A NEW PERSPECTIVE

SUSTAINABLE MOBILITY IN AFRICAN CITIES

UN-HABITAT
FOR A BETTER URBAN FUTURE

UITP

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UN-HABITAT is the United Nations agency for human settlements. It is mandated to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all.

UN-Habitat's Urban Transport Section promotes policies and models to achieve sustainable urban transportation systems across the Globe. Set against the overall mission of the organisation to promote socially, environmentally and economically sustainable human settlements development, the practical work places particular emphasis on promoting effective answers to the challenges of the rapid urbanization process in developing countries and the needs of the urban poor. At the same time, urban transport policy all over the world has to substantially contribute to solutions addressing global warming.

The International Association of Public Transport (UITP) is the international network for public transport authorities and operators, policy decision-makers, scientific institutes and the public transport supply and service industry. UITP covers all modes of public transport: metro, bus, light rail, regional and suburban rail and waterborne transport.

UITP acts as a platform for worldwide co-operation, business development and the sharing of know-how between 3,400 members from 92 countries. Furthermore, UITP is the global advocate for public transport and sustainable mobility, and the promoter of innovations in the sector.

BACKGROUND

The following report is the summary of the seminar 'Sustainable Development of Public Transport in Africa', held in Nairobi, Kenya, on November 10 and 11, 2009. The event was jointly organised by the United Nations Human Settlements Programme (UN-HABITAT), UITP (the International Association of Public Transport) and UATP (the African Association of Public Transport).

The meeting assembled experts from around the world to share knowledge and expertise with a focus on urban passenger mobility in Africa in preparation for the United Nations Commission of Sustainable Development's 18th and 19th sessions in 2010 and 2011. The joint declaration and this report synthesise the key messages from the event.

For UN-HABITAT, urban mobility is a key element of sustainable urbanization in response to social and economic challenges in developing countries as well as climate change. UITP, in its role as the professional body advocates the use and increased investment in organised passenger public transport, covers all modes of collective urban passenger transport, including bus, rail (metro, light rail and commuter), waterborne, cars and bike sharing. Its African division, UATP, focuses on the specific needs and requirements of Sub-Saharan Africa and its membership also includes those involved in transporting freight.

In 2005, UN-HABITAT and UITP signed a Memorandum of Understanding (MoU) to foster cooperation in the areas of sustainable mobility and public transport and which aims to combine research, policy advocacy, capacity building and expert assistance to improve the sustainability of cities worldwide.

INTERNATIONAL AGREEMENTS AND SUSTAINABLE DEVELOPMENT

In recent years, the international community has taken important decisions aimed at enhancing sustainable development worldwide. These include historic summits and high-level meetings such as the United Nations Conference on Environment and Development (UNCED), commonly known as the Earth Summit (Rio de Janeiro, Brazil, 1992) and the World Summit on Sustainable Development (WSSD, Johannesburg, South Africa, 2002).

Agenda 21, a key outcome of the Earth Summit, clearly mentions transport in Chapter 7, "Promoting sustainable human settlements development", and Chapter 9, "Protection of the atmosphere". Transport is part of the Johannesburg Plan of Implementation (JPoI, 2002). Countries agreed to promote an integrated approach to policy making, including policies and planning for land use, infrastructure, public transport systems and goods delivery networks with a view to providing safe, affordable and efficient transportation, increasing energy efficiency, reducing pollution, reducing congestion, reducing adverse health effects and limiting urban sprawl.

The United Nations Commission for Sustainable Development (CSD) was established in 1992 to review progress on the implementation of the commitments and goals set out in Agenda 21 and the Johannesburg Plan of Implementation. The CSD review and policy debate focuses on thematic clusters of selected topics and the goal is to advance global consensus on sustainable development in the various sectors.

Since CSD reviewed the topic of transport, together with energy, at its ninth, 14th and 15th sessions (2001, 2006 and 2007), significant new challenges have emerged for transport globally. Transport is again part of the 2010-2011 cycle. At its 18th session in May 2010, the Commission reviewed progress in implementation with regard to the thematic clusters of transport, chemicals, waste management, mining and the ten-year framework of programmes on sustainable consumption and production patterns. The review session focussed on the analysis of trends, issues and policy options while the policy cycle in 2011 will look at how to overcome constraints, obstacles and barriers to implementation[1].

This report and the declaration supports the concept that sustainable urban transport can play a significant role in efforts towards achieving the most broadly-supported development aims - the Millennium Development Goals - to eradicate extreme poverty and hunger and to ensure environmental sustainability.

1 UN Department of Social and Economic Affairs 2009

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LIST OF ABBREVIATIONS

CO_2	Carbon Dioxide
CSD	Commission of Sustainable Development
GDP	Gross Domestic Product
GHG	Green House Gas
IEA	International Energy Agency
JPoI	Johannesburg Plan of Implementation
MDG	Millennium Development Goals
MoU	Memorandum of Understanding
UATP	African Association of Public Transport
UITP	International Association of Public Transport
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UN-HABITAT	United Nations Programme for Human Settlements
WSSD	World Summit on Sustainable Development

01. INTRODUCTION

Efficient and inclusive urban mobility is essential for economic and social development since it enables citizens to access goods, services, jobs, markets, education opportunities and social contacts. Access to mobility enhances quality of life but growing motorisation and unmanaged transport in many cities is also associated with congestion, air pollution, traffic-related accidents, the waste of productive time and other social and environmental costs.

This report intends to raise awareness of sustainable urban transport systems among policy-makers in developing cities and their advisors. It outlines examples of successful policies and reforms as well as cutting-edge operational and technical expertise. The aim is to support progress in moving towards more sustainable transport systems and to outline key messages from the combined knowledge of all actors active in the transport sector which will include private and public operators, local, regional and national governments, the service and supply industry, scientific institutions and civil society organizations.

1.1 GLOBAL DEVELOPMENTS AND SUSTAINED URBANIZATION

Half of the world's population now live in cities and by 2030 this figure is expected to rise to two-thirds. A total of 95 per cent of future urban growth is expected to occur in developing countries, where motorization is rising rapidly and creating major challenges[2].

Generally, transport and mobility can be regarded as essential preconditions for achieving sustainable development. However, looking at recent trends in developing countries it is clear that a lack of adequate transport infrastructure and affordable transport services has exacerbated rather than alleviated widespread poverty and social exclusion and is a major obstacle to the achievement of the Millennium Development Goals (MDGs).

Cities in developing countries are facing severe traffic congestion and worsening air pollution. The health effects of urban air pollution are estimated to cost approximately more than 5 per cent of the GDP in developing countries[3]. Fewer than 20 per cent [4]of urban residents own and use a private car while the majority relies on informal or formal public transport, taxis, walking or cycling.

Despite this, cities have the potential to contribute to economic growth and wealth generation of developing nations but the rapid deterioration of the living environments in heavily-congested cities and towns threatens to undermine their ability to be engines of growth. Roads unsafe for walking and cycling and the decreasing efficiency and reliability of public transport affect the poor the most but the increasing levels of air pollution and congestion hampers economic vitality and quality of life in general, which has a negative impact on everyone.

The recent worldwide financial and economic crisis has had a direct impact on transport. Fewer funds are available for infrastructure investments and there has been a dampening of travel demand. However, it is likely that these effects are only temporary and that demand for travel will increase further in much of urbanised Africa[5].

Current trends suggest that few cities in developing countries will be able to afford the investment required for transport infrastructure and services to satisfy either present or future mobility demands. At present, the majority of the investment in transport infrastructure caters to the needs of the users of private motor vehicles, who are still a minority in most African cities. Sustainable urban transport policies have to address such imbalances, which has immediate relevance for alleviating social inequity.

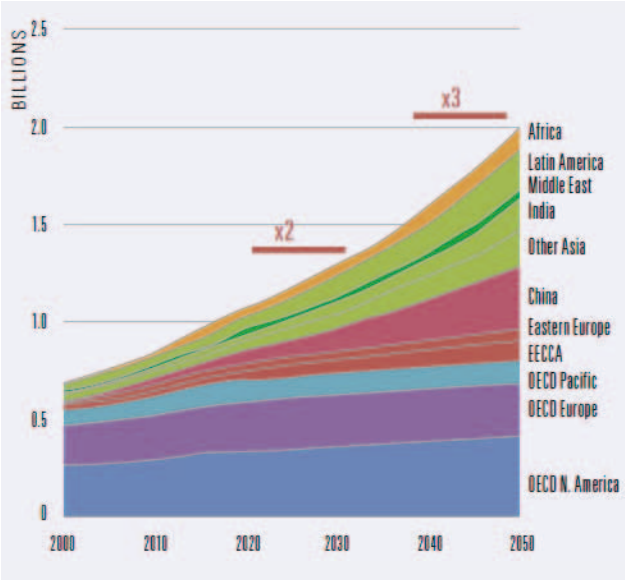
2 *United Nations Department of Economic and Social Affairs, 2008*

3 *UNEP, 2009*

4 *Trans African Consortium, 2010. Note: This figure is considered to be quite conservative and in many cities in Sub-Saharan Africa it is nearer 10 - 12per cent whilst it may be slightly over 20per cent in South African cities.*

5 *For further information please see presentations give at the meeting (http://www.unhabitat.org/content.asp?cid=7997&catid=639&typeid=11&subMenuId=0)*

FIGURE 1: **Total Stock of Light-Duty Vehicles by Region 2000-2050**



Source: GEF/WBCSD 2004

1.2 URBAN TRANSPORT AND CLIMATE CHANGE: THE ROLE OF DEVELOPING COUNTRIES

Sustained urbanization and motorization have contributed to an unprecedented rise of worldwide greenhouse gas (GHG) emissions. According to International Energy Agency (IEA) estimates in 2009, urban areas currently account for more than 71 per cent of global greenhouse gases and their share is expected to rise to 76 per cent by 2030. Although per capita CO_2 emissions are far higher today in developed than in developing countries, it is estimated that 89 per cent of the increase in CO_2 from energy use over the next 20 years will be from developing countries.

Global emissions from transport are growing faster than in any other sector. Drawing on the most recent figures of the World Energy Outlook of the IEA, about 23 per cent of the global GHG emissions are attributable to transport-related energy use. Private cars, light duty vehicles and trucks are the main source of these emissions. Car ownership worldwide is set to triple to more than two billion by 2050 and, given current trends, transport energy use and CO_2 emissions are projected to increase by nearly 50 per cent by 2030 and more than 89 per cent by 2050.

According to the IEA, even with deep cuts in CO_2 emissions from all other energy-consuming sectors, it will be difficult to meet targets such as stabilizing the concentration of GHG emissions in the atmosphere at a level of 450 ppm of CO_2 equivalent if transport does not reduce emissions to well below current levels by 2050. This will require changing the amount that urban residents travel and the way technologies to improve vehicle efficiency and shifts to low-carbon fuels will be adopted[6].

However, it is unlikely that technology alone will deliver socio-economic development goals since the widespread adoption of clean fleets or clean fuel is frequently hampered by a lack of funds and resources. African citizens, governments and businesses for the most part cannot afford the most up-to-date technology. This is due not only to financial constraints, but also because many of these technologies need specialised maintenance and require imported spare parts.

Due to its emission relevance, the transport sector plays a critical role in reducing or stabilizing GHG emissions globally. Since effective climate change actions are incomplete without addressing the overall system performance of the transport sector, sustainable mobility in urban areas deserves special attention and it also tends to be easier to organize alternatives in urban settings.

6 IEA, 2009

02. SUSTAINABLE URBAN TRANSPORT IN AFRICA

A busy street in Gikomba market, Nairobi, Kenya. © UN-HABITAT

The situation of and the impacts caused by the transport sector in Africa matches the picture described for developing countries in general. Fast-growing cities demand increased transport services and they are especially prevalent in Africa.

2.1 CHALLENGES FOR SUSTAINABLE URBAN MOBILITY IN AFRICA

Africa is home to over 13 per cent of the world's total population and is growing at 2.7 per cent per year, which is the world's fastest rate. The share of Africa's urban areas in relation to the average annual population growth is expected to more than double between the years 2000-2030.

Africa also faces special challenges when it comes to urban mobility. Over the past few decades, African cities have experienced rapid motorization rates, which resulted in chronic traffic congestion, extremely high levels of local pollution and poor levels of service for public transport compounded by inadequate transport infrastructure. Increased population, widespread poverty and inequality combined with limited public capacity and resource shortages exacerbate the challenge of moving people and goods efficiently.

Traffic congestion is an everyday problem that is hampering Africa's economic development and every day a lot of productive time is lost. Regardless of income or social status, the conditions under which residents of African cities travel has become more and more difficult and, for many, is close to being intolerable. Unfortunately, it is often those that have the least that have to pay the highest price on – both financially and socially.

How well rapidly-growing cities are able to meet the demand for urban transport will have profound implications for economic productivity, social equity and environmental protection and will be reflected in the standards of living. Nairobi, for instance, is one of the fastest-growing cities in the world, with more than

5 per cent annual growth[7]. The city faces significant challenges to reconcile demand for transport with the present infrastructure and what it can afford to change as it tries to move its citizens towards better and sustainable transport.

Decisions taken today on infrastructure development and urban planning will lock cities into mobility behaviour patterns for the next 30 to 50 years. Therefore, it is vital that these decisions help African countries to take low-carbon development opportunities rather than following conventional economic models based on fossil fuels.

BOX 1: **Key challenges faced by African cities in promoting sustainable transport**

- Over-regulation and duplicating legislation
- Unclear and overlapping responsibilities
- Planning authorities are constrained in their implementation authority
- Historical legacy or recent conflicts
- Limited human resources and funding capacities at local and provincial level
- Inefficiencies in the transport system are considered normal
- Inertia and lack of political will to face up to the challenges of change and a lack of appropriate best practice examples

City managers in Africa are frequently constrained in their capacity to design and implement effective sustainable transportation planning and policy. Particularly important factors are:

- Lack of reliable data on levels and trends in motorization and GHG emissions
- Limited financial resources and planning expertise
- Inadequate institutional frameworks and limited experience at local government level
- Lack of political engagement in favour of sustainable urban transport
- Lack of coordination in policy development
- Inadequate learning and scaling up from existing projects
- Weak capacity or absence for monitoring and evaluating of existing practices

7 See 6

2.2 INFRASTRUCTURE AND ROAD MAINTENANCE

Road transport is the predominant mode in Africa for trips of more than 10 km. There is not only a lack of paved roads, with 7 km per 100 km², compared with 170 km per 100 km² in Europe, but 40 per cent of these roads are in poor condition. Moreover, there is also a lack of facilities for non-motorized transport modes such as bike lanes or footpaths that would make walking more attractive and safer.

BOX 2: **Douala, Cameroon focuses on comprehensive measures for road rehabilitation, new vehicles and services improvements**

In Cameroon, renewed public involvement in the state bus company has brought higher attention towards roads used by the majority of Douala's citizens.

In the past, many bus breakdowns were caused by the poor state of roads in Douala. As part of reforms in the formal and informal transport sector, and in line with a citywide road rehabilitation programme, roads used by mass transit are now a priority for rehabilitation and maintenance measures.

Citizens are also benefiting from 520 new city buses that have been put into service and 1,500 new jobs secured with a public/private partnership. As part of the city's commitment to promote mass transit, the service coverage of the single tariff ticket has expanded, making formal public transport more attractive than its informal counterpart.

In the context of the conference, it was stressed that, to achieve sustainable urban development, it will be necessary to link road infrastructure improvement with enhanced public transport and NMT facilities to shift expected transport growth partly onto these modes.

In contrast, if roads are built without such provisions, this will induce more individual motorized traffic and increase congestion, pollution and other negative effects frequently associated with rising car volumes. An example for such an integrated approach was presented by Mr. Martin Lami of the City of Doula, Cameroon (see Box 2).

2.3 INTEGRATING TRANSPORT AND LAND USE PLANNING

In African cities, transportation and land use policies are frequently considered separately, which results in the inefficient use of resources and higher environmental damage. Due to a prevailing lack of coordination, construction of new transport infrastructure often disrupts neighborhoods and results in the relocation of urban residents to the periphery, increasing their travel distances and expenditure on transport. Residents of low-income neighborhoods are especially prone to displacement and more vulnerable to changes in their mobility patterns.

For achieving sustainable mobility, it is crucial to integrate infrastructure development with land use planning. Agenda 21 calls upon

"all countries to integrate land use and transportation planning to encourage development patterns that reduce transport demand; adopt urban transport programmes favoring high occupancy, as appropriate; encourage non-motorized modes of transport by providing safe cycle ways and footways in urban and sub-urban centers in countries, as appropriate; devote particular attention to effective traffic management, efficient operation of public transport and maintenance of public infrastructure; promote the exchange of information among countries and representatives of local and metropolitan areas; and reevaluate present consumption and production patterns in order to reduce the use of energy and natural resources." [8]

In recent years, more and more African city governments have recognized the need for an integrated city planning approaches. As presented in the workshop, the City of Mombasa is now looking at a comprehensive low-carbon city (re)development strategy, which will include transit-oriented planning, parking management and the creation of high-quality walking areas in the historic city centre.

Better planning is also increasingly on the policy agenda at regional and national level. In recent years, a number of transport and city master plans have been developed. The Republic of South Africa, for instance, has approved a national transport master plan for the year 2050 to enhance integration and efficiency of land use and transport planning countrywide. The future will show whether such plans will actually expand access and improve the quality of mobility for urban residents in Africa.

The workshop also served as a platform for presenting best practices for integrated land use planning, both from developed and developing countries. Based on the input by Mr. Armin Wagner of GTZ, Box 3 outlines an overview of transport and demand management tools, which have been proven to be successful in many cities around the globe.

BOX 3: **Transport demand management tools**

Transport demand management includes a variety of instruments as highlighted by the following table:

Planning Instruments	Integration of Land Use and Transport Planning Public Transport Promotion Strategies for Non-Motorised Modes	e.g. Transit-oriented development e.g. Priority at Intersections e.g. Cycling Policy
Regulatory Instruments	Physical Restraint Measures Traffic Management Measures Regulation of Parking Supply Low Emission Zone Speed Restrictions (30 km/h)	e.g. Pedestrian Zones ITS Maximum parking limits In City Center In built up areas
Economic Instruments	Road Pricing Tax Incentives Parking Pricing	e.g. during peak hours e.g. for cleaner vehicles Off- and on-street parking
Information Instruments	Public Awareness Campaigns Stakeholder Conferences Driver Training/ Eco Driving Promotion of Mobility Management in Companies	E.g. participation in Mobility Weeks On transport policy documents e.g. for City drivers e.g. Employer Passes, flexible work hours
Technology	Promotion of Cleaner Technology	e.g. Green Procurement

Source: GTZ 2009

8 UN Department for Social and Economic Affairs, 1992

03. TRAVEL MODES AND AVAILABILITY OF INFRASTRUCTURE AND SERVICES

Motorbikes and minibuses as transport options in Lagos, Nigeria. © Julius Mwelu/UN-HABITAT

The choice of the mode of transport for any trip is rarely an entirely free choice and often determined by financial resources available to the individual. At the same time, travel choices are shaped by the mobility needs of communities, the quantity and quality of mobility options or complementary alternatives, land use factors as expressed by the location of employment opportunities or services and housing affordability.

Despite rapidly growing motorisation across the continent, on average 80 per cent of Africa's urban residents do not have access to personal vehicles and a large proportion does not even have any access to motorized transit services. Non-motorised modes of transport such as cycling and walking make up the overwhelming majority of all urban transport trips while the lion's share of motorized trips are made on informal minibuses or motorcycle taxis[9].

Many low-income residents who are living on the outskirts of large cities such as Nairobi face a wide variety of everyday problems related to mobility. Access to employment, social services and activities or educational opportunities requires long daily commutes. It is quite common for four hours or more to be spent in traffic every day. The lack of decent transport options wastes both time and productivity.

The past 30 years have seen the widespread demise of formal public transport across Africa. Nowadays, the sector is almost entirely dominated by the privately-operated informal sector. This has resulted in poor levels of service quality and transport being costly for the urban poor with many residents spending 30 per cent or more of their income for travelling to their work place.

9 Trans-African Consortium, 2010a

Different modes of transport sharing the road in Lagos, Nigeria. © UN-HABITAT

3.1 NON-MOTORIZED TRANSPORT AND ROAD SAFETY

In Africa, the majority of trips are still made by walking and cycling. For example, in Dakar, Senegal, walking typically represents 71 per cent of all trips[10]. It is believed that the same is true in many other African cities yet providing precise figures on a comprehensive basis is difficult since non-motorized trips are often not counted in official census surveys.

The perception of walking and cycling has frequently had a negative connotation since both are often associated with poverty rather than being seen as an indicator of progress and efficiency. As a result, these environmentally-benign modes of transport are often neglected in the design and modernization of either new or existing urban transport infrastructure investments.

Under prevailing road infrastructure conditions, the co-existence of non-motorized and motorized transportation systems poses severe safety problems in most African cities. Pedestrians, cyclists, bullock-drawn carts, luxury cars, lorries and tractor-trailers share the same roadway. Traffic-related injuries and mortality rates are extremely high by global standards — especially for pedestrians, since many streets do not have sidewalks. Overall, the road design in most African cities lacks almost all of the features and facilities that would enable safe and efficient road use for all.

Another area of concern is the increasing use of motorized two-wheelers. In Douala, Cameroon, for instance, motorcycle taxi use has grown tremendously, and now represents 30 per cent of all motorised trips[11]. This trend creates safety issues due to the poor or zero training undergone by many riders. In particular, many do not have a driving license, have not been trained in safety or customer service and are not properly insured to carry paying passengers.

Overall, participants of the conference agreed that the image of walking and cycling needs to be improved across Africa to make it fashionable and attractive to use a bike, especially for trips of less than 15 km. New bike loans or share schemes, as introduced in many cities across the developed and developing world, could be a good option if adapted to the needs and conditions of Africa. Such new models would also create jobs for the management and maintenance of these systems. Another application for NMT, presented by UN-HABITAT, is the use of bicycle as a tool for water and sanitation service provision (see Box 4).

10 See 9

11 Trans-African Consortium, 2010b

Work in the bicycle workshop. © UN-HABITAT

BOX 4: **Bikes for water, sanitation & income generation in Kenyan informal settlements**

UN-HABITAT has been working in three informal settlements (Kibera, Mirera-Karagita and Kamere) to demonstrate the viability of non-motorized transport as an alternative, efficient and sustainable tool for water and sanitation service provision and for generating new income-earning and business opportunities amongst low-income communities. A utility bicycle workshop has been set up for the design, production, and sale of NMT load-carrying vehicles. Self-sustaining solid waste management and water vending businesses and enterprises have been developed, and transport has become more accessible for the residents.

Load-carrying bicycle in Nairobi, Kenya. © UN-HABITAT

3.2 AVAILABILITY OF PUBLIC TRANSPORT

Collective passenger transport for the majority of urban residents in Africa is largely dominated by the informal sector while taxis or the private car mostly provide mobility for the better off. Today, more than 90 per cent of the sector is dominated by individual private operators who tend to focus on maximizing profit and minimizing costs rather than providing a service for the community.

The informal transit sector is therefore strongly market-based, mostly unregulated and focuses on low-capacity and often low-quality service. As cities grow, this becomes more of a problem as the increasing number of vehicles required to satisfy the demand causes congestion and parking issues. Public transport users suffer from non-regulated and non-integrated fares that might often change by the hour and demand or due weather conditions as well as peaks in oil price. They also suffer from low levels of security and safety. The predominance of the informal sector reduces revenues for formal transport operations, making the need for subsidy higher, and this hampers public investment in transit-related infrastructure.

A first step towards a well-organized and operated transport system would be to create the right framework and to develop incentives that would integrate the present incumbents such as minibus owners and taxi drivers. Institutional reform, as put in place in the cities of Dakar, (Senegal) or Douala (Cameroon), have helped to organize public transport better and brought significant benefits to the community[12]. Insights on the improvements made in Dakar were given by Mr. Ousmane Thiam of UATP. An overview can be found in Box 5.

12 *Trans-African Consortium, 2010a*

BOX 5: **Public transport experiences from Dakar, Senegal**

In 1999 Dakar's transport was dominated by the informal sector and was extremely fragmented and difficult to manage. Problems with the transport system were thought to be costing about 4% of GDP. There were more than 1,200 minibus operators and converted vans nicknamed 'car rapides' and 'ndiaga nidaye', with the majority of operators owning between one and four vehicles. This is still typical in most African cities. In Dakar the vehicles were on average 28 years old and the operators were not in a financially stable position to replace them.

Reform stared in 1997 with the creation by the state of a coordinating body with executive powers for urban transport in Dakar named Conseil Executif des Transports (CETUD). In 2001, 446 operators were regrouped into 13 cooperatives (GIE – Groups of economic interest – Groupements d'Intérêt Economic) to provide transport service under franchise.

This scheme supported by the World Bank makes joining the GIE attractive to private operators as they can benefit from preferential financial conditions though this officially recognized body. The state offered a scrappage scheme for the destruction of old vehicles and now some 500 new vehicles

(minibuses) and 400 city buses have been bought. A 99% recovery rate of the loans over a 3-5 year period demonstrates the success of this system.

Indeed, these reforms benefitted the whole transport system – informal transport operators' dominance dropped from 95.4% to 66%, the private public bus operator increased its market share from 3 to 13% and the small suburban rail network also became more attractive. In addition to the creation of these bodies and the commitment to fleet renewal, the CETUD is also responsible for Dakar's mobility plan.

Further benefits to the community included the introduction of area-wide ticketing, routes and passenger information. Compensation could be paid to operators and training in financial management has been organized. By reducing the number of operators, integrated transport planning and integration between the different operators was made easier and more efficient. Bilateral aid has been forthcoming and this would not be an option without the creation of these formally-recognized bodies.

Lagos, Nigeria – BRT Lite. © UITP

Traffic congestion in Yaounde, Cameroun. © UITP

In 1999, public transport in Dakar was dominated by the informal sector, which made it extremely fragmented and difficult to manage. It was estimated that deficits associated with the transport system cost about 4 per cent of GDP. There were more than 1,200 minibus operators and converted vans nicknamed '*car rapides*' and '*ndiaga nidaye*'. The majority of operators owned between one and four vehicles, a typical pattern in most African cities. In Dakar, the vehicles were on average 28 years old and operators were not in a sufficiently stable financial position to replace them.

Reform started in 1997 when the government created a coordinating body with executive powers for urban transport in Dakar, the Conseil Executif des Transports (CETUD). In 2001, 446 operators were regrouped into 13 cooperatives (GIE – Groups of economic interest – Groupements d'Intérêt Economic) to provide transport service on a franchise basis.

The scheme, supported by the World Bank, made joining the GIE attractive to private operators since they were able to benefit from preferential financial conditions through this officially recognized body. The government also offered a scrappage scheme for the destruction of old vehicles, which led to the consecutive acquisition of around 500 new minibuses and 400 city buses. A 99 per cent recovery rate of these loans over a three to five year period demonstrates the success of this system.

Moreover, these reforms benefitted the entire transport system: informal transport operators' dominance dropped from 95 to 66 per cent, private public bus operators increased their market share from 3 to 13 per cent and the small suburban rail network also became more attractive. In addition to creating these new bodies and promoting fleet renewal, the CETUD has also been responsible for Dakar's mobility plan.

Further benefits to the community included the introduction of area-wide ticketing, routes and passenger information. Other components included the option to pay compensation to operators and training in financial management. By reducing the number of operators, integrated transport planning and integration between the different actors was made easier and more efficient. It was also possible to mobilize bilateral aid, which would not have been an option without the creation of these formally-recognized bodies.

3.3 RE-INTRODUCING MASS TRANSIT IN AFRICAN CITIES

In recent years, Bus Rapid Transit systems (BRT) have been successfully implemented in many Latin American cities and the idea is now gaining popularity in Africa. Two projects have already been implemented and there are several others in the pipeline. Valuable lessons can be drawn from these first experiences in the region.

"Rea Vaya" in Johannesburg, South Africa, the first full BRT system in Africa, and the BRT "Lite" system in Lagos, Nigeria, demonstrate that the idea is feasible for African cities and that these new models can help to reduce congestion and air pollution, reduce travel time and create new jobs. Box 6 offers a summary of the BRT scheme in Johannesburg as presented by Ms. Coleen McCaul. For the Lagos BRT "Lite", an introduction was given by Mr. Erik Kouakou (Box 7).

BOX 6: **Rea Vaya ("We are going"), Johannesburg – a world class BRT system**

To prepare for major international events such the 2010 FIFA Football World Cup, the city of Johannesburg recognized the need for establishing an effective mass transport system. With most commuters having to travel long distances between the townships and the urban centre where they work, mini buses or motor taxis were the only option available at that time.

Institutional reform was the first step towards a more efficient public transport system in the most populous city in South Africa, and the BRT system Rea Vaya is the end product of an extensive consultation process. A fast turnaround from planning to operations is one of the main advantages of BRT as a public transport system, along with its affordability. An initial 25km corridor of BRT with Euro IV city buses replaced at least 1,100 minibus taxi vehicles. Phase 1 of the Rea Vaya already carries nearly 34,000 passengers daily and links the poorer township of Soweto to central Johannesburg. The city paid for most of the construction: bus way infrastructure and stations, an IT system for passenger information and fare collection. Private operators are contracted to run the bus services, collect the fares and maintain the stations.

The implementation of the BRT system led to a significant reduction in the air pollution and congestion associated with the old minibuses. The intervention also had a significant role in improving the professionalism of the minibus and taxi industry. Furthermore, the government strengthened its role in the design, monitoring and operations of the public transport network in line with the integrated transport plans. Overall, the reforms implemented brought wide benefits across the system. Minibus taxi drivers now have improved working conditions and they currently earn well above the average worker.

One of the key learning experiences that can be replicated elsewhere is how taxi and minibus owner and drivers were given employment by inviting them to become shareholders in the new system. It was important to work with these owners and drivers since 575 taxis needed to be withdrawn from serving the corridor of the new BRT. Rea Vaya also created about 700 new jobs in the 1st phase and 3,300 temporary jobs during the construction period1.

Rea Vaya Fleet in Johannesburg, South Africa. © www.reavaya.co.za

BOX 7: **The BRT "Lite" System in Lagos, Nigeria**

In Lagos, BRT operations began in 2008 with a short 22km corridor along a congested bottleneck and were designed to carry more than 200,000 passengers daily. The scheme is referred to as a BRT 'Lite' system as it does not have all the attributes of a full BRT system and the corridor is only partly segregated from the other traffic. However, it was put in place quickly, taking only 15 months from conception to operation, and was delivered at a cost of Euro 1.2 million per km. After the introduction of the system, 35 per cent fewer vehicles carry the same number of passengers and fuel consumption fell by 32 per cent along the corridor, reducing the total annual output of CO2 by 25,000 tonnes.

A new institutional body and regulatory framework was put in place and great care was taken from the early planning and design phases to include both the local trade unions and taxi and mini bus owners who were already serving the route. They were invited to be stakeholders in the new organisations and take up the newly-franchised routes.

Construction of the BRT infrastructure and its maintenance are the responsibilities of the local government, whilst the operations are franchised to the private sector. Operators are responsible for the purchase and maintenance of their own vehicles and for the profitability of their operation.

The success of the new service was also helped by an extensive media campaign, including local radio and TV talk shows, prior to opening. The public enthusiastically adopted the system as fares were 30 per cent cheaper than on the informal transport vehicles and passengers enjoyed a 35 per cent reduction in travel time with waiting time at bus stops cut by an average of 55 per cent and by 73 per cent at peak times.

3.4 SKILLS, STAFFING AND OPERATIONAL CHALLENGES IN THE PUBLIC TRANSPORT SECTOR

The informal transport sector represents the majority of operators in the transport system of African cities. Services are run on a day-to-day basis rather than with any long-term perspective, and can be changed or cut on the whim of the owner. The prevalence of informal transport operators has resulted in a lack of experienced personnel to run formal services. This lack of qualified staff is especially prevalent in the areas of middle management with skills in staffing, customer relations, technical operations and maintenance.

While there are few rail services still in operation across Africa, there are good train services in South Africa. A promising new rail line in Gauteng province linking Pretoria and Johannesburg marks the first route of a series of ambitious projects to revitalize the country's rail sector. Obviously, rail systems are more capital intensive than bus systems and need skilled staff for their implementation and maintenance. On the other hand, they have considerably longer life cycles of around 30 years, while road-based systems require major maintenance after only five years.

Apart from walking and cycling, buses are used for the majority of inner-city trips. Where formal public transport is available, in such areas as Addis Ababa (Ethiopia), Abidjan (Côte d'Ivoire) and, to some extent, Nairobi (Kenya), the city bus is the workhorse. However, as buses become more complex to maintain and repair, the skills gap becomes more pronounced and mechanics need to be not only able to read and write and understand basic engineering but also be computer literate as well.

In the formal sector, the average age of public transport vehicles is between five and 15 years old. There is little information on the average age of privately-owned informal sector vehicles. In Dakar, Senegal, for instance, prior to the bus reform the vehicles used were on average 28 years old. Generally, the prevailing approach in Africa is to acquire second-hand vehicles both in the formal and informal sector. The main reasons are the poor state of the roads, leading to a quick degradation of new vehicles.

In the context of the TransAfrica[13] project, data was gathered on average operational costs in the public transport sector. Results show that more than 30 per cent of the operating costs faced by bus operators are spent on spare parts and tyre replacement. In combination with expenditure for energy, these items represent the lion's share of the operational costs in public transport. This pattern underscores the need to secure energy supplies, to use reliable and proven technology rather than expensive complex electronic systems and the importance of keeping roads in good condition.

Figure 2: Average Operational Expenditures of the Public Transport Sector (surveyed in the TransAfrica project)

Fuel and oils	61.65 per cent
Spare parts	23.94 per cent
Tyres	7.67 per cent
Labor	4.85 per cent
Other	1.89 per cent

The Trans-Africa project[14] proved that the overall expense of buying poorly-performing older vehicles is higher in the long run and it causes more environmental harm. SOTRA, the public transport company in Abidjan, Ivory Coast, conducted research comparing the economic sustainability of buying new (0-4 year old) and second-hand (4-7 year old) vehicles. According to their experience, the higher capital investment of newer buses can be offset within two to four years when compared to the costs of a higher number of breakdowns from cheaper, older buses[15].

13 Trans-African Consortium, 2010b
14 TransAfrica is a EU funded project lead by UITP from the 7th Framework Programme
15Trans-African Consortium, 2010a

04. MOVING FORWARD: OPPORTUNITIES FOR SUSTAINABLE URBAN MOBILITY IN AFRICAN CITIES

URBANIZATION TRENDS AND TRANSPORT CHALLENGES

Overall, participants of the workshop agreed that transport will be a key element for the future socio-economic development of African cities. As in other parts of the world, well-functioning transport networks are seen as the basis of economic activity, social participation and significant generators of employment and wealth.

Despite all the contemporary challenges, rapidly-growing cities in Africa also have a range of opportunities for urban development and developing mobility patters that are less car-oriented when compared to other regions and more socially inclusive.

As the experiences exchanged at the event and beyond demonstrated, there are a number of positive trends already visible. BRT is becoming more popular in Africa as seen by new systems in Johannesburg, South Africa; Lagos in Nigeria, and soon in Dar es Salam, Tanzania, with plans for several other cities. Dakar in Senegal started its public transport reform in 1997, which included a reorganisation of informal transit operators and a scrappage scheme for the destruction of high-emission vehicles and the acquisition of around 500 new minibuses and 400 city buses.

In Africa, many metropolises are only at the beginning of their urbanization paths so there is a chance to avoid mistakes made in many developed countries. There, planning and designing cities prioritized cars and not people in cities for a long time. In many industrialized countries, the post-World War II emphasis of urban design was on improving conditions for car travel while neglecting the needs of non-motorized transport users and public transport.

ADDRESSING THE ENERGY CHALLENGE IN TRANSPORT

Another challenge that can be turned into an opportunity is the need to address the global energy challenge. Over the next 20 years, transportation is expected to be the major driving force behind a projected growing world demand for energy, mostly from developing countries and emerging economies. Further resource depletion, pollution and rising expenditures for fossil fuel imports can only be avoided if low-carbon growth options are pursued.

Consequently, there is an urgent need for energy-efficient, affordable mobility systems that provide access to markets, employment, education and enhance living standards and quality of life — all of which are critical for sustainable economic development and the alleviation of poverty.

In response, the central planning challenge for African cities today is to devise strategies that increase mobility for broad segments of the population at an affordable price without causing major environmental problems.

TOWARDS A RANGE OF INTEGRATED MOBILITY OPTIONS

The efficiency and reliability of any transportation system depends on the multiplicity of options that are available. A transportation system dependent on a limited choice of transport modes is far more susceptible to inefficiency, disruption and system failure than one with a wider choice. What is needed is an urban space in which alternative modes are allowed to cater for different needs and wallets within a set of rules ensuring safety, affordability and a fair allocation of public road space.

INFORMAL PUBLIC TRANSPORT

High-quality public transport systems that cater for all segments of society can be a catalyst for the achievement of the Millennium Development Goals since they provide safe and affordable access to housing and employment opportunities across metropolitan areas.

However, in most African cities the contemporary public transport sector is currently still dominated by loosely-regulated informal sector operators and uncoordinated transit systems. This creates a challenge for gathering data and statistics on the economic value of transport and also poses economic, environmental and social risks. For instance, unregulated and underpaid informal transport can exert a downward pressure on pay and working conditions in the entire sector and is often associated with ignorance towards environmental protection requirements.

Generally, there is greater job security for those working in the formal sector or in informal sector operations that adhere to some of the principles of formal regimes. In these regimes employees receive minimum levels of

training on customer care and safety which can also serve them in other jobs outside of transport sector. The passenger is also reassured.

In Africa, formalization of the sector could take various forms. One example is the consolidation of a multitude of different operators into a few formal transit authorities bodies as implemented in Dakar, Senegal or in Lagos, Nigeria, where the new BRT system is operated under franchise by one of the largest associations of private operators, which were established by the former owners of informal minibuses who have now regrouped.

Formalization can result in significant benefits both in terms of increased safety and salary reliability, as earnings are not based on the number of passengers carried. At the same time, if new public transport systems are being planned, it is vital for successful implementation to integrate the informal sector as early as possible and some level of resistance will be inevitable. The most recent example can be seen in South Africa, where the established taxi industry was initially heavily opposed to the introduction of the new "Rea Vaya" BRT system, despite efforts being made to integrate it into the new system.

For implementing mass transit options, the formalization of transit operations is crucial. Since the frequency of services is carefully calibrated, bus breakdowns and other operational failures have to be minimized, which implies that buses must be kept in excellent condition. Hence, even if BRT systems replace some existing informal operations, they offer at the same time a substantial number of better-qualified jobs in operations, maintenance and customer services[16].

TRAVEL DEMAND MANAGEMENT

Opportunities for growing African cities also exist in terms of travel demand management. To reduce demand for inner-city travel, better integration of development plans with transport infrastructure can result in more effective investments. Planning for compact cities and neighborhoods shortens trip distances and makes public transport more economically viable and reduces the need for motorized travel by co-locating settlements, work and school facilities. Compact communities not only make walking more desirable and public transport more attractive, if planned right they also contribute to safer and more liveable cities in general. Therefore, enhanced systems for public and non-motorized transport in well-designed communities can have significant benefits for enabling access to better housing and employment options for the poor.

16 UNEP 2008

TRANSPORT INVESTMENTS AND JOB CREATION

Experience from other continents demonstrates that investments in improving urban mobility can have significant impacts on economic growth and poverty alleviation. In most established economies, the transport sector is a cornerstone and an important source of jobs.

Furthermore, there are substantial multiplier effects since every direct job in the transport service sector usually results in 2 to 2.5 indirect jobs in other sectors. For instance, investments in urban transport infrastructure not only creates jobs during the construction phase, but also maintenance jobs as well positions in transport operations. Even though there are no comprehensive global employment statistics for public transportation available, there is no doubt that the sector is a major employer in most countries[17] and that expanded investments would also have far-reaching benefits for African cities.

SUSTAINABLE TRANSPORT INVESTMENTS AND OPPRTUNITIES FOR THE GREEN ECONOMY

Yet beyond the direct and indirect economic impacts, investments in sustainable urban mobility can also be important elements of strategies for moving towards green economies, a task many governments and companies worldwide have already placed high on their agenda.

Due to the importance of the transport sector both in terms of its economic impact but also in regard to its share among total of energy consumption, applying green technologies and processes in urban mobility will be a crucial component of comprehensive investment strategies towards more sustainable ways of production of goods and services in the entire economy. Proven technology exists for mass transit options using alternative energies, but these are all still quite expensive, especially for the developing world. UITP has developed a voluntary charter to promote sustainable development principles within the public transport sector and to collect good examples from all types of urban transport actors.

In relation to urban passenger travel, a major investment opportunity exists for IT applications and telematics that support the provision of comprehensive alternatives to car use by providing real-time and tailored information on alternatives such as public transport or rental bikes. At the same time, the application of new technologies, such as better traffic management or more comprehensive "Intelligent Transportation Systems" can be a driver for enhancing the operational efficiency of the entire transport sector and reducing energy consumption of all forms of motorized transport.

17 UNEP 2008

Another impetus towards greener mobility can be catalysed through promoting vehicle technologies that provide mobility that is free of local pollution impacts. If options such as electric bikes, cars, buses, trams or urban rail systems are being powered by renewable energy sources they can account for significant positive environmental advantages both at the local and global level. They would also be major drivers for advances in production and storage of solar energy besides providing zero or low-carbon mobility options. At present, Africa is at a disadvantage in respect to introducing these modes as the electricity supply is usually neither sustainable nor stable enough to cope with this extra demand but they are still promising options for the future.

Overall, a key opportunity for moving towards green economy investments emanating from urban mobility are the new and creative linkages and synergies established between old and new technologies, and the positive effects of investment in new physical hardware, new management processes and IT applications. The global spread of new approaches such as car sharing, citywide rental bike systems, demand-oriented off-peak transit services and demand-oriented road pricing utilize conventional technologies but require an intelligent combination with new IT systems as well as comprehensive customer information and operational models that increase effectiveness and capacity of existing physical infrastructure assets in cities. In this respect, Africa should be encouraged to develop appropriate local options which are adapted to the local conditions based on such schemes.

To mobilize direct private sector investment as well as engagement of the capital markets in large infrastructure projects, cities have to offer reliable urban planning and solid financial management.

A NEED FOR POLITICAL WILL AND COORDINATED APPROACHES

To mobilise the necessary instruments, there needs to be the design and implementation of programmes which combine political will with alternative investment paradigms to enable a shift away from car-oriented cities towards more economically- and environmentally-sustainable transport modes. Governments have to commit themselves to face the challenges of motorization and population growth to avoid the serious mobility problems in fast-growing cities within the next 20 years. In some cities traffic congestion already causes significant economic inefficiencies and unnecessary social and environmental costs.

To work towards livable urban regions, coordinated national and local policy interventions are needed to establish affordable, economically-viable, socially-acceptable and environmentally-sound urban transport systems. Integrated urban transport planning, supported by fiscal and regulatory policies and paired with the development of new technologies and the scaling up of projects, are key to achieving transport systems that meet the mobility needs of citizens as well as adhere to the principles of sustainable development.

State, local and private interventions for improved public transport can range from the provision of infrastructure as in Lagos, Nigeria, and to some extent in Douala, Cameroon; the provision of vehicles as in Accra, Ghana, or where necessary the subsidizing operations as in the case of SOTRA, the public transport company in Abidjan, Ivory Coast. Initiatives with strong involvement of the private financial sector can entail financing mechanisms with advantageous conditions to private operators to enable replacement of outdated high-emission vehicles with cleaner more modern ones.

THE GOBAL LEVEL: RIO + 20

The approaching anniversaries of the United Nations Conference on Environment and Development and the World Summit on Sustainable Development (RIO +20) provide an opportunity to re-examine progress towards sustainable cities against the experience of the past two decades. The global economic downturn has undoubtedly added complexity to the implementation of Agenda 21 and the Johannesburg Plan of Implementation. As both public and private sector resources become more constrained, it is more critical than ever to set investment priorities and to determine how resources can be deployed with maximum cost effectiveness and impact. In this spirit, the conference participants agreed on the Declaration attached in the Appendix of this document.

APPENDIX

A. DECLARATION ON "SUSTAINABLE PUBLIC TRANSPORT FOR AFRICA"

The following declaration is a key output from the seminar on "Sustainable Public Transport for Africa", validated by those participating:

OBSERVATIONS

The delegates:

1. Recognize that the window of opportunity for Africa to attain sustainable transport is estimated at 10-15 years
2. Affirm that economic development in Africa will be seriously hampered if sustainable transport systems are not established within this time period
3. Acknowledge that multi-modal transport choices such as walking, cycling and public transport are the backbone of sustainable transport
4. Observe that cities are designed and road space is allocated for car use rather than public and non-motorised transport
5. Note that road transport is still primarily powered by fossil fuels (more than 90 per cent) and contributes significantly to environmental pollution
6. Confirm that energy security, poverty alleviation and environmental protection, including climate change, are all closely linked to transport choices
7. Observe that a significant proportion of urban dwellers in Africa do not have access to motorized transport
8. Regret that public transport in Africa is mainly based on low capacity vehicles which leads to congestions and pollution

RECOMMENDATIONS

Delegates, members and invited guests for the UITP/UATP & UNHABITAT event held in Nairobi on 10 – 11th November 2009 make the following recommendations to national and regional leaders, government ministers, the business community and civil society to:

I. Support institutional reforms to enable an integrated rather than modal approach to transport planning
II. Provide adequate and appropriate funding and financing options to make sustainable transport in Africa a reality
III. Manage transport demand, especially in urban areas, using regulatory and economic instruments as well as policies and measures that includes integrated land-use and transport planning, transfer of technology and awareness-raising activities in order to achieve appropriate and sustainable transport systems in Africa
IV. Support and promote safe, clean, efficient and affordable transport systems for economic development and social inclusion
V. Promote high capacity mass transport systems and infrastructures in urban areas
VI. Address rural transport needs through appropriate infrastructures and technology
VII. Encourage the use of renewable, clean, unleaded and low-sulphur fuels for a healthy and pollution-free environment as well as improving vehicle life spans
VIII. Support mass urban transport as a formal and profession economic activity deploying innovation and commercial disciplines within a clear regulatory framework

We commit to working in a collaborative fashion, and to create platforms for operators, organizing authorities, users and other stakeholders for the exchange of best practices, knowledge and tools to help build capacity.

B. LIST OF PARTICIPANTS "SUSTAINABLE PUBLIC TRANSPORT FOR AFRICA", NAIROBI, KENYA – NOVEMBER 10-11, 2009

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C. PROGRAMME "SUSTAINABLE PUBLIC TRANSPORT FOR ARICA", NAIROBI, KENYA – NOVEMBER 10-11, 2009

Hour/Heure	Theme - Speaker	Actors / Acteurs
Tuesday November 10th / Mardi 10 Novembre		
08.00-09.00	Registrations / Enregistrements	
09.00-9.45	**Opening session / Allocutions de bienvenue Chairman / Président : Heather Allen**	
	Welcome / Discours de bienvenue	**Ousmane Thiam,** UATP President/Président and UITP Vice-Président/Vice-président **Tony Dufays,** Director of Regional Offices & Services/ Directeur des Régions – UITP, Belgium **Sara Candiracci,** Energy and Transport Policies Section – UN-HABITAT, Nairobi, Kenya
	Official opening / Ouverture officielle	**Chris Obure,** Minister of Ministry of Roads and Public Works /Ministre des routes et infrastructure, Kenya
	Keynote address / Discours d'introduction	**Anna Tibaijuka,** Executive Director/Directeur Exécutif – UNHABITAT, Kenya
9.45-10.15	**Introductive session**	
	Public Transport in Africa – present and future challenges / *Transport public en Afrique – Défis actuels et futurs*	Ousmane Thiam, UATP President/Président and UITP Vice-Président/Vice-président
	What does sustainable development mean for Africa? / *Le développement durable pour l'Afrique, c'est quoi ?*	Heather Allen, Sustainable Development Manager/ Responsable développement durable – UITP, Belgium
10.15-11.00	Coffee Break *and visit of the Expo area / Pause Café et visite de l'aire d'exposition*	
11.00-12.30	SESSION 1: **What future for public transport in Africa? / Quel avenir pour le transport public en Afrique? Chairman / Président : Tony Dufays**	
	1. Climate change, urbanization and sustainable urban transport in developing country cities / *Changement climatique, urbanisation et transport urbain durable des villes et pays en voie de développement*	**Sara Candiracci,** Energy and Transport Policies Section – UN-HABITAT, Nairobi, Kenya
	2. Promoting safe, affordable and reliable mass transit systems in African cities / *Promouvoir un système de transit de masse sécurisé, abordable et fiable dans les villes d'Afrique*	**Solomon Muhuthu Wathaka,** World Bank, Nairobi, Kenya
	3. Development of an ambitious integrated transport master plan in Africa / *Mise en oeuvre d'un ambitieux plan intégré de transport en Afrique*	**Lanfranc Situma,** Deputy Director General: National Transport Master Plan 2050 (NATMAP 2050) – Department of Transport, South Africa / Ministère des Transports, Afrique du Sud
	4. Evolution of mobility in the last 10 years and future perspectives in Sao Paulo - Brazil / *Evolution de la mobilité ces dix dernières années et futures perspectives pour Sao Paulo - Brésil*	**Luis Sergio De Campos Vilarinho,** Manager of Metropolitan Transportation Planning – Companhia do Metropolitano de Sao Paulo, Brazil

12.30-14.00	**Lunch Break /** *Déjeuner*	
14.00-16.00	SESSION 2: **Efficient organisation of public transport in Africa / Organisation efficiente du transport public en Afrique (with the support of ICLEI / avec l'appui de ICLEI) Chairman / Président : Assafoua Joseph Aka**	
	1. Organising the informal and formal public transport for better mobility / *Organiser le transport collectif formel et informel pour une meilleure mobilité*	**Ousmane Thiam,** President/Président – Dakar's urban Transport Executive Council / Conseil Exécutif des transports urbains de Dakar (CETUD), Senegal
	2. Involvement of a local community in public transport operations : experience of Douala / *Implication d'une collectivité locale dans les operations de transports publics : l'expérience de Douala*	**Lami Martin,** Study Engineer/Ingénieur d'études – Douala Urban Community / Communauté Urbaine de Douala , Cameroon
	3. The introduction of the Rea Vaya BRT system in the City of Johannesburg: developments, achievements and challenges / *L'introduction du système de BRT Rea Vaya dans la Ville de Johannesburg : développements, succès et défis*	**Colleen McCaul,** GTZ Project Manager: Johannesburg Rea Vaya BRT Project – South Africa /Afrique du Sud
	4. High Capacity public transport in East Africa: the Dar Rapid Transit / *Transports publics à grande capacité en Afrique de l'Est : l'exemple de Dar Rapid Transit*	**Asteria Mlambo,** Director of Transportation and Business Development/Directeur transport et prospection clientèle – DART, Tanzania
16. 00-16.30	**Coffee Break / Pause Café**	
16.30-17.30	SESSION 3: **Round - table debated from authorities and operators / table-ronde et débats entre autorités publiques et opérateurs**	
	Participants: • Asteria Mlambo – DART Tanzania • Adam Giambrone, Councilor – Toronto, Canada • Mathetha Mokanyama, CSIR – South Africa • Lami Martin – CUD – Douala, Cameroun • Mayors of Nairobi, Kampala and Dar es Salaam	Moderator: Bi Nagone Zoro, Managing Director/ Directeur Général, –AGETU, Ivory Coast
19.30-21.00	**Official dinner / Dîner officiel – TRIBE hotel – offered by Kenya Bus Service Management**	
Wednesday November 11th / Mercredi 11 Novembre		
09.00-10.30	SESSION 4: **Transport and environment / Transport et environnement Chairman / Président : Edwin Mukabana**	
	1. Clean Fuel Partnership and energy choices for transport in Africa / *Partenarat pour le choix des énergies propres pour le transport en Afrique*	**Jane Akumu,** Responsible for Transport, Urban Environment Unit / Responsable du transport, Unité Environnement Urbain – UNEP/PNUE, Kenya
	2. Transport Demand Management – International Approaches / *Gestion de la demande en transport – Approches internationales*	**Armin Wagner,** Transport Policy Advisor / Conseiller en politique de transport – GTZ German Technical Cooperation Agency, Germany
	3. Public transport and non-motorized transport in Africa in a sustainable perspective / *Transport public et transport non-motorisé en Afrique dans une perspective durable*	**Arjen Jaarsma,** Senior Consultant/Consultant senior – Balancia, The Netherlands/Pays-Bas
	4. A common purpose – an international partnership for sustainable low-carbon transport / *Un objectif commun: un partenariat international pour un transport bas carbone durable*	**Holger Dalkmann,** Program Manager Sustainable Transport – TRL LIMITED, United Kingdom

10.30-11.00	**Coffee Break / Pause Café**	
11.00 – 12.30	SESSION 5: **Making public transport the transport of choice around the world/ Promouvoir le transport public Chairman / Président: Heather Allen**	
	1. Trans-Africa Project : responding to African bus needs, a European Commission project achievements and perspectives to date/ *Le projet Trans-Africa financé par la Commission Européenne: accomplissements et perspectives*	UITP/Trans-Africa
	2 Practical bus rebuild programs - improve the reliability of your fleet while reducing operations cost / *programmes pratiques de rénovation de bus – améliorer la fiabilité de votre parc tout en réduisant les coûts d'opérations*	**Adam Giambrone,** Chairman/Président – Toronto Transit Commission, Canada
	3 BRT in Sao Paulo/	**Fabrizio Braga,** Sao Paulo, Brazil
12.30-13.30	CLOSING SESSION: **Synthesis and recommendations / Session de clôture: Synthèse et recommandations**	Edwin Mukabana, Managing Director/Administrateur délégué – BUSTRACK, Kenya Ousmane Thiam, President/Président – UATP
	• Reading of resolutions / Lecture des résolutions • Closing word of UATP President / Mot de la fin du Président UATP Closing of ceremony / Clôture de la cérémonie	
13.30-14.00	**Lunch Break / Déjeuner**	
14.00 – 15.30	WORKSHOP SESSION:	
	1 Making Public Transport the transport of choice – introduction to lobbying and stakeholder communication	Heather Allen, Senior Manager Sustainable Transport
	2. Round table: Operational marketing / *Table ronde: Marketing opérationnel*	Serge Koffi, Former Director of Communication and Marketing/*Ex-Directeur Communication et Marketing* – SOTRA, Ivory Coast
	Close of seminar	

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