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WORKSHOP
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WWF/ICLEI Workshop report, 14-15 September, Kigali, Rwanda

Financing public transport planning, infrastructure and operations in sub-Saharan cities

Author: Gail Jennings

Reviewed by: Louise Scholtz, WWF-SA

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For more information, contact Louise Scholtz: lscholtz@wwf.org.za

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WWF South Africa's Policy and Futures Unit undertakes enquiry into the possibility of a new economy that advances a sustainable future. The unit convenes, investigates, demonstrates and articulates for policymakers, industry and other players the importance of lateral and long-term systemic thinking. The work of the unit is oriented towards solutions for the future of food, water, power and transport, against the backdrop of climate change, urbanisation and regional dynamics. The overarching aim is to promote and support a managed transition to a resilient future for South Africa's people and environment. The organisation also focuses on natural resources in the areas of marine, freshwater, land, species and agriculture.

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INTRODUCTION

It is not easy to finance public transport operations in cities where the urban form generates low passenger volumes and high peak-to-base (peak/off-peak) ratios.

In many African cities, the urban densities are substantially lower than those of European, Latin American¹ or Asian cities, which typically result in low passenger demand. Segregationist spatial planning and rapid urbanisation on the city peripheries have resulted in long trip distances among public transport users; population densities along public transport corridors are low, and travel movements are tidal. Coupled with what are usually decades of under-investment in public transport, it is unlikely that services in these complex urban environments will be able to operate subsidy-free.

Every city grappling with similar urban forms, financial constraints, and transport inequity faces similar challenges. Almost every African city is planning some form of public transport improvement. Like Cape Town and Johannesburg, many other Sub-Saharan African (SSA) cities are implementing, planning or considering what they hope to be transformative or catalytic BRT projects that replace the current paratransit industry; these cities include Lagos (Nigeria), Kampala (Uganda) and Dar es Salaam (Tanzania).

¹ Bogota (with its Transmellio BRT system) is approximately 13 to 14 times denser than Cape Town, for example.

OVERVIEW

This workshop took its starting point from WWF's briefing paper 'Planning for Financially Sustainable Public Transport'², which considered some of the ways in which public transport planning and infrastructure has been funded and financed in various countries. The premise was that subsequent operational shortfalls are inevitable, and therefore considered (1) ways in which these shortfalls could be met, and (2) alternatives to implementing the costly, comprehensive-corridor approach to public transportation that is the most commonly proposed intervention in Sub-Saharan Africa.

The objective of the workshop was to share knowledge and learn from the experiences of other cities. In order to achieve this, the workshop was structured as a cluster of interactive discussions punctuated by expert input to stimulate thinking and debate.

Themes and topics for discussion

Alternative sources of revenue

- Advertising on vehicles
- Other local government grants
- Provincial co-operation
- Ring-fencing of fuel levy
- Rates income allocations
- Congestion pricing
- Land value capture
- Carbon taxes
- Vehicle licencing
- User-pays principle (tolling)
- Developer contributions
- Equitable share contributions

Reducing the costs of providing public transport (including improving efficiency):

- Making better use of what we have
- Incremental changes / upgrades
- Paratransit service improvement
- Infrastructure-lite (enhanced buses)
- Using existing road space rather than build new lanes
- Lower-cost interventions
- New business models that use minibus-taxis as feeders
- Efficient demand analysis (eg base demand of current minibus volumes, and only put in stations and stops when you are sure of demand....)
- Travel Demand Management / demand-side management

² Citation: Jennings, G (2017) 'Planning for financially sustainable public transport services', briefing series for WWF-SA, Low-Carbon Passenger Transport Solutions, 2017

Improving financial sustainability for minibus-taxi sector

- Advertising (on-vehicle)
- Improved customer service (eg wi-fi on-board)
- Rank management
- Formalisation
- Business development
- Mapping and passenger information

Subsidies (tied to the user, ie demand-side, rather than supply-side)

- Means-testing
- Distance-based
- Geographically based targeting
- Job-seeker concessions
- Student travel

The prepared workshop agenda was shortened by half a day, to allow City Challenge participants to make up for time lost due to logistical challenges and flight delays by team members. We thus reduced speaker input and focused on participant input – but ensured that all topics were covered through informal discussions after the formal workshop.

WORKSHOP PARTICIPANTS

City officials and Transport Authority staff from Dar es Salaam (Tanzania), Lusaka (Zambia), and Kampala (Uganda), as well as individuals from Kigali (Rwanda), staff from WWF Cape Town (South Africa), ICLEI (South Africa) Lusaka and Kampala, and speakers Gail Jennings (research consultant) and Bukeka Mahlutshana (former CEO of Tshwane Transport and now independent consultant). Additional input by Manisha Gulati (C40) and Helen Rourke (Development Action Group) was facilitated via Skype^{3 4}.

Participants noted various hopes and expectations from the workshop:

- To learn how other cities have funded their BRT systems;
- To learn how other cities have made the change from small minibus taxis to large public transport vehicles;
- In particular, to learn from Dar es Salaam, which has developed a local context specific BRT system;
- To consider ways in which to come up with uniquely African solutions that do not require massive investment;
- To discover ways in which to convince politicians to make the right decisions;
- To understand models of incorporating current public transport operators into new systems.

³ The draft report was circulated among participants, and comments incorporated in the final version.

⁴ Due to technical challenges Rourke's presentation was curtailed, but her presentation was subsequently circulated to all participants.

CITY SPEAKERS: CHALLENGES FACING INDIVIDUAL CITIES

Input by Transport officials for Dar Es Salaam,
Lusaka, and Kampala

Lusaka, Zambia

Kalumba Kalumba and Bwalya Funga, Lusaka City Council

The public transport system in Lusaka (2 million people and 375 sq km) is made up **mainly of 14-seater minibus-taxis, and is served by four bus stations.** There is no urban passenger rail service, although there is an inter-city railway as well as coach (65-seaters) system for long-distance travel.

Public transport trips originate in either the townships or suburbs, and movement is in a radial pattern (there are six, heavily congested main roads) toward the main bus station in the CBD.

According to studies undertaken, which involved trip modeling and cost analysis, the annual loss due to Lusaka traffic congestion is estimated at about US\$350 million or 1.5-3% of the national GDP. A Lusaka motorist loses US\$3.5 or more per day due to traffic congestion.

On average, spending on public transport services accounts for about 26% of all household expenses in Lusaka. Low-income households spend up to 40% of their income, while high-income households spend less than 10% on transport on average.

Currently, public transportation fares in Lusaka range from ZMW 4.20 to ZMW 9.00 ZMW per single trip. This is equivalent to USD 0.80 to USD 1.00. This puts Lusaka among the cities with the most expensive public transport systems on the continent.

In Zambia, the major sources of funding for transport systems are:

- Government grants and loans, international donors;
- Local authority income (property rates, levies rent, and driver/operator fees).

There are no subsidies of any kind, although feasibility studies are underway.

Particular challenges

- There is erratic and inadequate support from central government to the local authority
- There is an inability to raise adequate finances from local sources, and funds raised locally, such as fuel levies, water taxes and road licences, are required to be transferred to central government.
- The politicization of activities in markets and bus stations contributes to poor revenue collection and decision-making. Vested interests rely on their relationships with decision-makers, who are persuaded to follow individual preferences rather than policy direction.
- There is no explicit policy for financing local authorities.

Future actions

- A master plan for Lusaka has been completed, and working groups have been formed to spearhead transport infrastructure upgrade and development in the city. However, a weakness of the document has been a lack of stakeholder engagement and community involvement – one consequence is that people organize transport interventions that are not on the master plan.
- Government is considering PPPs for public transport infrastructure development – such PPPs are currently driven by corporate social responsibility programmes, who invest only in areas where they are relatively certain that their funding will not be diverted elsewhere.
- A Lusaka City Council Transport Department will be set up. Currently transport fits in under Engineering.

Kampala, Uganda

Leonard Mwesigwa, Transport and traffic engineer, Kampala

Kampala, with 10 million people (and an area of 195 sq km) contributes 60% of Uganda's GDP. The city's estimated **modal split is private vehicles (10%), public transport (30%), cycling & walking (60%)**. There is a passenger rail service, and buses are contracted to private entities.

Public transport is financed as follows:

- Grants and loans: 20%
- Government grants: 76%
- Local revenue: 4%

Particular challenges

Kampala, like many cities in Africa, lacks the finances to provide reliable public transport system.

- Pilot designs for BRT are ready, but funding has not yet been secured. The World Bank has been approached for funding, but it requires the formation of an implementation agency first. These institutional reforms are taking significant time to plan and implement – but currently there is a halt on formation of new authorities/agencies as directed by the H.E The President of the Republic of Uganda.

- A lack of legal frameworks for other funding mechanisms is a further complication.
- The land tenure system in Uganda Land will doubtless lead to high resettlement costs should the need arise for large infrastructure projects (this increases the government counter-funding portion of any funding arrangement.)
- The city faces the challenge of balancing the social, economic and political issues regarding existing public transport modes – boda bodas, minibus-taxis and more recently, tuk tuks. “You can’t just say ‘get off the road’ to the other modes, as this is their livelihood’.
- Overall, **Uganda has no comprehensive sustainable transport policy, and political buy-in for developing such a policy environment is limited.**

Future actions

- A gradual transformation of existing public transport operators into potential BRT operators is planned. As a precursor to introducing some form of scheduled public transport service (whether BRT or another system) *matatu* operators are to be organized into groups, with elected leadership, to facilitate negotiations and possible contracting.
- Government intends to purchase buses, and the above *matatu* groups are to compete for the routes (competitive tendering).
- Government will provide bus lanes and junction priority for public transport.

Future ideas

- Officials identified the need for a **paradigm shift, whereby public transport is seen as a public good**, rather than a source of income for city authorities.
- The development of capacity among city managers for more effective use of planning and decision making tools – linking transportation planning & land-use planning.
- Measures aimed at increasing public transport patronage need to be emphasized. These could include:
 - Increased parking fees
 - Land acquisition for infrastructure could be funded by means of land-value taxation.

Dar Es Salaam, Tanzania

***Fanuel Kalugendo: system planning and design manager,
Dar Rapid Transit (DART)***

- DART (Dar Rapid Transit) Agency started bus operations on an interim service provision arrangement in May, 2016, 14 years after the concept was drafted. DART Agency was established in 2007, and **phase 1 of the BRT infrastructure (20.9 km) was completed in 2015.**
- An Interim Service Provider (ISP) has been given a three-year contract taking full risk of operations during this interim period, while government is on preparation to embark into full bus operations arrangement. The ISP therefore pays access fees to use the infrastructure.
- Pricing is on a flat-fare basis: **one trunk fare, one feeder fare, and one integrated fare.** Fares come nowhere close to funding the infrastructures development, it only cutter for the operation related costs of the system, which includes the bus loan repayment, ITS loan repayment, bus operators cost, and access fee (including maintenance, security and monitoring).

Particular challenges

- Key stakeholders, including the public, the private sector investors, and the Government, did not prepare in time regarding how to invest into the project.
- Mistrust among passengers of smart card or electronic ticketing.
- The Resettlement Action Plan (RAP) was delayed due to unavailability of budget.
- Costs further overran due to an increase in scope and the delay in the start of implementation.
- The extension of other business opportunities within the BRT system.



A motorcycle taxi in Kigali.

WWF SPEAKER INPUT (SUMMARIES)

The impact of transport disadvantage and inequity

Gail Jennings, research consultant

Just because public sector budgets are constrained, this does not mean that public transport should not be improved. Instead, what it means is that the available capital and operating funding should be spent wisely, to ensure a greater level of transport justice.

Transportation disadvantage or poverty, also referred to as mobility-related disadvantage or exclusion, is regarded as a **consequence of the inequitable distribution of transportation benefits and impacts**.

Transport disadvantage has been associated with an inability to access the goods and services necessary to live one's daily life, and the consequences are many: from ill-health, maternal mortality, high infant mortality rates; unemployment, poverty or inability to earn a living wage; time spent away from home, exposure to crime, noise, pollutants, poor education achievement; poor access to healthy, affordable food, scholar fatigue, casualties and injury; to social segregation, high crime rates, and social alienation and disengagement.

Unlocking private sector investment

Manisha Gulati – Programme Manager, C40 Cities Finance Facility

Cities face multiple challenges in sourcing infrastructure financing, as infrastructure projects typically require large injections of capital.

Transaction costs tend to be higher, while projects face liquidity risks and can involve a large number of parties, making them particularly complex.

Climate infrastructure can bring additional issues to financiers, as at times the technology or solution is perceived to be risky. The economic, social and environmental benefits and cost savings of sustainable infrastructure can be difficult to monetize.

The small size of projects and the lack of scalability also present a challenge and a perceived risk.

In addition to these challenges, cities face other constraints when seeking to deliver infrastructure, such as:

- Creditworthiness
- Legal powers
- International funds not directly accessible to cities
- Technical and financial expertise
- Market familiarity

Green bonds are one opportunity or climate finance mechanism available to cities for sustainable infrastructure. A green bond is essentially simply a bond whose proceeds are used to fund environmental projects; they operate along the same principles as normal bonds, and real benefits occur at a scale of \$100 million or more.

A city considering a green bond would need to take the following steps:

- Identify qualifying green projects and assets
- Arrange an independent review
- Design and set up tracking and reporting mechanisms
- Gain approval from regulators
- Set up processes to monitor use of proceeds and report annually

The C40 Cities Finance Facility (CFF) is bridging the gap between cities and finance. by facilitating access to finance for climate change mitigation and resilience projects in urban areas by providing technical assistance to develop cities' sustainability priorities into bankable investment proposals. What makes the Facility unique are the following features:

- demand-driven – the project is proposed by the city and not vice versa
- city-focused – the CFF is working in the best interests of supported cities
- strategic:
 - aligned with city climate action plans
 - social/economic benefits
 - linked to broader strategies of cities
- financially and technically sustainable
- is owned by the city and provides capacity development
- catalytic (for example, aimed to directly feed into implementing a bigger picture vision or goal)
- transparent
- outcome-oriented

The CFF does not provide capital, but provides a dedicated project advisor (in addition to a team of national and international consultants) who will co-ordinate the project and the work required to bring it to 'bankable proposal' stage. The CFF will then connect the city to relevant investors.

This process has been successful to date with Mexico City (where CFF is supporting the City to create financing models for 100 electric buses and cycle lanes); Bogota (Colombia) where the CFF is supporting the City to develop a 24km cycle highway as part of a bigger strategy to double cycling mode share to 10%; and Bangalore (India), with the development of a business model to allow replacement of the bus fleet of 7,000 buses including a pilot of 150 electric buses.

Having learned from the process in Mexico City, the CFF advises cities to:

- Keep an eye on the city's budget cycle;
- Include the city's financing department early in the project;
- Find the optimal institutional set-up for the project that fits the city and the investors;
- Know the banks and funds requirements but don't stick to one institution exclusively.

Alternatives to full-specification BRT – Building on what we have

Gail Jennings, research consultant

Infrastructure-heavy projects such as full-specification BRT systems are not necessarily appropriate when passenger numbers are low (which is the case in most SSA cities, because of spatial patterns).

There is substantial evidence, though, that the incremental implementation of network-wide public transport with BRT-like features (such as conventional buses with intersection right-of-way) has better cost-ratios than a full BRT on a single line. Strategic demand-side measures are able to reduce operations requirements both off and during peak and increase ridership (farebox income).

At the same time, there are a variety of options to improve the services provided by paratransit (*matatus*, minibus-taxis, etc). These options include: business organization and consolidation; measures to improve operations, such as cashless payment systems, vehicle management systems, speed governors and other information communication technology (ICT); driver development and business training; business diversification and the generation of additional income streams; vehicle renewal incentives, such as loans for vehicle purchases and repairs; and measures to improve the operating environment, such as infrastructure provision and road space prioritization.

The opportunities for the private sector participate in financing options for public transport

Bukeka Mahlutshana, Independent consultant

Grant funding for infrastructure is by and large is provided by government and other large funders – but significant operating shortfalls usually remains. **Funding by the private sector therefore needs to be encouraged** to ensure sustainable public transport systems.

Opportunities for private sector funding are particularly to be found in fleet procurement, ITS (fare collection systems, fleet monitoring systems, transport monitoring systems, etc), and operations.

KEY DISCUSSION POINTS THROUGHOUT THE WORKSHOP

“If we don’t invest in transport, we are heading for disaster.”

Key discussion points revolved around the following themes:

- Corruption, political will and vested interests within the current system and resistance to change. *“Politicians benefit from the current transport system – it’s like a ‘mini-mine’. So there’s resistance to changes because it might be the end of this gold mine.”*
- Concerns around Influence from the Global North (in particular consultancies, and ideas) on what is the right intervention for African cities. Delegates agreed that *“the solutions need to be home grown, and built on what we already have.”* *“So many proposals come to us. Now we have BRT, now we have this, then we have that... But we cannot end up taking each and every thing: we have to prioritise, but we don’t necessarily have the institutional capacity to do so.”*
- Related to the above point was a general caution around full-specification BRT. *“We need to go slow on BRT”*, noted one delegate, and another that *“We must think very critically about BRT, as we have learned that even with the size of South Africa’s economy they are struggling to make it work. We cannot exhaust a resource we don’t have.”*

- The importance of transparency in consultation and stakeholder engagement. Debate revolved around the challenges of convincing incumbent operators, for example, of the benefits of a BRT-like system, but at the same time deferring to their arcane knowledge: *“The operators know how things work, how they benefit. So whatever might be our theories about how [the current system] does not work, the operators know how it does in fact work for them.”* *“Real stakeholder engagement requires transparency from the beginning, and you have to be prepared to spend an enormous time explaining. It’s all well and good to roll out a service, but you have to explain it translates regarding your pocket.”*
- Salary mechanisms within new, formal systems. *“Operators do not take kindly to waiting to be paid by someone else.”*
- Institutional arrangements and governance structures for new operating companies: in particular, discussion centred on structuring governing boards, and the challenge in finding a mechanism for representation (*“Everyone wants to be on the Board – nobody wants to hear that can’t have two vehicles and a seat on the board!”*)
- E-ticketing. There was agreement that e-ticketing is the way forward, there was also consensus that these systems have limited acceptability among both passengers and operators. While pilots have shown that *“operators are getting more than twice what they used to get before they introduced e-ticketing, they get their money less often...”* *“Smart cards have issues of acceptance for users – when you can’t see where your money is, you can’t trust the system.”* Participants were largely in support of systems that involved ‘mobile money’ systems rather than smart cards.
- And finally, there was robust discussion around the role of engineers in transport decision-making, and the continuing infrastructure-led decision-making. *“We need social-scientists, not only engineers, when we prepare our plans,”* said one delegate. *“Public transport is about livelihoods, not movement.”*

ATTENDANCE LIST

Delegate	Email	Entitiy
Louise Scholtz	lscholtz@wwf.org.za	WWF SA
Gail Evelyn Jennings	gail@gailjennings.co.za	Facilitator
Bukeka Mahlutshana	bukekama@gmail.com	Tshwane BRT/Consultant
Helen Roarke	helen@dag.org.za	Development Action Group
Fanaul Kalugendo	fanuel.kalugendo@dart.go.tz	Dar Es Salaam
Edson Masereka	emasereka@kcca.go.ug	Kampala
Leonard Mwesigwa	lmwesigwa@kcca.go.ug	Kampala
Kalumba Kalumba	Kalumba.kalumba@gmail.com	Lusaka
Funga Bwalya	bwalyafunga@gmail.com	Lusaka
Manisha Gulati	Skype attendee	C40
Robert Ddamulira	rddamulira@wwfafrica.org	WWF Uganda
Bwendo Kabanda	bkabanda@wwfzam.org	WWF Zambia
Roy Namgera	rnamgera@wwftz.org	WWF Tanzania
Belinda Mills	belinda.mills@iclei.org	ICLEI



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Worldwide cities are stepping forward to reduce their rapidly increasing carbon emissions from passenger or freight transport. African cities are tackling the provision of accessible and effective transport services in contexts particular to our developing economies and rapid urbanisation patterns. Our cities face issues such as changing lifestyle aspirations, spatial economies with the poor relegated to the peripheries, complementary or clashing interactions between formal and informal transport providers, lack of public investment in transport infrastructure and services, and inherited policies and planning that did not factor in emissions implications.



This is one in a series of publications produced by WWF South Africa’s Transport Low-Carbon Frameworks programme under the auspices of WWF’s global One Planet Cities Challenge (see wwf.org.za/what_we_do/opcc). The transport project aims to provide a platform, expertise and perspectives to support labour, business and government in engaging with the challenges implicit in the shift to a low-carbon economy.



Why we are here

To stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature.

wwf.org.za/energy