel BRT	$26	$0.07 to $0.7	$20	$6.6
BRT 4: LPG BRT	$28.5	$0.07 to $0.7	$16	$6.6
BRT 5: Diesel + Electric trolley BRT	$24.6	$0.07 to $0.7	$24	$6.6

Summary of cost and benefits of technology scenarios in 2035 - ICCT

SUSTRAN Project lessons

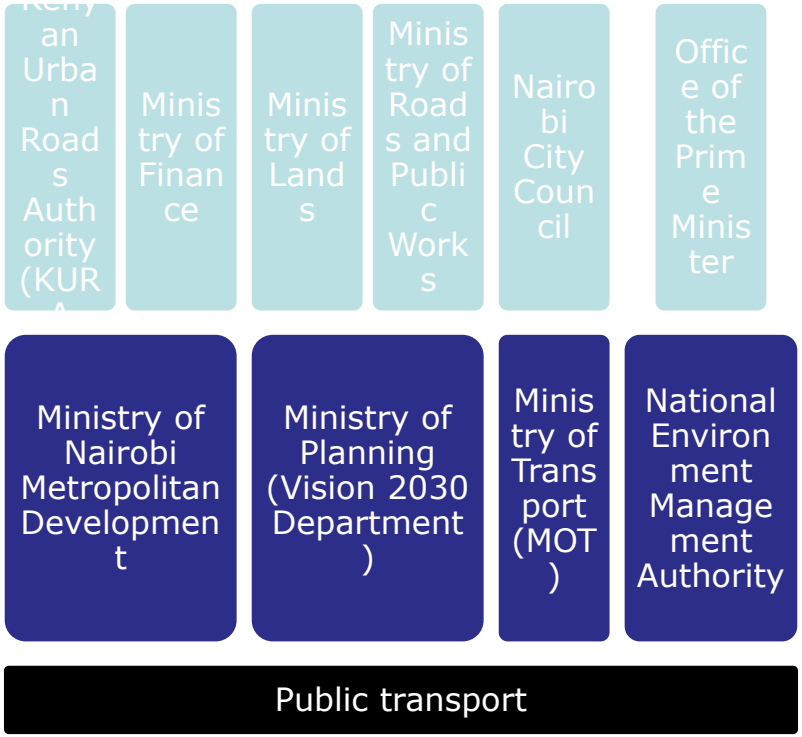
Prioritise capacity building for all key stakeholders via peer to peer sharing

Study tour and exchange of experiences in Addis Ababa, Kampala and Nairobi

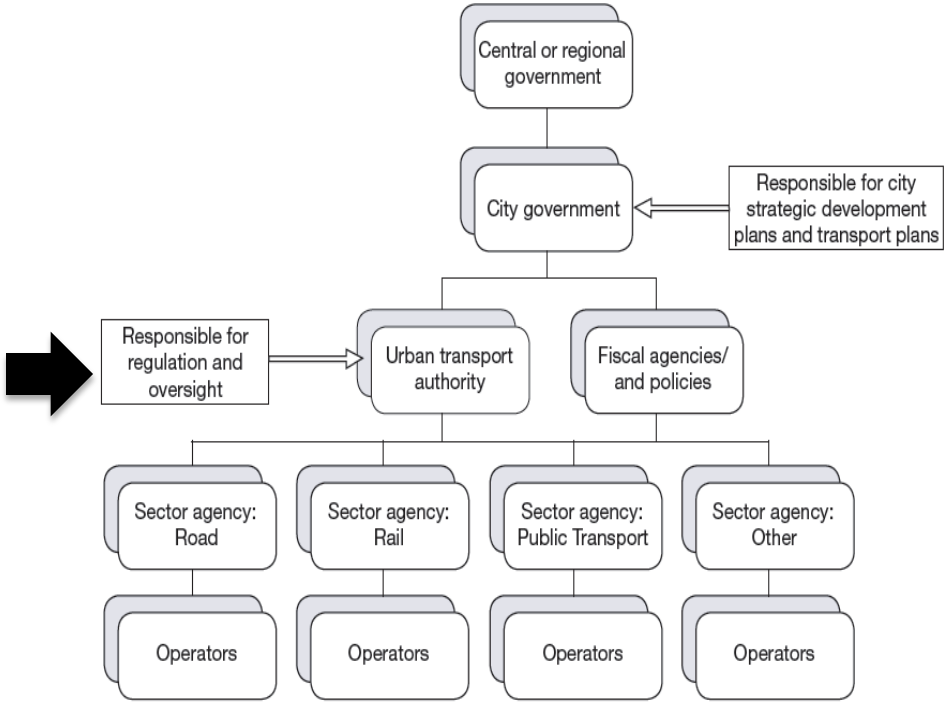
- Regional training, focusing in stakeholders engagement, industry transformation, integration of different modes and institutional development for mass rapid transit
- Regional collaboration (lessons from Johannesburg Rea Vaya BRT, Dar es Salaam DART implementation, Lagos LAMATA)
- Platform to advocate for national urban policies that support smart growth (compact cities, planned city expansion and infill)

SUSTRAN Project lessons

- Early in the project engage all stakeholders and involve local communities that are affected by the project;
- Support an independent transport entity, with decision making power and financial, legal, institutional and technical capacities.



Fragmented responsibilities



Source: Asian Development Bank

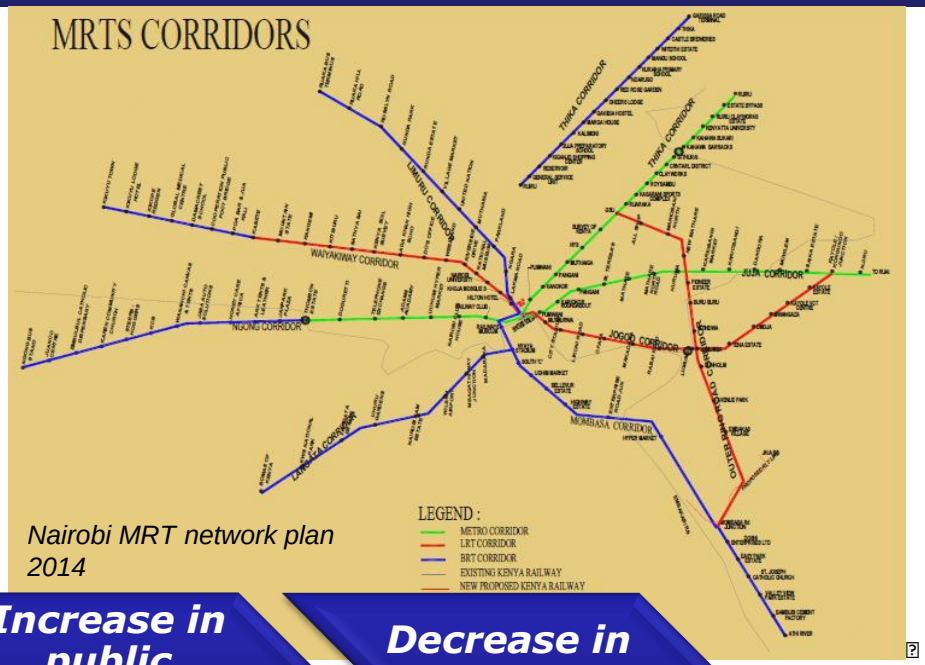
Clear responsibilities

SUSTRAN Project lessons

- Start with a pilot (learning curve)
- Focus on integration of different transport modes
- Integrate with urban planning and land use plan
- Use experience from other projects, but adopt the system characteristics to the local needs.

E.g. Integrated public transport

•Service quality car comparable
•Multi-modal network integration
•Schedule and connection integration
•Fares and tariff integration (one ticket)
•Infrastructure integration



Nairobi MRT network plan 2014

Integrated public transport → ***Meets the needs of customers*** → ***Increase in public transport use*** → ***Decrease in private vehicle use***

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